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Psychological Predictors of Treatment Attendance and Functional Disability in Individuals with Chronic Back Pain

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Abstract

The present study sought to identify psychological variables capable of forecasting both the pursuit of treatment and the degree of disability experienced across the full span of chronic back pain. A total of 201 adults suffering from ongoing back pain were enlisted with assistance from healthcare providers. These individuals completed several standardized instruments: the Depression, Anxiety, and Stress Scale (DASS), the Oswestry Back Pain Disability Questionnaire (ODQ), the McGill Pain Questionnaire (MPQ), and the life control plus affective distress components drawn from the West Haven–Yale Multidimensional Pain Inventory (WHYMP). They further reported how many treatment sessions they had attended throughout the entire duration of their condition. The analysis tested depression, life control, and affective distress as indirect influences on the severity of disability, with the number of treatment sessions serving as the mediating factor. Results showed that every single-unit improvement in life control corresponded to nearly 30 extra treatment sessions attended, whereas every single-unit increase in affective distress was linked to 16 fewer sessions, and every single-unit rise in depression predicted 4 fewer sessions. Collectively, these factors accounted for 44% of the variation observed in treatment-seeking behavior. The influence of life control and affective distress on disability was entirely channeled through treatment attendance; in contrast, depression maintained an independent direct impact on disability. Treatment attendance itself exerted a notable effect on disability outcomes. In summary, individuals displaying reduced life control together with heightened affective distress and depression reported more intense pain and greater disability. This outcome stemmed partly from their distinctive patterns of seeking treatment.

Keywords: Depression, Life control, Affective distress, Chronic back pain, Disability, Treatment

Introduction

Extensive evidence confirms a clear positive link between chronic back pain and elevated psychological distress [1-4]. This connection rests on an intricate web of interrelated elements, supported by sound theoretical frameworks that clarify how these variables can exert both immediate and mediated effects on patients' outcomes [5]. Curiously, people who endure the most intense pain frequently participate in the fewest treatment sessions. By synthesizing findings from seven separate investigations, Ref. [2] highlighted that although the incidence of lower back pain (LBP) continues to rise and a wider array of treatments has become available, fewer than 60% of those affected still pursue care for the problem. As a result, scientific attention has shifted from simply documenting the straightforward impact of chronic back pain on self-reported disability toward uncovering the underlying processes responsible for differences in how readily people seek help, stick with recommended care, and ultimately achieve better or worse results.

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Among the various mechanisms under consideration, psychological elements emerge as especially critical. They carry strong theoretical potential to shape both the initial decision to obtain treatment and the consistency with which it is followed, while simultaneously amplifying the sense of disability. Despite this importance, relatively little empirical work has examined how psychological factors contribute—both directly and indirectly—to the outcomes of chronic back pain (CBP) by influencing treatment-seeking patterns throughout the full course of the condition [6].

Depression, treatment seeking, and perceived disability

Individuals living with long-term medical conditions who also experience depression commonly describe experiencing a greater volume of physical symptoms [4, 7]. In one study, Goldstein *et al*. [8] observed that depression correlated with markedly poorer compliance with recommended self-management behaviors (including dietary changes, physical activity, and consistent medication use) and with higher rates of complications and symptom burden in chronic illnesses. Consensus exists across the literature concerning the frequent overlap between depression and persistent pain conditions [1, 4, 7]. Pincus and Morley [9] introduced a conceptual framework for understanding the interplay between depression and pain. Instead of treating these as two distinct phenomena, their model posits that pain represents a unified experience interpreted through both somatic and emotional channels. The researchers proposed that people with chronic back pain often maintain distorted cognitive frameworks that may overlap with features of psychological disorders. Their work concluded that psychological distress, the intensity of pain, and tendencies toward catastrophizing jointly generate functional limitations, implying that therapeutic efforts should concentrate on correcting maladaptive cognitive patterns related to pain. Keeley *et al*. [6] similarly reported that depression combined with certain beliefs about pain and interpersonal stress reliably predicted lower rates of attendance at treatment appointments.

Even though depression frequently coexists with pain, failing to address the depressive symptoms can undermine the benefits of interventions designed for chronic pain management [10]. Evidence indicates that depression reduces the overall success rate of pain-relief strategies [11] and frequently leads to “low adherence to treatments” [12]. Silva *et al*. [13] demonstrated that depression functions as a significant indicator of daily functioning and recommended incorporating a standardized depression assessment alongside measures of overall pain intensity into standard clinical practice.

