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EFFECTIVENESS OF SENSORIMOTOR TRAINING IN TEXT NECK SYNDROME: A SYSTEMATIC REVIEW

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ABSTRACT

Background: Text neck syndrome associated with prolonged smartphone and digital device use leads to neck pain, altered cervical proprioception, restricted range of motion, balance impairment, and functional disability. Sensorimotor training has emerged as a focused rehabilitation strategy to address these deficits. This systematic review assessed the effectiveness of sensorimotor training in individuals with text neck syndrome.

Methods: Randomized controlled trials published between 2018 and 2025 were identified through PubMed, Scopus, and Web of Science. Studies involving adults with text neck syndrome, forward head posture, or device-related non-specific neck pain were included. Sensorimotor training interventions were compared with conventional physiotherapy or general exercise programs. Outcomes included pain, cervical joint position sense, range of motion, balance, posture, and functional disability.

Results: Nine randomized controlled trials involving 419 participants were included. Sensorimotor training demonstrated superior improvements in pain reduction, proprioception, cervical mobility, balance, posture, and functional disability compared to conventional therapy.

Conclusions: Moderate-quality evidence supports sensorimotor training as an effective adjunct to conventional physiotherapy in the management of text neck syndrome.

KEYWORDS: Cervical Proprioception; Forward Head Posture; Neck Pain; Sensorimotor Training; Smartphone Use, Text Neck Syndrome

INTRODUCTION

The extensive use of smartphones, tablets, and other handheld digital devices has markedly transformed communication, education, and occupational activities worldwide. Although these technologies enhance efficiency and connectivity, prolonged and repetitive use has been associated with emerging musculoskeletal disorders, particularly those affecting the cervical spine. One such condition is text neck syndrome, a device-related postural disorder characterized by neck pain, cervical stiffness, forward head posture, reduced cervical mobility, proprioceptive impairment, balance disturbances, and functional disability resulting from sustained neck flexion during digital device use1-3.

From a biomechanical perspective, the human head weighs approximately 4.5–5.5 kg in a neutral upright position. However, cervical spine loading increases exponentially with progressive neck flexion, reaching forces exceeding 20–25 kg at flexion angles of 45–60 degrees4. Prolonged exposure to these abnormal mechanical load's places excessive strain on cervical muscles, intervertebral discs, ligaments, and facet joints, leading to pain sensitization, altered neuromuscular activation, and postural imbalance5. Forward head posture, a defining feature of text neck syndrome, has been associated with reduced cervical lordosis, scapular dyskinesia, thoracic kyphosis, and increased cervical muscle fatigue, further contributing to symptom progression6,7.

Epidemiological studies have reported a rising prevalence of neck pain and postural disorders among adolescents, university students, and working adults, corresponding with increased screen time and smartphone dependence8-10. Text neck syndrome has emerged as a significant public health concern due to its negative impact on quality of life, academic and work performance, and healthcare utilization11,12. Conventional management strategies, including stretching, general strengthening exercises, electrotherapy, analgesics, and ergonomic advice, often provide short-term symptom relief but may fail to address the underlying sensorimotor and proprioceptive impairments that contribute to symptom persistence and recurrence13.

Sensorimotor control refers to the integration of proprioceptive, visual, and vestibular inputs with motor output to generate coordinated and efficient movement. The cervical spine plays a crucial role in sensorimotor regulation due to the high density of muscle spindles in deep cervical muscles and their close anatomical connections with the vestibular and visual systems14. Evidence suggests that individuals with forward head posture and chronic neck pain demonstrate impaired cervical joint position sense, delayed muscle activation, reduced deep cervical flexor endurance, and altered neuromuscular control, leading to compromised postural stability and functional performance15-17.

