Supplementary Material S3. Contextual clinical and medication-related indicators

Supplementary Material S3 provides the full contextual clinical and medication-related indicators reported in the REDOCVR implementation study. These analyses were interpreted as descriptive continuity indicators and were not considered primary effectiveness endpoints.

For REDOCVR_AC, the intervention subgroup included 105 participants. Clinical post-intervention outcomes were available for 77 participants and 5-month medication follow-up for 75 participants. These samples partially overlapped. The non-randomized reference cohort included 30 participants, with clinical and medication follow-up available for 25 participants. Medication outcomes were analysed at the medication-entry level and should be interpreted cautiously because prescribing patterns, medication classes and medication entries were heterogeneous.

Continuous clinical indicators, including WEMWBS-7, HADS-A, HADS-D, CSI and the exploratory EQ-5D-5L total score, were analysed using paired-samples t-tests. Effect sizes were calculated as paired-sample Cohen's d. Individual EQ-5D-5L ordinal dimensions were analysed using Wilcoxon signed-rank tests. Positive change indicates improvement for WEMWBS-7. Negative change indicates improvement for HADS-A, HADS-D, CSI and the EQ-5D-5L total exploratory score. For EQ-5D-5L dimensions, positive values indicate improvement because change was expressed as baseline minus post-intervention score.

Medication dose reduction was calculated as the percentage change in daily intake from baseline to follow-up for each medication entry and summarised by therapeutic category. Participants without baseline use of a given medication class were excluded from dose-reduction calculations for that class. Medication substitutions were treated as independent events. All opioid-containing medications, including tramadol-based combinations and strong opioids, were grouped into a single opioid category and interpreted with caution. No inferential between-group testing was performed because the reference cohort was non-randomized and medication entries were heterogeneous.

Supplementary Table S3a. Full clinical outcome indicators, completed REDOCVR research cohort

Outcome measure	n	Pre mean ± SD	Post mean ± SD	Mean change	95% CI	paired t-test p value	Cohen's d
WEMWBS-7, emotional well-being	103	16.23 ± 5.12	21.01 ± 5.42	4.78	3.68 to 5.88	< .001	0.85
HADS-A, anxiety	103	13.13 ± 3.74	11.07 ± 4.13	−2.06	−2.77 to −1.35	< .001	0.57
HADS-D, depression	103	11.52 ± 3.40	9.76 ± 4.15	−1.77	−2.38 to −1.15	< .001	0.56
CSI, central sensitisation	103	64.83 ± 14.18	60.86 ± 14.49	−3.96	−6.11 to −1.82	< .001	0.36
EQ-5D-5L total exploratory score	103	14.22 ± 3.10	13.36 ± 3.51	−0.86	−1.44 to −0.29	0.004	0.29

Note: Positive change indicates improvement for WEMWBS-7. Negative change indicates improvement for HADS-A, HADS-D, CSI and the EQ-5D-5L total exploratory score. Values are contextual pre-post indicators and should not be interpreted as causal effectiveness estimates.

Supplementary Table S3b. Category-based clinical changes

Outcome	Baseline higher-risk category, n (%)	Post higher-risk category, n (%)	Improved clinical class, n (%)	Any favourable score change, n (%)
WEMWBS-7 low well-being	63 (61.2)	31 (30.1)	48 (46.6)	81 (78.6)
HADS-A probable/case anxiety	95 (92.2)	84 (81.6)	29 (28.2)	69 (67.0)
HADS-D probable/case depression	91 (88.3)	74 (71.8)	38 (36.9)	65 (63.1)
CSI severe/extreme	88 (85.4)	79 (76.7)	38 (36.9)	59 (57.3)

Note: Favourable score change indicates improvement in raw score regardless of category crossing. Clinical class improvement indicates movement to a more favourable predefined category. Percentages are based on 103 participants with completed post-intervention assessment.

Supplementary Table S3c. EQ-5D-5L dimension-level changes

EQ-5D-5L dimension	Mean change ± SD	95% CI	Wilcoxon p value	Favourable change, n (%)
Mobility	0.11 ± 1.01	−0.09 to 0.30	0.248	35 (34.0)
Self-care	0.08 ± 0.94	−0.11 to 0.26	0.538	30 (29.1)
Usual activities	0.20 ± 0.95	0.02 to 0.39	0.036	39 (37.9)
Pain/discomfort	0.16 ± 0.80	0.00 to 0.31	0.053	28 (27.2)
Anxiety/depression	0.32 ± 1.17	0.09 to 0.55	0.012	48 (46.6)

Note: Positive values indicate improvement. Favourable change was defined as a reduction of at least one level in the EQ-5D-5L dimension from baseline to post-intervention.

Supplementary Table S3d. Medication-level dose reduction by class

Medication class	Intervention 2 months, mean ± SD	Intervention 5 months, mean ± SD	Reference 2 months, mean ± SD	Reference 5 months, mean ± SD

Analgesics	39.61 ± 43.31	44.71 ± 42.85	21.56 ± 38.98	13.72 ± 48.67
Antidepressants	11.85 ± 45.09	17.33 ± 49.69	7.50 ± 24.47	0.00 ± 42.92
Benzodiazepines	30.26 ± 41.56	47.31 ± 45.93	27.33 ± 58.49	15.80 ± 84.03
Muscle relaxants	38.18 ± 43.71	44.84 ± 48.35	No cases	No cases
Neuropathic pain agents	22.98 ± 39.25	27.52 ± 41.17	10.41 ± 68.39	17.71 ± 62.75
NSAIDs	27.27 ± 37.03	29.76 ± 37.78	23.34 ± 55.76	−30.67 ± 145.77
Opioids	34.94 ± 42.84	30.77 ± 53.35	−3.12 ± 52.08	−1.04 ± 84.87
Others	36.11 ± 48.59	44.44 ± 52.70	12.50 ± 25.00	25.00 ± 50.00

Note: Values represent percentage dose reduction calculated at the medication-entry level. Each medication was treated as an independent observational unit, with reduction computed relative to its own baseline dose. Negative values indicate initiation or net dose increase. Medication substitutions were treated as independent events. The reference cohort was non-randomized and is shown only as a contextual comparator.