Life control, treatment seeking, and perceived disability

Life control refers to a person’s capacity to comprehend both their internal and external surroundings, to shape the direction of their own life, to find meaning in daily experiences, and to achieve satisfactory levels of life fulfillment [14]. Kerns *et al*. [15] found that feelings of control were associated with greater self-confidence and stronger problem-solving skills. Using the Problem-Solving Inventory (PSI, third subscale [16]), the researchers identified clear links between effective problem solving and lower scores on measures of pain, disability, and depression in individuals with chronic pain. Specifically, a stronger sense of personal control reflected better perceived problem-solving ability and showed negative associations with pain intensity, disability levels, and depressive symptoms. Härkäpää *et al*. [17] reported that healthy beliefs about the locus of control were associated with positive outcomes in back pain treatment. Individuals with firmer internal beliefs gained greater benefit from therapy and were more likely to complete prescribed back exercises. The same study also revealed that signs of psychological distress were strongly related to reduced commitment to performing those exercises. Perceptions of life control can influence how people evaluate events and even perceive temporal shifts [18]. In a follow-up investigation, Härkäpää *et al*. [17] found that optimistic health expectations and control beliefs were important predictors of gains in functional ability. These investigations relied on depression inventories and the Health Optimism Scale, both of which contain questions addressing locus of control and beliefs about pain [17]. In a Korean sample, patients with chronic back pain (CBP) described lower overall satisfaction with their care and reduced quality of life [19]. Life control acted as a mediator between pain intensity and the extent of physical limitation. Additionally, perceived life control emerged as a pathway through which symptoms of PTSD and pain severity indirectly influenced psychosocial difficulties, which in turn were linked to physical impairment [20].

Affective distress, treatment seeking, and perceived disability

Affective distress is a biologically rooted process involving cognitive evaluation and a readiness to act. It has been described as a core and structuring element of depression [21]. This form of distress encompasses both anxiety and depression, which trigger physiological reactions similar to those seen in pain (sharing overlapping neural routes). Affective distress may function as a primary feature of depression, creating the setting in which negative thought patterns arise and promote unhelpful beliefs along with pessimistic ways of interpreting information [21]. Higher amounts of affective distress and anxiety can heighten the experience of pain. Among Turkish patients with cancer, affective distress influenced pain ratings more strongly than the actual measured intensity of pain [22]. The authors further noted that addressing emotional or affective distress could be especially useful for better pain management and greater satisfaction with cancer treatment. An effective approach to cancer-related pain should incorporate the patient's personal understanding and interpretation of their pain [22]. Feelings of life chaos show strong ties to anxiety and depression and have been connected to how consistently people follow medication regimens [23, 24]. Elevated affective distress was shown to influence the relationship between believing in the value of treatment and actually sticking to it in people with long-term health problems. Scores on affective distress and life control proved to be significant predictors of both pain intensity and the unpleasantness of pain in patients suffering from orofacial pain [25].

Even though no direct connection appeared between pain intensity and disability, a distinct pattern emerged whereby negative thought patterns decreased physical effort and increased avoidance behaviors driven by fear. Some researchers have proposed that the true source of disability across medical conditions lies not in the injury or illness itself, but in the pain it generates [26].

Aims and hypotheses

Only a small body of research has examined the factors that affect attendance at treatment sessions and whether such attendance leads to favorable outcomes [27]. The current study has identified sound theoretical grounds for expecting that the three psychological factors under examination can produce both direct and indirect influences on outcomes for patients with chronic back pain (CBP) through their impact on treatment attendance. Accordingly, this study aimed to evaluate the direct and indirect influences of these psychological variables on perceived disability throughout the full course of a CBP diagnosis (i.e., back pain persisting beyond 6 months). Drawing on the framework suggested by Pincus and Morley [9], the following hypotheses were proposed:

H1: Depression (positive direction), life control (negative direction), and affective distress (positive direction) will exert a significant direct effect on perceived disability, after accounting for age, gender, duration of long-term pain, and pain severity.

H2: Depression (negative direction), life control (positive direction), and affective distress (negative direction) will exert a significant indirect effect on perceived disability through treatment attendance, after accounting for age, gender, duration of long-term pain, and pain severity.

Materials and Methods

Participants

Health professionals helped gather a group of 201 people by sharing the survey materials with suitable patients in their practices. Eligibility required individuals to have dealt with ongoing or repeated back pain that continued beyond three months [28] and to be no younger than 18 years. The group included 89 males and 112 females, all residing in the metropolitan area of Melbourne, Australia. Ages in the sample ranged from 19 to 88, with an average of 47.18 years (SD = 13.44). A clear majority—72.6%—described their pain as having lasted beyond 24 months, while 20.9% noted a duration falling somewhere between 6 and 24 months.