Sensorimotor training encompasses rehabilitation strategies such as neck stabilization exercises, proprioceptive training, postural re-education, balance and coordination tasks, proprioceptive neuromuscular facilitation, and eye–head coordination exercises. Recent randomized controlled trials have demonstrated that sensorimotor-based interventions may improve pain intensity, cervical proprioception, range of motion, posture, balance, and functional disability in individuals with text neck syndrome and related neck pain conditions18-21. Technology-assisted approaches, including virtual reality and smartphone-based applications, have also shown promising results in enhancing adherence and clinical outcomes22.
Despite increasing research interest, considerable heterogeneity exists in study populations, intervention protocols, outcome measures, and follow-up durations. Moreover, many studies focus on non-specific neck pain without explicitly defining text neck syndrome, limiting the applicability of findings to this growing population. To date, no comprehensive systematic review has specifically synthesized evidence on the effectiveness of sensorimotor training across multiple clinical outcomes in individuals with text neck syndrome.
Therefore, this systematic review aimed to critically appraise and synthesize evidence from randomized controlled trials evaluating the effectiveness of sensorimotor training on pain, cervical proprioception, range of motion, balance, and functional disability in individuals with text neck syndrome.

METHODS

Study design and registration

This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines. The review protocol was prospectively registered in the International Prospective Register of Systematic Reviews (PROSPERO) (Registration ID: 1270363).

Data sources and search strategy

A comprehensive electronic literature search was performed using PubMed/MEDLINE, Scopus, and Web of Science databases. The search included studies published between January 2018 and December 2025. Additional records were identified through manual searching of reference lists of relevant articles and Google Scholar.
The search strategy was developed using the Population, Intervention, Comparator, and Outcome (PICO) framework. Keywords and Medical Subject Headings (MeSH) related to text neck syndrome, forward head posture, sensorimotor training, proprioceptive training, neuromuscular training, pain, cervical joint position sense, range of motion, balance, and disability were combined using Boolean operators “AND” and “OR.” Searches were limited to human studies published in the English language. Only randomized controlled trials were included.

Table 1. Search strategy and study identification

Database	Key search terms*	Filters	Records (n)
PubMed/MEDLINE	Text neck syndrome OR smartphone neck OR forward head posture AND sensorimotor OR proprioceptive OR neuromuscular training AND pain OR joint position sense OR range of motion OR balance OR disability	Humans; English; RCTs; 2015–2025	123
Scopus	Text neck syndrome OR smartphone neck OR forward head posture AND sensorimotor OR proprioceptive OR neuromuscular training	English; RCTs; 2015–2025	96
Web of Science	Text neck syndrome OR smartphone neck AND sensorimotor OR proprioceptive training AND pain OR ROM OR balance OR disability	English; human studies; RCTs; 2015–2025	102
Other sources	Manual reference list and Google Scholar search	English; RCTs; 2015–2025	18
Total	—	—	338

Eligibility criteria

Inclusion criteria

Randomized controlled trials were included if they involved male or female participants aged 18 years or older who used smartphones, tablets, or laptops for at least three to four hours per day for a minimum duration of six months. Studies were required to include participants diagnosed with text neck syndrome, forward head posture, or device-related non-specific neck pain. Trials evaluating sensorimotor-based interventions targeting cervical proprioception, neuromuscular control, balance, postural stability, or eye–head coordination were eligible. Studies were required to report at least one of the following outcomes: pain, cervical joint position sense, cervical range of motion, balance, posture, or functional disability.

Exclusion criteria

Studies were excluded if participants had neurological disorders, inflammatory or degenerative musculoskeletal conditions, cardiovascular disease, uncontrolled metabolic disorders, or a history of cervical trauma or surgery.

Observational studies, case reports, conference abstracts, narrative reviews, systematic reviews, animal studies, and non-English publications were excluded.

Study selection
All retrieved records were exported to reference management software, and duplicate entries were removed. Two reviewers independently screened titles and abstracts to identify potentially eligible studies. Full-text articles of relevant records were subsequently assessed for eligibility. Disagreements between reviewers were resolved through discussion and consensus. The study selection process was documented using a PRISMA flow diagram.

Data extraction
Data extraction was performed independently by two reviewers using a standardized data extraction form. Extracted information included author name, year of publication, study design, sample size, participant characteristics, diagnostic criteria, intervention details, comparator interventions, treatment duration, outcome measures, follow-up period, and key findings. Any discrepancies in data extraction were resolved through mutual agreement.

