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Effectiveness of a Multidisciplinary Chronic Pain Management Program in a Local Pain Center

chronic pain at the time of enrollment. As many of the patients had exhausted other available treatments for chronic pain, this may reflect the progression of chronicity of pain, in which a focal pain often gradually progresses into diffuse pain in part due to the development of central sensitization [36].

Functional tests

Following LLWPRP, participants showed a statistically significant improvement in physical functionality in all tests (summarized in Table 1), including functional reach (p=0.001), peg board test (p<0.001 for both left and right sides), sit-to-stand test (p<0.001) and six-min-walk (p=0.022) (Table 1).

Psychosocial outcome measurements

The results of psychosocial outcome measurements are summarized in Tables 2 to 4.

Following LLWPRP, participants showed significant reduction in depression (PHQ-9, p<0.001), anxiety (GAD-7, p<0.001), and risk of opioid misuse (SOAPP, p=0.005) (Table 2). Participants showed improvement in both CPAQ survey subcategories, willingness to engage in activities regardless of pain (p<0.001) and pain acceptance (p<0.001).

The S-TOPS questionnaire indicated significant improvement in multiple quality of life factors (Table 3). Specific improvements included patients' perceptions in 1) physical health (p=0.029), 2) pain problem (p=0.001), 3) social and recreational activity (p<0.001), 4) treatment satisfaction and expectations (p=0.001), 5) healthcare satisfaction (p=0.001), and 6) ability to work (p=0.024).

Participants showed slight but significant improvement in sleep quality as measured by the MOS Sleep Scale (pre 27.19±0.93 vs. post 29.94±0.97 (maximal score 53), p=0.001). Participants also showed improvement in Oswestry Disability Index (pre 23.78±0.69 vs. post 20.62±0.89 (maximal score 50), p<0.001) and Oswestry Neck Disability Score (pre 22.60±0.743 vs. post 19.88±1.01 (restricted to patients whose pain involved the neck and upper body, n=61; maximal score 53), p=0.002).

Correlations

Correlations between functional test and questionnaire results were evaluated before and after LLWPRP. Although there are slight differences between pre-LLWPRP and post-LLWPRP, the general trends are similar. We found that many parameters were significantly correlated with each other (Table 4). Multiple strong correlations were noted between functional assessments. Particularly sit-to-stand was significantly correlated with all other functional tests both before and after the LLWPRP. For many functional tests, increased physical functioning negatively correlated with the Oswestry Disability Index score both pre- and post-LLWPRP.

Depression (PHQ-9) was positively correlated with anxiety (GAD-7), and both were strongly correlated with multiple other measures. Specifically, levels of depression and anxiety were positively correlated with the risk of opioid misuse per SOAPP, worsened sleep quality (MOS), Oswestry Disability Index score, and how much pain gets in the way of participant's social activities (per S-TOPS sub-item), while negatively correlated with pain acceptance and willingness to engage in activities score per CPAQ and perception of physical health per S-TOPS sub-item. Interestingly, levels of depression and anxiety was associated with treatment satisfaction and expectation before, but not after, LLWPRP.

Risk of opioid misuse per SOAPP was found to have a strong positive correlation with depression, anxiety, perceived social and recreational activity (S-TOPS sub-item), and Oswestry Disability Index score.

Both chronic pain acceptance and willingness to engage in activities (CPAQ sub-items) were negatively associated with depression and anxiety and positively correlated with perception of physical health

Functional test	Pre-LLW (Mean ± SEM)	Post-LLW (Mean ± SEM)	*P* value (paired t-test)
Functional reach (inches)	5.53 ± 0.82	3.86 ± 0.61	0.001*
Peg board left (inches)	387.03 ± 17.26	463.18 ± 18.64	<0.001*
Peg board right (inches)	406.42 ± 18.071	510.39 ± 21.293	<0.001*
Sit-to-stand (number of repetitions)	6.95 ± 0.35	9.08 ± 0.39	<0.001*
Six-min-walk (feet)	859.98 ± 48.38	961.99 ± 51.24	0.022*
*Indicates significant difference when comparing pre-LLW and post-LLW scores			

Table 1: Pre- vs. post- physical functional tests.

Psychosocial outcome questionnaire	Pre-LLW (Mean ± SEM)	Post-LLW (Mean ± SEM)	*P* value (paired t-test)
PHQ-9 (0-27)[a]	12.48 ± 0.77	9.73 ± 0.66	<0.001*
GAD-7 (0-21)	9.01 ± 0.67	7.04 ± 0.58	<0.001*
SOAPP (0-20)	4.51 ± 0.37		

S-TOPS																		

listed several causes of their pain that could not be easily classi ed into one category. Due to that participants could be seen by other physicians,