Depression anxiety stress scales (DASS)

Three distinct self-report instruments make up the DASS, each one created to capture the negative emotional experiences tied to depression, anxiety, and stress. In the full DASS-42, each scale comprises 14 items that tap the main features of these three states [29]. Answers to the 42 statements use a 4-point response format, ranging from 0 ("Did not apply to me at all") to 3 ("Applied to me very much, or most of the time"). Adding up the appropriate items produces separate totals for depression, anxiety, and stress. The briefer DASS-21 form showed excellent internal consistency, yielding Cronbach's alphas of 0.94 (depression), 0.87 (anxiety), and 0.91 (stress).

McGill pain questionnaire (SF-MPQ)

Researchers used the pain rating index from the McGill Pain Questionnaire (MPQ) [30] to assess pain severity, with values ranging from 0 (no pain) to 5 (excruciating). That subscale showed an intraclass correlation coefficient of 0.75 and robust internal reliability, as reflected in a Cronbach's alpha value above 0.75.

Oswestry low back pain questionnaire

Functional effects of low back pain on ordinary routines were evaluated through the Oswestry Low Back Pain Disability Questionnaire (ODQ), which looks at interference with common tasks including sitting, standing, and walking [31]. The scale consists of 10 items; each item is scored 0-5. When totaled, the possible range extends from little or no disability (0–4) to full disability (35–50). This widely recognized questionnaire demonstrates strong internal consistency, with an alpha coefficient of 0.85.

Life control and affective distress (West haven–yale multidimensional pain inventory, WHYMPI)

Two targeted subscales came from the West Haven–Yale Multidimensional Pain Inventory (WHYMPI/MPI). One subscale used two items to rate perceived life control, while the other used three items to rate affective distress; both sets of ratings were on a 0–6 continuum. Subscale averages were computed by summing responses and dividing by the number of items. Earlier work by Kerns *et al*. [32] established that reliability coefficients for the various WHYMPI scales typically range from 0.70 to 0.90.

Demographic data collection questionnaire (DDCQ)

A tailored 12-item instrument collected background details plus additional factors known to shape the chronic low back pain experience. Among the captured elements were the type of health professional consulted, the total number of treatment visits for back pain, and standard personal information such as gender, age, pain intensity, and duration.

The number of treatment visits reported ranged from 0 to 450. Professionals taking part came mostly from allied health areas, including physiotherapists, acupuncturists, osteopaths, remedial massage providers, hydrotherapists, and comparable positions.

Procedure

Preparation involved 450 pre-addressed envelopes with return postage. Inside each one sat the study overview, a consent document, and the full collection of measures. Distribution took place with support from allied health professionals, who received a guidance letter explaining the project and outlining steps for inviting patients and handing out the packets. Contact occurred with five practitioners from each listed specialty: chiropractors, physiotherapists, osteopaths, and acupuncturists. Professionals who chose to join the effort confirmed their involvement by signing and sending back a consent form. Analysis of the incoming data relied on the Statistical Package for the Social Sciences (SPSS) version 22 software. Of the 450 packets sent, 201 were returned, yielding a response rate of 44.66%. Before taking part, every respondent reviewed an invitation letter and provided signed consent; the letter also outlined how to access psychological support services should any distress arise from the questions.

Because the research centered on psychological influences affecting how often people attended treatment—and thereby shaping disability across the whole span of the condition—close examination went into the pain duration reports. **Table 1** makes clear that nearly all participants had lived with back pain beyond the 6–24 month window, satisfying the accepted threshold for chronicity set by Chou [33]. The largest share had endured symptoms for more than two years; the next sizable portion fell into the 6 months to 2 years bracket, and just 10 cases involved pain shorter than 6 months. No participants were removed from the dataset.

Table 1. Overall pain duration frequency (%) of the sample.

Duration	Count (%)
0–3 months	2 (1.11%)
3–6 months	8 (4.44%)
6–24 months	41 (22.78%)
24+ months	129 (71.67%)

Variables

The specially created demographic form provided basic personal details, including gender and age. Information on pain itself was drawn from the McGill Pain Questionnaire (severity levels: none, mild, moderate, or severe) and the demographic form (duration: 0–3 months, 3–6 months, 6–24 months, or exceeding 24 months). Measures of psychological aspects came via the DASS-21 (depression rated at moderate or severe levels) and the WHYMPI (ratings of perceived life control plus affective distress). Since the work explored pathways from depression, life control, and affective distress toward chronic back pain (CBP) results through the route of treatment attendance, and given that past investigations noted variations linked to gender, age, and pain intensity, these elements all served as control variables during the core statistical testing.