Outcome measures
Primary outcomes included pain intensity, assessed using the Visual Analog Scale or Numeric Pain Rating Scale, and functional disability, commonly measured using the Neck Disability Index. Secondary outcomes included cervical joint position sense, cervical range of motion, balance, posture, proprioception, electromyographic activity, and quality of life.

Methodological quality assessment
The methodological quality of the included randomized controlled trials was assessed using the Physiotherapy Evidence Database (PEDro) scale. Studies scoring 6 or higher out of 10 were considered to have good methodological quality. Quality assessment was conducted independently by two reviewers.

Risk of bias assessment
Risk of bias was evaluated using the Cochrane Risk of Bias 2 (RoB 2) tool, which assesses bias across the following domains: randomization process, deviations from intended interventions, missing outcome data, outcome measurement, and selection of reported results. Each domain was rated as low risk, some concerns, or high risk of bias. Any disagreements were resolved by consensus.

Data synthesis
Due to heterogeneity in study populations, intervention protocols, outcome measures, and follow-up durations, quantitative meta-analysis was not feasible. Therefore, findings were synthesized narratively, with results summarized according to intervention type and reported outcomes.

RESULTS
Study selection
The study selection process is presented in the PRISMA flow diagram (Figure 1). A total of 338 records were identified through database searching and other sources. After removal of duplicates and screening, nine randomized controlled trials fulfilled the eligibility criteria and were included in the qualitative synthesis. No studies were included in the quantitative synthesis (meta-analysis).

Characteristics of included studies
The characteristics of the included studies are summarized in Table 2. The nine randomized controlled trials were published between 2018 and 2025 and included a total of 419 participants. Sample sizes ranged from 25 to 60 participants per study. Study populations consisted of individuals with text neck syndrome, non-specific neck pain, chronic neck pain, or smartphone users with forward head posture16-25.
Intervention durations ranged from immediate effects to 12 weeks, with most studies implementing training protocols lasting 6–8 weeks. Sensorimotor-based interventions included neck stabilization exercises18-25, proprioceptive neuromuscular facilitation19, virtual reality–based sensorimotor training22-23, respiratory exercises16, global postural re-education with mobile application support25, and postural taping24. Comparator groups received conventional physiotherapy, general exercises, manual therapy, or no intervention.
Primary outcomes assessed across studies included pain intensity, measured using the Visual Analog Scale or Numeric Pain Rating Scale, and functional disability, most commonly assessed using the Neck Disability Index. Secondary outcomes included cervical range of motion, joint position sense, posture, balance, electromyographic activity, and quality of life.

Effects of interventions
All included studies reported statistically significant improvements in at least one primary outcome favouring the sensorimotor-based intervention groups. Trials evaluating neck stabilization exercises demonstrated greater reductions in pain intensity and improvements in forward head posture compared with dynamic or conventional exercises18,20. Virtual reality–based sensorimotor training, either alone or combined with conventional rehabilitation or manual therapy, resulted

in superior improvements in pain, cervical range of motion, disability, and cervical joint position sense compared with control interventions22,23.
Proprioceptive neuromuscular facilitation training was associated with significant improvements in pain intensity and cervical range of motion in individuals with text neck syndrome19. Studies comparing different exercise approaches, such as McKenzie exercises and cranio-cervical flexion exercises, reported improvements in pain and disability in both groups, with greater gains in deep neck flexor endurance observed in the cranio-cervical flexion exercise group21.
Adjunctive interventions, including shoulder taping and respiratory exercises, demonstrated beneficial short-term effects on discomfort, muscle activity, pain, and postural alignment when added to standard physiotherapy or daily activities16,24. The use of a smartphone application in conjunction with global postural re-education improved adherence and resulted in greater improvements in pain, posture, and quality of life compared with exercise alone25.

