**Table 1:** Characteristics of included articles.

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| --- | --- | --- | --- | --- |
| **Author & Date** | **Outcome Measures** | **Sample** | **Conclusion** | **Psychometric Properties** |
| Moseley GL, 2004 [12] | The brief survey of pain attitudes (SOPA)  The pain catastrophising scale (PCS) | N = 121 CLBP  Age: 36-68 | Change in pain cognitions is associated with change in physical performance, even when there is no opportunity to be physically active. Unhelpful pain cognitions should be considered when interpreting physical assessments. | **SOPA -Brief:** Four domains had good Cronbach's alpha values (0.74-0.85) and three had moderate (0.58-0.65)  **PCS:** Cronbach’s α = 0.92 (95% CI = 0.91-0.93)  For total scale: Test-retest reliability = Spearman ρ = 0.88, 95% CI = 0.83-0.93) Data was not reported for the subscales. |
| Paul Karoly, et al. 2008 [17] | 4-item Self-Efficacy scale of Goal Systems Assessment Battery (GSAB )  Center for Epidemiological Studies Depression Scale(CES-D) | n = 100 CLBP  Age: 30-65 | Clinical pain specialists should treat pain-induced fear as a means of forestalling disability and depression, and that they should also seek to modify how CLBP patients think about and organize their life goals | **GSAB:** Cronbach’s α = 0.86.  **CES -D:** Internal consistency reliability as estimated by coefficient a was 0.86. Retest reliability of 0.67 |
| Nadar MS, et al. 2016 [18] | Visual analogue scale (VAS)  Contextual Memory Test(CMT) Short-term memory and long term memory  A Quick Test  Trail Making Test  Digit Forward Test  Digit Backward Test  D2 test | n = 69  40 CLBP  29 No Pain  Age 18-54 | The effect of Middle Eastern culture on the cognitive abilities of patients with chronic pain was negligible. | **VAS:**  Test-retest reliability r = 0.94  **CMT:**  Test-retest reliability = 0.74-0.87  **Trail Making Test**- Test-retest reliability = 0.70-0.78; inter-rater reliability = 0.96-0.98.  **Digit Forward Test**  **Digit Backward Test**  Test-retest reliability (r) = 0.43-0.77.  **D2 test:** Cronbach’s α = 0.95-0.98, and a Spearman’s coefficient of 0.47 |
| Schiltenwolf M, et al. 2017 [19] | Multiple choice vocabulary test (MWT-B,17)  Wechsler Adult Intelligence Scale (WAIS-III)  Trail-making test (TMT)  CANTAB tests | n = 58, 33 CLBP and 25 healthy controls  Age: 20 to 70 years | CLBP patients typically presented with maladaptive primary physical and secondary cognitive compensations for their pain disorders that become a mechanism for ongoing pain. For this group, specifically targeted physiotherapy interventions and cognitive behavior therapy, have the potential to impact on both the physical and cognitive drives of pain, leading to resolution of the disorder | **(WAIS-III):** test-retest reliabilities ranged from 0.70 (7 subscales) to 0.90 (2 subscales).  **CANTAB tests:**  Test-retest reliability = 0.71-0.89). |
| Cherkin DC, et al. 2017 [20] | Modified Roland Disability Questionnaire [RDQ] | n = 342 CLBP  Age: 20-70 years | Participants randomized to CBT compared with usual care showed greater improvement in function (adjusted mean difference in change, -1.84 [95% CI, -3.32 to -0.37]). MBSR did not differ significantly from usual care or CBT at 2 years | Test Retest reliability 0.68-0.75 |
| Spindler M, et al. 2018 [13] | Allgemeine Depressionsskala (ADS-K) | n = 42 Chronic Pain(CP)  Age: 33-68 years | This article presents new insight on which cognitive mechanisms are influenced by CP with the focus on numerical spatial abilities. It could therefore provide useful knowledge in developing new pain assessment tools specifically for patients suffering from CP. | Cronbach's Alpha > 0.90 |
| Hampel P, 2019 [14] | German version of the Center for Epidemiological Studies Depression Scale (CES-D) | n = 583 CLBP  Age: 28-64 | Patients with high levels of depressive symptoms showed improvements in depressive symptoms and self-efficacy, supporting the psychological effectiveness of both interventions. However, the beneficial long-term effects of rehabilitation on work ability and pain-related DSL among the IG support implementation of combined pain competence and depression prevention training | Cronbach’s α = 0.91 |

1Various outcome measures and their psychometric properties used for assessing cognition in CLBP.

2survey of pain attitudes (SOPA)

The pain catastrophising scale (PCS)

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Modified Roland Disability Questionnaire [RDQ]