Statistical analysis

Data were first screened and cleaned. Preliminary verification of mediation prerequisites then took place through Pearson correlation analysis. The core examination relied on a path model designed to uncover the indirect pathways linking depression, life control, and affective distress to disability, with the number of treatment sessions acting as the mediator. This modeling controlled for age, gender, overall pain duration, and pain intensity **(Figure 1)**.

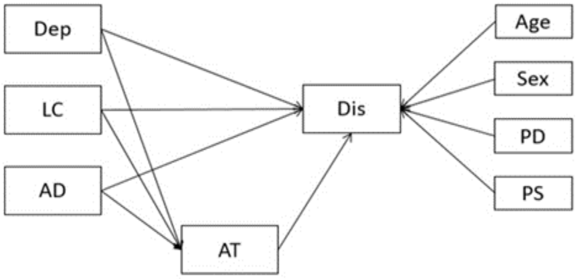

Figure 1. Hypothesized model with depression, life control, and affective distress indirectly predicting disability via treatment attendance. Note: Dep = depression; LC = life control; AD = affective distress; AT = attending treatments; Dis = disability; PD = pain duration, total; PS = pain severity. Control variables are presented on the right-hand side of the model. Covariances between predictors are not displayed for brevity.

Goodness-of-fit was assessed using conventional standards: the Tucker–Lewis Index (TLI) and comparative fit index (CFI) both exceeding 0.95; the root-mean-square error of approximation (RMSEA) and its 90% confidence interval; the standardized root-mean-square residual (SRMR) lower than 0.05; and the χ^2 test against a baseline model. Overall, these indicators supported an adequate alignment between the proposed structure and the actual data [34, 35]. Indirect effects were tested for significance using bias-corrected accelerated confidence intervals based on 10,000 bootstrap replications at the 0.95 alpha level; effects were judged significant when the intervals did not include zero. Unstandardized coefficients were emphasized for interpretability, given the extensive spread in lifetime treatment visits compared with other measures. Correlations were computed in IBM SPSS Version 26, and the path model was run using the lavaan package in R (version 0.6–10) [36].

Results and Discussion

Summary statistics covering all study variables appear in the tables that follow. **Table 2** reports means and standard deviations, and **Table 3** displays the Pearson correlation matrix.

Table 2. Means and standard deviations for men and women by psychological indicators, number of treatment sessions received, and disability scores.

Variables	Male participants	Female participants	t (df)	P-value
Life control	4.58 (4.29)	4.74 (4.40)	−2.71 (178)	0.01
Affective distress	3.35 (1.57)	2.87 (1.31)	2.21 (178)	0.03
Depression	16.00 (9.88)	14.34 (11.72)	1.02 (178)	0.01
Number of treatment sessions	118.77 (193.57)	191.36 (284.54)	−22.02 (156)	0.05
Disability (ODQ score)	18.34 (8.80)	16.02 (10.57)	1.59 (173)	0.11

Table 3. Pearson's correlations between variables.

Variables	Treatment sessions	Disability	Perceived life control	Affective distress	Pain score	Depression
Treatment sessions	–					
Disability	−0.38 **	–				
Life control	0.14	−0.25 **	–			
Affective distress	−0.21 **	0.34 **	−0.70 **	–		
Pain score	−0.11	0.32 **	−0.31 **	0.38 **	–	
Depression	−0.51 **	0.55 **	−0.51 **	0.58 **	0.35 *	–

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Although sample-size recommendations for path and structural equation models vary across sources [37], the present group of 201 participants met the common benchmark of five or more cases per estimated parameter in a confirmatory factor analysis [37]. Missing values affected fewer than 1% of observations and were handled using listwise deletion. Conditions required for mediation were clearly satisfied: depression, life control, and affective distress each correlated reliably with both treatment attendance frequency and perceived disability. The main path model evaluated indirect routes from depression, affective distress, and life control first to treatment attendance and subsequently to perceived disability. Several fit measures fell within acceptable ranges ($\chi^2 = 11.374(4)$, $P < 0.023$, SRMR = 0.03, CFI = 0.95), yet RMSEA reached 0.101 [0.034, 0.173] with a broad 90% confidence interval. A notable chi-square result was foreseeable due to the test's sensitivity to sample size and the markedly wider numerical range of the treatment attendance variable relative to the others. These elements likely drove the elevated chi-square and RMSEA values. Because the model drew directly from theoretical frameworks describing relationships among the variables, path coefficients were interpreted without pursuing revised model configurations.