Table 2. Characteristics of included randomized controlled trials

Author (Year)	Population	Intervention	Comparator	Duration	Outcomes
Batool et al. (2024)18	NSP with FHP	Neck stabilization	Dynamic exercises	6 weeks	Pain, posture
Guo et al. (2024)22	Chronic neck pain	VR + conventional rehabilitation	Conventional rehabilitation	8 weeks	Pain, ROM, disability
Emedoli et al. (2024)23	Persistent NSP	VR sensorimotor + manual therapy	Manual therapy	4 weeks	Pain, JPS, disability
Kaya et al. (2024)19	Text neck syndrome	PNF training	Control	6 weeks	Pain, ROM
Chaiyawijit et al. (2024)21	Chronic neck pain	McKenzie vs CCFE	Comparative	8 weeks	Pain, disability
Areeudomwong et al. (2018)24	Smartphone users	Shoulder taping	No taping	Immediate	EMG, discomfort
Abadiyan et al. (2021)25	NSP	GPR + mobile app	GPR alone	12 weeks	Pain, posture, QoL
Qazi et al. (2025) 20	Text neck syndrome	Neck stabilization + CPT	CPT alone	6 weeks	Pain, disability
Rezaee et al. (2020)16	Smartphone users with FHP	Respiratory exercises + PT	PT alone	8 weeks	Pain, posture

Quality assessment
The methodological quality of the included studies was assessed using the Physiotherapy Evidence Database (PEDro) scale. Studies scoring less than 5 out of 10 were considered to be of low methodological quality. In addition, the Cochrane Risk of Bias 2 (RoB 2) tool was used to evaluate the risk of bias across included trials. The RoB 2 tool assesses bias across predefined domains and categorizes overall risk as “low risk,” “some concerns,” or “high risk” based on standardized domain-level judgments. Two reviewers independently performed the methodological quality and risk of bias assessments. Any disagreements were resolved through discussion to achieve consensus.

RESULTS

Study selection
Study selection was performed in accordance with the PRISMA guidelines and is illustrated in Figure 1. A total of 338 records were identified from electronic databases and other sources, including PubMed/MEDLINE (n = 123), Scopus (n = 96), Web of Science (n = 102), and additional sources (n = 18). After removal of duplicates, 198 records remained. Following title and abstract screening, 119 records were reviewed. Full-text assessment was conducted for 41 articles, of which 24 were excluded due to being review articles, non-interventional studies, pediatric studies, or insufficient methodological information. Finally, nine randomized controlled trials were included in the qualitative synthesis. No study met the criteria for quantitative synthesis (meta-analysis).

Methodological quality of included studies
Methodological quality was assessed using the PEDro scale (scores 0–10). Overall, study quality ranged from fair to excellent. Five studies (Batool et al., Emedoli et al., Kaya et al., Abadiyan et al., and Rezaee et al.) scored 6/10, indicating good methodological quality. Three studies (Guo et al., Chaiyawijit et al., and Qazi et al.) scored 8/10, reflecting excellent quality. One study (Areeudomwong et al.) scored 4/10 and was classified as fair quality. Most studies reported appropriate randomization, baseline comparability, between-group statistical analyses, and adequate follow-up. Blinding of participants and therapists was generally not feasible due to the nature of exercise-based interventions.

Risk of bias assessment

Risk of bias was assessed using the Cochrane Risk of Bias 2 (RoB 2) tool across the following domains:

1.Bias arising from the randomization process;
2.Bias due to deviations from intended interventions;
3.Bias due to missing outcome data;
4.Bias in measurement of outcomes; and
5.Bias in selection of reported result.

Overall, most studies demonstrated low to some concerns of risk of bias, consistent with the PEDro ratings. Lack of blinding was the most common source of potential bias. No study was judged to have a high overall risk of bias.

