

Supplemental File

Table 1: Definition of radicular low back pain

ICD-10 code	Description
G54.4	Lumbosacral root disorders, not elsewhere classified
M54.16	Intervertebral disc disorders with radiculopathy, lumbar region
M54.17	Radiculopathy, lumbosacral region
M54.18	Radiculopathy, sacral and sacrococcygeal region
M54.3	Sciatica
M54.4	Lumbago with sciatica

Abbreviations: International Classification of Diseases, 10th Edition (ICD-10)

Table 2: Current Procedural Terminology codes specifying chiropractic spinal manipulation

CPT code	Definition	CSM cohort	Usual medical care cohort
98940	1-2 regions of CSM	Included	Excluded
98941	3-4 regions of CSM	Included	Excluded
98942	5 regions of CSM	Included	Excluded

Abbreviations: chiropractic spinal manipulation (CSM), Current Procedural Terminology (CPT)

Table 3: Exclusion criteria for all patients

Code	Description
Serious pathology (ICD-10)	
C00-C96	Malignant neoplasm
G06	Intracranial and intraspinal abscess and granuloma
G83.4	Cauda equina syndrome
M46	Other inflammatory spondyloarthropathies (includes infections)
M48.4	Fatigue fracture of vertebra
M48.5	Collapsed vertebra, not elsewhere classified
Alternate conditions causing low back pain (ICD-10)	
G35	Multiple sclerosis
G54.1	Lumbosacral plexus disorders
G95	Other and unspecified diseases of spinal cord
G99.2	Myelopathy in diseases classified elsewhere
M41	Scoliosis
M43.16	Spondylolisthesis, lumbar region
M43.17	Spondylolisthesis, lumbosacral region
M48.0	Spinal stenosis
M50.0	Cervical disc disorder with myelopathy
M51.0	Thoracic, thoracolumbar, and lumbosacral intervertebral disc disorders with myelopathy
M96.1	Postlaminectomy syndrome, not elsewhere classified
Z98.1	Arthrodesis status
Contraindications to tramadol	
Z88.5 (ICD-10)	Allergy status to narcotic agent
CN602 (VANDF)	Monoamine oxidase inhibitors
O00-O9A (ICD-10)	Pregnancy, childbirth, and the puerperium
Prescriptions (VANDF)	
CN101	Opioid analgesics
Abbreviations: Central nervous system (CNS); Current Procedural Terminology (CPT); International Classification of Diseases, 10 th Edition (ICD-10); Veterans Health Administration National Drug File (VANDF)	

Table 4: Variables controlled for in propensity score matching

Variable/Code	Description
Demographics	Patient age, sex, race, and ethnicity
Diagnoses (ICD-10)	
F30-F39	Mood disorders (e.g., bipolar, depression)
J45	Asthma
K00-K95	Diseases of the digestive system
Prescription medications	
VANDF (any)	Prescription medication
CN602 (VANDF)	Tricyclic antidepressants
CN609 (VANDF)	Antidepressants, other (e.g., fluoxetine)
Social determinants of health (ICD-10)	
Z55	Problems related to education and literacy
Z59	Problems related to housing and economic circumstances
Procedures (ICD-10-PCS)	
1010381	Radiologic examination, spine, lumbosacral

Abbreviations: Current Procedural Terminology (CPT); International Classification of Diseases, 10th Edition (ICD-10); ICD-10 Procedure Coding System (ICD-10-PCS); Veterans Health Administration National Drug File (VANDF)

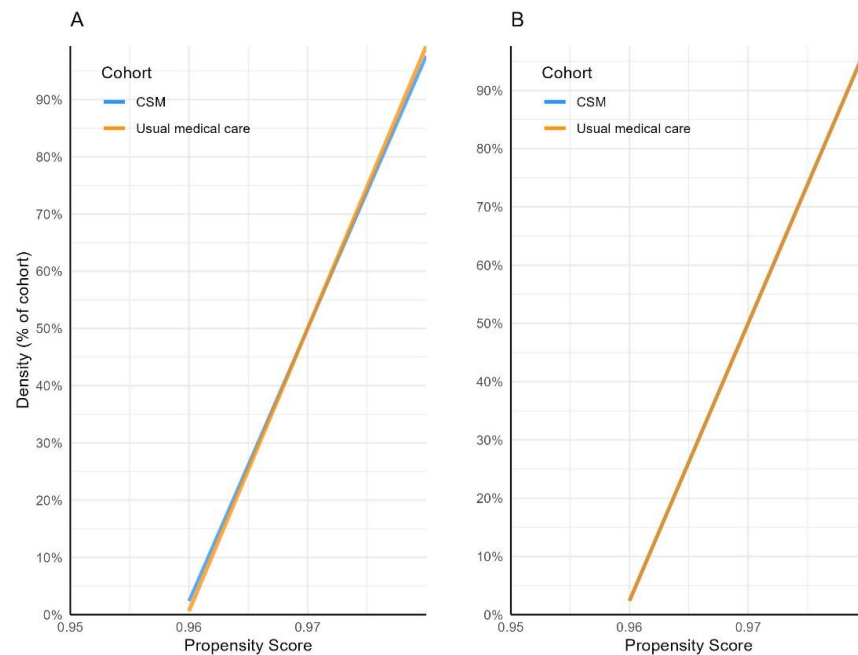


Figure 1: Propensity scores before and after matching. The blue line represents the cohort receiving chiropractic spinal manipulation (CSM) while the orange line represents the cohort receiving usual medical care. After matching, the propensity score densities overlap and only single line is visible, indicating that the cohorts are satisfactorily matched.