Direct and indirect predictors of treatment attendance and disability

Depression, affective distress, and life control jointly explained a large portion of variance in treatment attendance ($R^2 = 0.44$). When all variables were included, the full set of predictors accounted for substantial variance in perceived disability ($R^2 = 0.40$).

Unstandardized estimates from the path model are illustrated in **Figure 2**. Each additional point on the depression measure was associated with roughly 4 fewer lifetime treatment sessions (b = −3.87 (0.90) [−5.78, −2.20]). Affective distress produced a stronger negative link, predicting nearly 17 fewer sessions per point increase (b = −16.68 (7.01) [−30.35, −2.68]). Life control exerted the most powerful positive influence, with each point rise associated with almost 30 additional sessions attended (b = 29.38 (7.53) [15.52, 44.92]).

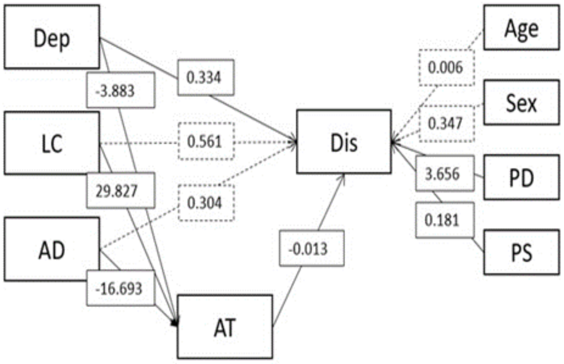

Figure 2. The full mediation model. Values depict unstandardized β weights. Note: Dep = depression; LC = life control; AD = affective distress; AT = attending treatments; Dis = disability; PD = pain duration, total; PS = pain severity. Control variables are presented on the right-hand side of the model. Dashed lines represent non-significant paths ($p > 0.05$). Covariances between predictors are not displayed for brevity.

Treatment attendance in turn showed a modest negative association with perceived disability (b = −0.01 (0.00) [−0.02, −0.01]). For indirect effects, depression displayed partial mediation; its direct pathway to disability stayed significant (b = 0.32 (0.07) [0.15, 0.51]). In contrast, after accounting for mediation through treatment attendance, life control (b = 0.55 (0.56) [−0.61, 1.61]) and affective distress (b = 0.30 (0.56) [−0.83, 1.42]) no longer showed significant direct links to disability.

Bias-corrected accelerated bootstrap confidence intervals confirmed small yet significant indirect effects, though lower bounds frequently neared zero. Depression carried a modest indirect influence on disability (b = 0.04 (0.02) [0.01, 0.10]), life control produced a larger negative indirect effect (b = −0.38 (0.18) [−0.85, −0.09]), and affective distress showed a comparable positive indirect effect (b = 0.21 (0.08) [0.04, 0.56]). While the per-session impact on disability appears limited, the variable reflected attendance spread across the full illness timeline and covered a very broad numerical range. Thus, modest per-session improvements can accumulate into meaningful overall changes when individual differences in total treatments are taken into account. Even so, the overall indirect contribution remained modest relative to the total effect, accounting for only 2.67%.

The current study examined three key psychological factors as potential mechanisms underlying treatment attendance by evaluating both their direct and indirect influences on disability among individuals with chronic back pain (CBP) across the full length of their condition. All three variables — depression, life control, and affective distress — were linked to disability, as was the number of treatments attended. Importantly, each additional treatment session was associated with reduced disability, highlighting the value of ongoing treatment and rehabilitation in managing CBP. A distinctive strength of this research lies in its focus on the entire illness timeline while statistically accounting for pain duration within the model.

Depression

The results aligned with earlier studies showing that depression exerts both direct and indirect (through treatment attendance) effects on disability. Depression appears to reduce motivation to seek or continue treatment [38], partly because it fuels fearful thinking [6], lowers physical activity, heightens fear-avoidant behaviors [27], and promotes catastrophizing [39] — all of which contribute to fewer treatment sessions. The notion of biased cognitive schemas among back pain sufferers [9] further helps explain why depression may discourage treatment seeking. Taken together with existing evidence, these findings underline that psychological distress functions as a significant barrier to obtaining care for CBP. Depression generates distorted thinking, fosters avoidance and fear, diminishes drive, and produces psychosomatic symptoms that intensify the overall pain experience [39].