Figure 1. PRISMA 2020 Flow Diagram

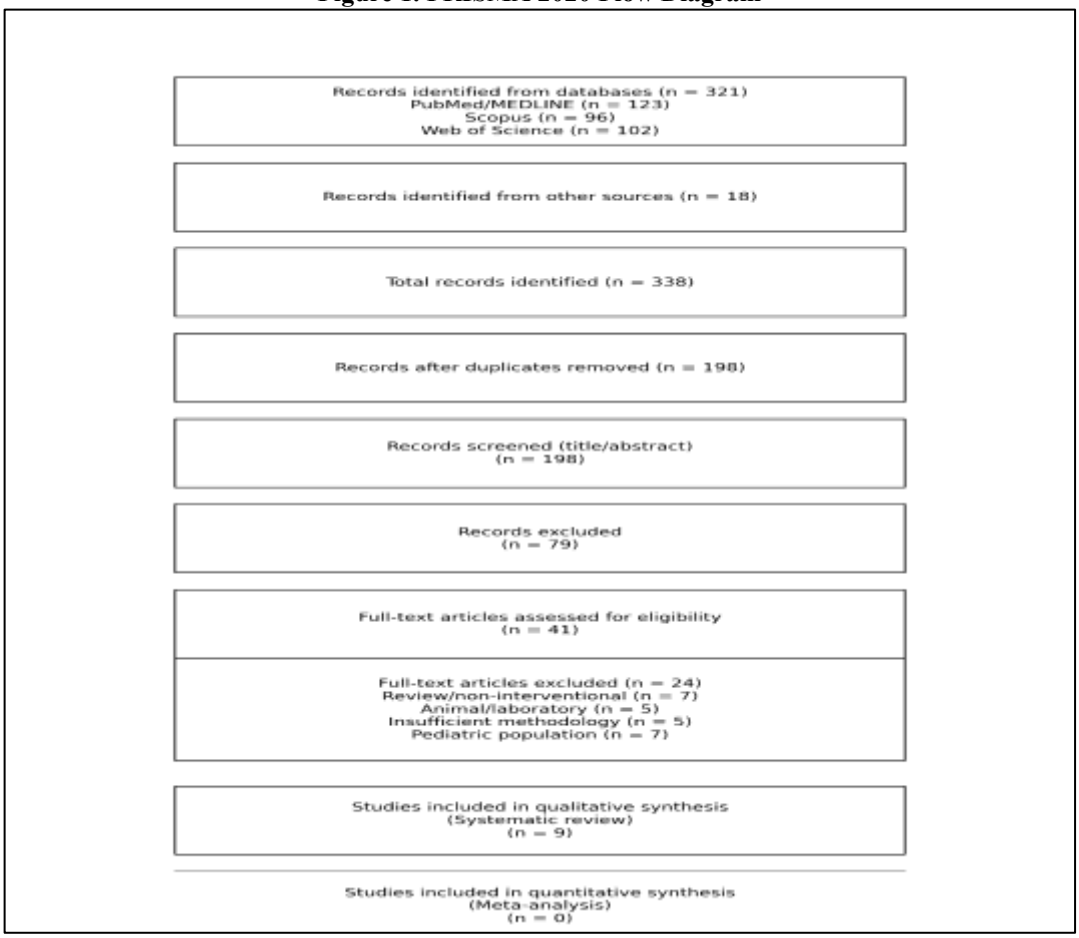

Figure 1. PRISMA 2020 flow diagram illustrating the study selection process for the systematic review on Effectiveness of Sensorimotor Training in Text Neck Syndrome.

Outcome Measures

The included randomized controlled trials assessed a range of outcome measures related to pain intensity, postural alignment, functional disability, and sensorimotor performance in individuals with text neck syndrome or device-related neck discomfort. Pain intensity was the most frequently evaluated outcome and was commonly measured using the Visual Analog Scale (VAS) or the Numeric Pain Rating Scale (NPRS). Functional disability was primarily assessed using the Neck Disability Index (NDI), allowing comparison of functional outcomes across studies.