Beyond its influence on treatment attendance, depression maintained a direct connection to disability. This pattern is consistent with previous reports [1, 7]. Some researchers attribute the link to the interplay between pain and mood, while others propose viewing pain and depression as “two perceptions of the same underlying problem” [9]. The same negative cognitive framework that lowers expectations of treatment success and reduces help-seeking may also directly inflate perceptions of disability. Although there is a broad consensus on the strong association between depression and chronic pain, the question of causality remains unresolved in the literature. If depression and physical disability represent two aspects of the same phenomenon — one emotional and one physical — it may be useful to conceptualize them jointly under a broader idea of global disability. Most current measurement tools and questionnaires, however, concentrate primarily on physical limitations, functional loss, and impairment while largely overlooking psychological elements.

Díaz-Aristizabal *et al.* [40] reported that more than 50% ($r = 0.54$) of people describing significant disability also met criteria for clinical depression. Melzack [30] observed that long-term pain often breeds frustration, especially when patients feel dismissed by healthcare providers despite ongoing symptoms without clear physical damage. Other authors describe a reciprocal, self-reinforcing cycle between depression and disability in chronic pain [7, 30].

Collectively, these results reinforce the view that CBP is a unique condition in which psychological distress forms an inseparable component of disability, intertwining physical and emotional domains and producing impairment in both. Psychological distress thus operates on two levels: as a motivational obstacle that hinders recovery and as a driver of catastrophizing that anticipates poor outcomes [39]. More research is needed to clarify how catastrophizing contributes to the persistence and deepening of back pain well beyond the typical recovery window following an initial injury.

Life control

While the Depression, Anxiety and Stress Scale (DASS) [29] served as the primary source of psychological data, life control and affective distress subscales from the West Haven–Yale Multidimensional Pain Inventory (WHYMPI) [30] were included as separate predictors. Because life control reflects coping resources and perceived mastery, it provided valuable additional insight. Coping is widely recognized as a central pillar of psychological resilience among people living with chronic pain. In this study, life control showed an indirect effect on disability, suggesting that individuals with strong problem-solving skills and a greater sense of personal control over life events are better positioned to actively participate in treatment [15, 17]. These observations support earlier work by Härkäpää *et al.* [17], who linked control beliefs to improved functional outcomes, and align with findings from Choi *et al.* [19] and related research indicating that perceived life control can serve as a pathway influencing psychosocial impairment [20].

Affective distress

Affective distress likewise showed an indirect influence on disability. This outcome matches earlier findings reported in the literature [22-25]. Feelings of life chaos can be viewed as closely related to affective distress [24]. They may account for reduced treatment adherence [23] by lowering patients' belief in the usefulness of available therapies. Affective distress can alter how individuals perceive their pain and limit their willingness or capacity to follow through with recommended changes during treatment.

Although depression continued to exert a direct effect on disability, the influences of life control and affective distress were fully accounted for by treatment attendance. One possible reason for this difference is that depression measures capture a broader array of symptoms and consequences. Life control scores often reflect sensations of hopelessness and may even involve altered time perception, such as the feeling that time passes more slowly [18]. In contrast, affective distress appears to be a narrower indicator that centers on negative self-perceptions and critical evaluative processes. These processes can strongly undermine confidence in treatment effectiveness, making sufferers less inclined to participate [21].

Engaging in treatment plays a crucial role in stopping the shift from acute to chronic pain, as noted previously [41]. While acute pain is usually tied to a clear physical cause, chronic pain develops a distinct social and psychological character that overshadows the original physical sensation. The present study emphasized psychological distress as a central feature of the chronic back pain (CBP) experience and associated disability, without attempting to resolve questions of causality or directionality. People with CBP face restrictions not only from physical limitations but also — and perhaps more critically — from the burden of psychological distress.

There is a strong case for developing a broader concept of disability that captures overall loss of functioning, given how emotional and physical symptoms interact and compound each other in back pain sufferers. A deeper understanding of the processes that drive treatment engagement would enable clinicians to better address maladaptive cognitive patterns that reduce participation and worsen disability. Psychological factors have clearly emerged as important predictors of how often individuals attend treatment.

The presence or absence of these treatments was also linked to varying levels of disability. The value of this study lies in clarifying the connections between psychological variables, treatment attendance, and disability outcomes. The pattern of results consistently showed that participants experiencing higher psychological distress not only reported greater disability but also attended fewer treatment sessions and endured longer periods of back pain. Additional research is needed to explore how treatment involvement influences the progression from acute to chronic back pain.