Postural assessment, particularly for forward head posture, was conducted in several studies using craniovertebral angle measurements or photographic posture analysis. Cervical range of motion (ROM) was commonly evaluated using goniometers or inclinometers. In studies incorporating sensorimotor or virtual reality–based interventions, additional outcomes such as cervical joint position sense and balance were also assessed16,20,21,24,25

Table no. 3 Methodological quality of included studies assessed using the PEDro scale

Study (Year)	Random allocation	Concealed allocation	Baseline similarity	Subject blinding	Therapist blinding	Assessor blinding	Adequate follow-up	Intention-to-treat analysis	Between-group comparison	Point estimates & variability	PEDro score (/10)	Quality

Batool et al. (2024)18	Yes	No	Yes	No	No	Yes	Yes	No	Yes	Yes	6	Good
Guo et al. (2024)22	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	8	Excel lent
Emedoli et al. (2024)23	Yes	No	Yes	No	No	Yes	Yes	No	Yes	Yes	6	Good
Kaya et al. (2024)19	Yes	No	Yes	No	No	Yes	Yes	No	Yes	Yes	6	Good
Chaiyawij it et al. (2024)21	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	8	Excel lent
Areeudom wong et al. (2018)24	No	No	Yes	No	No	No	Yes	No	Yes	Yes	4	Fair
Abadiyan et al. (2021)25	Yes	No	Yes	No	No	Yes	Yes	No	Yes	Yes	6	Good
Qazi et al. (2025)20	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	8	Excel lent
Rezaee et al. (2020)16	Yes	No	Yes	No	No	Yes	Yes	No	Yes	Yes	6	Good

In This review covered all 2018–2025 randomized controlled trials (RCTs) on neck discomfort, text neck syndrome, and smartphone-related musculoskeletal disorders. The PEDro scale rated these studies as fair to excellent for methodology. The majority of studies, including Batool, Emedoli, Kaya, Abadiyan, and Rezaee, scored good (6/10). Three studies Guo, Chaiyawijit, and Qazi scored 8/10. Fair (4/10) for Areeudomwong et al. (2018). Subject and therapist blinding, a common issue in physiotherapy therapies, was lacking in all investigations, but assessor blinding, between-group comparisons, point measure reporting, and variability were addressed. Recently published neck pain and text neck rehabilitation research show increased methodological rigor, indicating advances in trial design and reporting

Table no. 4 Risk of bias assessment of included studies using the Cochrane Risk of Bias tool

Study (Year)	**Random sequence generation**	**Allocation concealment**	**Blinding of participants and personnel**	**Blinding of outcome assessment**	**Incomplete outcome data**	**Selective reporting**	**Overall risk of bias**
Batool et al. (2024)18	Low	Unclear	High	Low	Low	Low	Moderate
Guo et al. (2024)22	Low	Low	High	Low	Low	Low	Moderate
Emedoli et al. (2024)23	Low	Unclear	High	Low	Low	Low	Moderate
Kaya et al. (2024)19	Unclear	Unclear	High	Unclear	Low	Low	Moderate –high
Chaiyawijit et al. (2024)21	Low	Low	High	Low	Low	Low	Moderate
Areeudom wong et al. (2018)24	Unclear	Unclear	High	Unclear	Low	Low	Moderate –high
Abadiyan et al. (2021)25	Low	Unclear	High	Low	Low	Low	Moderate
Qazi et al. (2025)20	Low	Low	High	Low	Low	Low	Moderate
Rezaee et al. (2020)16	Low	Unclear	High	Unclear	Low	Low	Moderate