Limitations

The participation rate in this study was below 50%. This relatively low rate may stem from the recruitment method, which depended on health professionals distributing questionnaires to their patients. Additionally, the number of treatment sessions reported showed a very wide range. Given that data collection covered the full duration of the illness and that some individuals had lived with CBP for much longer than others, such variability is understandable. This broad range illustrates how even modest effects of treatment attendance on disability can accumulate meaningfully when additional sessions occur over extended periods, ultimately leading to noticeably lower disability levels. Although control variables were included to adjust for illness duration, future work could focus on a more homogeneous sample of individuals with longer-term back pain. The study did not gather information on participants' formal psychiatric diagnoses or any medications they were taking; subsequent research should consider incorporating these factors. Finally, all data relied on self-report measures, and this should be taken into account when interpreting the results.

Conclusion

In summary, chronic back pain presents as a biopsychosocial condition in which psychological elements clearly affect both treatment engagement and resulting disability. The degree to which individuals participated in treatment appeared to be shaped more by their personal psychosocial circumstances than by the intensity of pain they reported [42]. This dynamic can prolong the shift from a brief acute pain episode linked to injury into a persistent, long-term chronic pain state, even after the original physical damage has healed.

For those already experiencing chronic pain, greater attention should be directed toward addressing psychological distress. Such distress can amplify pain sensations and impair cognitive functioning, thereby reducing the likelihood of effective engagement in physical rehabilitation. Both the reviewed literature and the present findings highlight psychological distress as a key component of chronic pain. Clinicians may therefore benefit from combining psychological interventions with conventional physical treatments for chronic back pain to improve adherence and overall outcomes. Despite extensive review of existing tools, no single questionnaire or assessment instrument currently integrates all relevant domains of chronic pain.

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Conflict of Interest: None

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Ethics Statement: The project was approved by the Victoria University Human Ethics Committee (HRETH 08/282).
Informed consent was obtained from all subjects involved in the study.

References

1. Chen S, Jackson T. Pain beliefs mediate relations between general resilience and dysfunction from chronic back pain. Rehabil Psychol. 2018;63:604–611.
2. Ferreira ML, Machado G, Latimer J, Maher C, Ferreira PH, Smeets RJ. Factors defining care-seeking in low back pain—A meta-analysis of population based surveys. Eur J Pain. 2010;14:e1–e7.
3. Vugts MA, Joosen MC, Mert A, Zedlitz AM, Vrijhoef HJ. Effectiveness of serious gaming during the multidisciplinary rehabilitation of patients with complex chronic pain or fatigue: natural quasi-experiment. J Med Internet Res. 2018;20:e250.
4. Watrous JR, McCabe CT, Jones G, Farrokhi S, Mazzone B, Clouser MC, et al. Low back pain, mental health symptoms, and quality of life among injured service members. Health Psychol. 2020;39:549–57.
5. Edwards RR, Dworkin RH, Sullivan MD, Turk DC, Wasan AD. The role of psychosocial processes in the development and maintenance of chronic pain. J Pain. 2016;17(Suppl 9):T70–T92.
6. Keeley P, Creed F, Tomenson B, Todd C, Borglin G, Dickens C. Psychosocial predictors of health-related quality of life and health service utilisation in people with chronic low back pain. Pain. 2008;135:142–50.
7. Monreal-Bartolomé A, Barceló-Soler A, Castro A, Pérez-Ara M, Gili M, Mayoral F, et al. Efficacy of a blended low-intensity internet-delivered psychological programme in patients with multimorbidity in primary care: study protocol for a randomized controlled trial. BMC Psychiatry. 2019;20:19.
8. Goldstein CM, Gathright EC, Garcia S. Relationship between depression and medication adherence in cardiovascular disease: the perfect challenge for the integrated care team. Patient Prefer Adherence. 2017;11:547–59.
9. Pincus T, Morley S. Cognitive-processing bias in chronic pain: a review and integration. Psychol Bull. 2001;127:599–617.
10. Teh CF, Zaslavsky AM, Reynolds CF 3rd, Cleary PD. Effect of depression treatment on chronic pain outcomes. Psychosom Med. 2010;72:61–7.
11. Holmes A, Christelis N, Arnold C. Depression and chronic pain. Med J Aust. 2013;199:S17–S20.
12. Feingold D, Brill S, Goor-Aryeh I, Delayahu Y, Lev-Ran S. Depression and anxiety among chronic pain patients receiving prescription opioids and medical marijuana. J Affect Disord. 2017;218:1–7.
13. Silva AG, Alvarelhão J, Queirós A, Rocha NP. Pain intensity is associated with self-reported disability for several domains of life in a sample of patients with musculoskeletal pain aged 50 or more. Disabil Health J. 2013;6:369–76.
14. Pietilä AM. Life control and health. Int J Circumpolar Health. 1998;57:211–7.
15. Kerns RD, Rosenberg R, Otis JD. Self-appraised problem solving and pain-relevant social support as predictors of the experience of chronic pain. Ann Behav Med. 2002;24:100–5.
16. Heppner PP, Peterson CH. The development and implications of a personal problem solving inventory. J Couns Psychol. 1982;29:66–75.
17. Härkäpää K, Järvikoski A, Mellin G, Hurri H, Luoma J. Health locus of control beliefs and psychological distress as predictors for treatment outcome in low-back pain patients. Pain. 1991;46:35–41.
18. Msetfi R, Murphy R. Depression: why life can feel out of control. ScienceDaily. 2013.
19. Choi YS, Kim DJ, Lee KY, Park YS, Cho KJ, Lee JH, et al. How does chronic back pain influence quality of life in Koreans: a cross-sectional study. Asian Spine J. 2014;8:346–52.