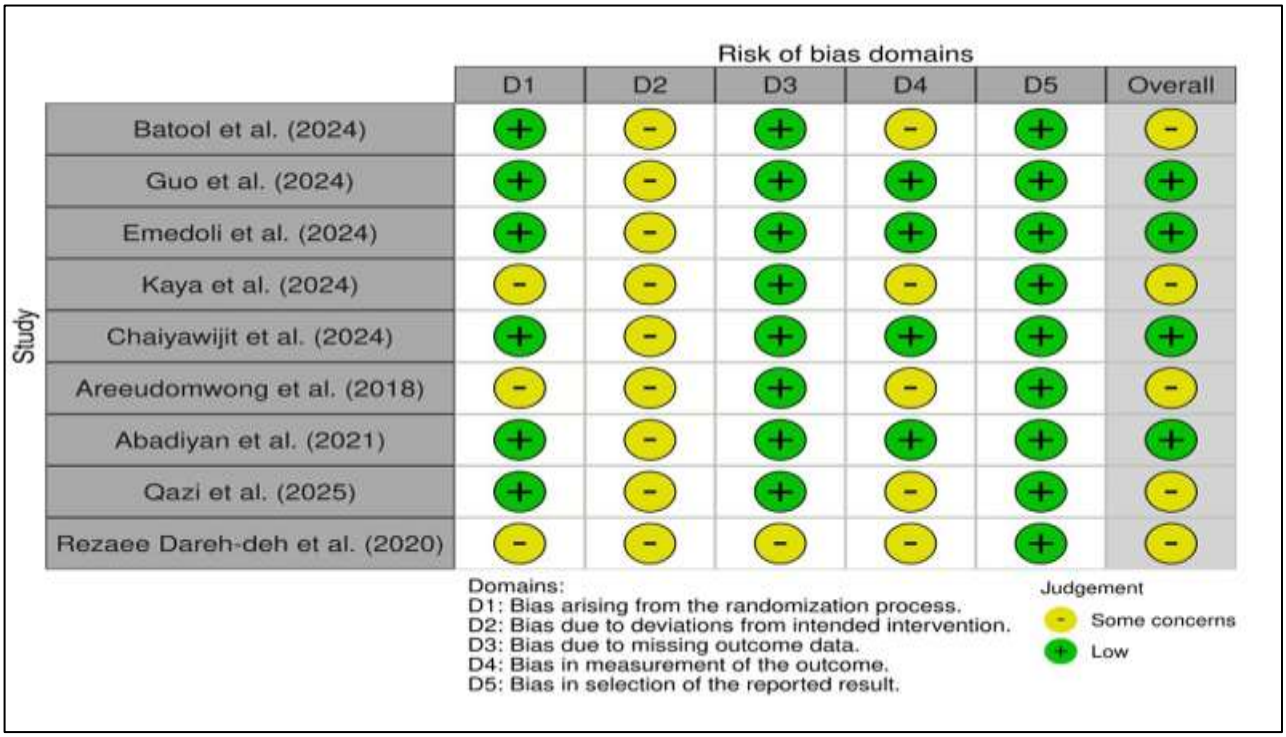

Figure no. 2 Quality Assessment / Risk of Bias

Overall, five studies were deemed to have some issues, while four were found to have a low risk of bias. There was no study that was deemed to have a significant risk of bias. Deviations from intended interventions (D2) were the most common methodological constraint across trials, followed by issues with randomization and outcome measurement. Standard risk of bias domains was used to evaluate the listed research' methodological quality. Overall, most studies showed a modest risk of bias, primarily as a result of blinding technique shortcomings. Adequate randomization techniques are indicated by the majority of studies' low risk in random sequence production. Allocation concealment, on the other hand, was often assessed as ambiguous, indicating inadequate reporting rather than evident methodological errors. The domains of incomplete outcome data and selective reporting were consistently rated as low risk across all included trials, indicating good participant retention and transparent outcome reporting. In contrast, blinding of outcome assessment was generally rated as low risk, though some studies had unclear reporting. All included trials showed a high risk of bias for blinding of participants and personnel, which is common in exercise-based and rehabilitation interventions where blinding is frequently not feasible.

Rezaee et al. (2020)16, Batool et al. (2024)18, Qazi et al. (2025)20, Chaiyawijit et al. (2024)21, Guo et al. (2024)22, Emedoli et al. (2024)23 and Abadiyan et al. (2021)25 were shown to have an overall moderate risk of bias. On the other hand, Kaya et al. (2024)19 and Areeudomwong et al. (2018)24 showed a moderate to high risk of bias, mainly because of outcome assessor blinding, imprecise randomization techniques, and allocation concealment. Overall, the results should be interpreted cautiously because of methodological shortcomings, especially those pertaining to blinding and reporting clarity, even if the included studies offer valuable evidence.

DISCUSSION

This systematic review encompassed nine randomized controlled trials published from 2018 to 2025, specifically Batool et al. (2024)18, Guo et al. (2024)22, Emedoli et al. (2024)23, Kaya et al. (2024)19, Chaiyawijit et al. (2024)21, Areeudomwong et al. (2018)24, Abadiyan et al. (2021)24, Rezaee et al. (2020)16, and Qazi et al. (2025)20, which assessed the efficacy of sensorimotor training (SMT) in individuals suffering from Text Neck Syndrome and associated neck pain conditions. The data indicated that SMT positively influenced many clinical outcomes, including pain, cervical joint position sense (JPS), range of motion (ROM), proprioception, balance, and impairment. Numerous studies indicated a substantial decrease in neck pain after spinal manipulative therapy (SMT) relative to conventional physiotherapy, general neck exercises, or no intervention, with enhanced pain alleviation noted in the SMT cohorts in research conducted by Batool et al. (2024)18, Guo et al. (2024)22, Areeudomwong et al. (2018)24, Abadiyan et al. (2021)25, and Qazi et al. (2025)20. Enhancements in cervical joint position perception were frequently observed, especially in trials focusing on proprioceptive and eye–head coordination exercises, with notable improvements in cervical proprioception shown by Rezaee et al. (2020)16, Guo et al. (2024)22, and Emedoli et al. (2024)23. Numerous research has shown substantial enhancements in cervical range of motion, with Kaya et al. (2024)19, Abadiyan et al. (2021)25, and Chaiyawijit et al. (2024)21 indicating superior advancements in cervical flexion, extension, and rotation within SMT groups relative to conventional exercise regimens. Kaya et al. (2024)19 further substantiated the advantages of SMT in enhancing proprioceptive function and postural control, revealing that neck coordination exercises yielded greater proprioceptive

accuracy and postural stability than strength training and massage therapy. Balance outcomes were positively affected by SMT, as evidenced by studies conducted by Rezaee et al. (2020)16 and Qazi et al. (2025)20, which showed significant enhancements in static and dynamic balance through progressive balance exercises, such as wobble board training and single-leg stance activities, resulting in improved joint repositioning accuracy and postural stability. Chaiyawijit et al. (2024)21 observed reductions in postural sway following neck coordination exercises; however, the extent of improvement was rather modest, possibly attributable to methodological constraints such as limited sample sizes and heterogeneity in outcome measurements. Moreover, sustained decreases in disability, typically evaluated via the Neck Disability Index (NDI), were noted in all studies, with Guo et al. (2024)22 and Emedoli et al. (2024)23 documenting enhanced functional outcomes when spinal manipulative therapy (SMT) was integrated with traditional physiotherapy, encompassing advancements in gait and functional performance. These findings collectively suggest that SMT provides a thorough and effective method for addressing the fundamental sensorimotor deficits linked to chronic neck pain and Text Neck Syndrome, resulting in enhanced pain relief, proprioception, balance, postural stability, and functional recovery16,20,21,24,25.

Limitations

The strength and generalizability of the results may be limited by the small number of randomized controlled trials that satisfied the inclusion criteria. Direct comparison between researches is limited by heterogeneity in diagnostic criteria, intervention methods, and outcome measures. Conclusions of long-term efficacy and recurrence prevention were limited by the majority of trials' brief follow-up periods.

CONCLUSION

The methodological quality of the included randomized controlled trials was evaluated using the PEDro scale, and the risk of bias was assessed with the Cochrane Risk of Bias tool. The majority of studies exhibited moderate to high methodological quality, as evidenced by PEDro scores reflecting strong internal validity. The bias risk evaluation indicated a low to moderate risk in critical domains. Consequently, the cumulative evidence endorsing the efficacy of sensorimotor training in enhancing pain, proprioception, and range of motion, balance, and impairment in patients with text neck syndrome can be regarded as moderate

Competing Interest

The authors declared that they have no conflict of interest.

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