20. Palyo SA, Beck JG. Post-traumatic stress disorder symptoms, pain, and perceived life control. Pain. 2005;117:121–7.
21. Johnson SL, Hayes AM, Field TM, Schneiderman N, McCabe P, editors. Stress, coping and depression. London: Psychology Press; 1999.
22. Cetin AA, Bektas H, Ozdogan M. The West Haven Yale Multidimensional Pain Inventory: reliability and validity of the Turkish version in individuals with cancer. Eur J Oncol Nurs. 2016;20:1–9.
23. Smolderen K, Whooley M. Psychological distress and medication adherence: creating order out of chaos? Cardiovasc Qual Outcomes. 2023;6:615–6.
24. Zullig L, Shaw R, Crowley M, Hoff Lindquist J, Grambow SC, Peterson E, et al. Association between perceived life chaos and medication adherence in post-myocardial infarction patients. Circ Cardiovasc Qual Outcomes. 2013;6:619–25.
25. Boggero IA, Carlson CR. Somatosensory and affective contributions to emotional, social, and daily functioning in chronic pain patients. Pain Med. 2015;16:341–7.
26. Waddell G. The back pain revolution. London: Churchill Livingstone; 2004.
27. Walker BF, Muller R, Grant WD. Low back pain in Australian adults: prevalence and associated disability. J Manip Physiol Ther. 2004;27:238–44.
28. Merskey H. Classification of chronic pain. Pain. 1986;3:226.
29. Lovibond SH, Lovibond PF. Manual for the Depression Anxiety Stress Scales. Sydney: Psychology Foundation; 1995.
30. Melzack R. The tragedy of needless pain. Sci Am. 1990;262:27–33.
31. Fairbank JCT, Davies JB, Couper J, O'Brien JP. The Oswestry Low Back Pain Disability Questionnaire. Physiotherapy. 1980;66:271–3.
32. Kerns RD, Turk DC, Rudy TE. The West Haven-Yale Multidimensional Pain Inventory (WHYMPI). Pain. 1985;23:345–56.
33. Chou R. Low back pain (chronic). BMJ Clin Evid. 2010;2010:1116.
34. Hu LT, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis. Struct Equ Model. 1999;6:1–55.
35. Kline RB. Principles and practice of structural equation modeling. Montreal: Guilford; 2015.
36. Rosseel Y. lavaan: an R package for structural equation modeling. J Stat Softw. 2012;48:1–36.
37. Wolf EJ, Harrington KM, Clark SL, Miller MW. Sample size requirements for structural equation models. Educ Psychol Meas. 2013;73:913–34.
38. Varsi C, Ledel Solem IK, Eide H, Børøsund E, Kristjansdottir OB, Ødegaard M, et al. Health care providers' experiences of pain management and attitudes towards digitally supported self-management interventions for chronic pain. BMC Health Serv Res. 2021;21:275.
39. Knowlton CN, Kryvanos A, Poole M, Christopher M, Lafavor T. Acceptance and commitment therapy for chronic pain and depression: a single-case study. Clin Case Stud. 2019;18:254–69.
40. Díaz-Aristizabal U, Valdés-Vilches M, Fernández-Ferreras TR, de los Santos G, Oliva N, Sánchez-Manso JC, et al. Correlations between impairment, psychological distress, disability, and quality of life in peripheral facial palsy. Neurologia. 2019;34:423–8.
41. Whitfill T, Haggard R, Bierner SM, Pransky G, Hassett RG, Gatchel RJ. Early intervention options for acute low back pain patients: a randomized clinical trial. J Occup Rehabil. 2010;20:256–63.
42. Gatchel RJ, Peng YB, Peters ML, Fuchs PN, Turk DC. The biopsychosocial approach to chronic pain. Psychol Bull. 2007;133:581–624.