

Study of the Effectiveness of Combined Treatment Methods on the Emotional State of Patients with Lumbosacral Dorsopathy

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Abstract: The study aims to substantiate the impact of traditional Korean medicine methods on patients' quality-of-life parameters using medical and sociological research data. The study involved 152 patients diagnosed with lumbosacral dorsopathy: 54 (35.5%) men and 98 (64.5%) women, aged 21-71 years, with an average age of 52 ± 8.4 years. Patients were randomized into four groups based on the applied pain management techniques: Group I (36 patients, 23.7%) received standard complex medication therapy (MT), Group II (32 patients, 21.1%) received MT combined with traditional Korean therapy (TKT) for chronic pain, Group III (45 patients, 29.6%) received standard drug therapy combined with transcranial magnetic stimulation (TMS), Group IV (39 patients, 25.7%) received TMT combined with TMS. The Oswestry Disability Index (ODI) questionnaire was used to assess quality of life (QoL) before and after therapy. Comparative analysis of ODI parameters before therapy showed high disability index scores across all four groups, exceeding 50%. After treatment: Group IV (TKT + TMS) showed an ODI of 0%, a statistically significant improvement compared to: Group I (MT only): ODI = 14%, Group II (MT + TKT): ODI = 6%, Group III (MT + TMS): ODI = 10%. Patients with chronic pain associated with lumbosacral dorsopathy exhibit low QoL indicators. The study highlights that combined treatment methods, particularly traditional Korean therapy, provide significant long-term benefits over standard drug therapy alone. This supports the increasing integration of traditional Korean medicine for managing chronic pain.

Keywords: Chronic low back pain, lumbosacral dorsopathy, quality of life, Oswestry questionnaire, traditional Korean medicine, transcranial magnetic stimulation.

Introduction: Chronic low back pain is one of the most widespread health conditions affecting the global population. According to modern clinical data, approximately 577 million people experience symptoms of chronic lumbosacral pain, which is primarily caused by degenerative changes in the structure of the spine and its supporting elements, including dorsopathy. This condition has emerged as one of the leading causes of disability and significantly reduces quality of life (QoL) and work capacity. It is important to note that patients with lumbosacral dorsopathy (LSD) inevitably experience a decline in QoL as the disease progresses. Several cross-sectional studies indicate an inverse relationship between lower back pain and QoL parameters. LSD is closely associated with an increase in pain intensity, leading to disability, poor treatment prognosis, low QoL, and severe physical limitations. Research shows that, even compared to patients with life-threatening diseases, those suffering from severe pain due to LSD demonstrate lower QoL scores. Due to these findings, improving QoL has become a key focus in medical and clinical research. In recent years, combined treatment approaches, incorporating medication therapy (MT) and physical therapies, have gained increasing popularity. Most studies have explored the effects of Western manual therapy, physiotherapy, and massage techniques. However, the long history of East Asian traditional medicine highlights its relevance and

potential effectiveness in improving the QoL of patients suffering from chronic LSD-related pain. One of the most promising approaches is Traditional Korean Therapy (TKT), which is based on manual therapy and acupuncture. This treatment method enables targeted stimulation of the peripheral nervous system, reducing pain by activating tactile and proprioceptive sensitivity and enhancing motor-sensory conduction. Given these aspects, studying the effects of combined Western and Eastern treatment methods on QoL improvement in LSD patients holds great scientific and clinical interest. Additionally, to develop and validate effective combined treatment models that improve the QoL of individuals suffering from chronic low back pain, it is essential to understand the key influencing factors. Thus, the present study focuses on evaluating QoL parameters in response to combined treatment methods for chronic pain associated with LSD.

Objective: The aim of this clinical study is to assess the emotional state of patients undergoing modern combined treatment methods for lumbosacral dorsopathy.

Materials and Methods: A comparative analysis of QoL was conducted at the **Medical Impuls Neurology Center**, a private clinic in **Tashkent, Uzbekistan**, from **December 2020 to September 2022**. The study included **152 patients** diagnosed with chronic pain associated with lumbosacral dorsopathy. **Patient Distribution: 54 men (35.5%) and 98 women (64.5%), Age range: 21–71 years (mean age: 52±8.4 years), Types of dorsopathy identified among patients: Lumbago Syndrome: 35 cases (23.0%), Vertebrogenic Lumbalgia: 28 cases (18.4%), Discogenic Lumboischialgia: 24 cases (15.8%), Chronic Discogenic Radicular Syndrome: 20 cases (13.2%), Acute-Recurrent Discogenic Radicular Syndrome: 23 cases (15.1%), Discogenic Radiculopathy: 22 cases (14.5%).** Patients were divided into groups based on their treatment method: **Group I (36 patients, 23.7%)** – Received standard complex **medication therapy (MT)**, including NSAIDs, muscle relaxants, antidepressants, B-group vitamins, antiepileptic drugs, peripheral vasodilators, and anticholinesterase drugs. The medication dosage was determined strictly according to **Appendix 7 of Order No. 273 of the Ministry of Health of Uzbekistan (30.11.2021)**. **Group II (32 patients, 21.1%)** – Received **MT combined with traditional Korean therapy (TKT)**, following the latest recommendations from **Korean specialists**. **Group III (45 patients, 29.6%)** – Received **MT combined with transcranial magnetic stimulation (TMS)**, performed with a device emitting an **electromagnetic wave intensity of 1.5 Tesla and a penetration depth of 3.0 cm**. **Group IV (39 patients, 25.7%)** – Received **TKT combined with TMS**.

Tools and methods for analyzing quality of life parameters. To assess **quality of life (QoL)** parameters before and after therapy, patients were asked to complete the Oswestry Disability Index (ODI) questionnaire. This tool is commonly used to evaluate chronic and recurrent pain in the lumbosacral region. The questionnaire consists of 10 scales, including: Pain intensity, Self-care ability, Ability to lift heavy objects, Walking distance and ability, Sitting tolerance, Standing tolerance, Sleep quality, Sexual activity level, Social activity level, Mobility and movement ability. Each scale in the Oswestry questionnaire contains six response options, each assigned a numerical index (score). The total score is calculated using the formula:

ODI (%) = (Total score from all 10 questions) × 2

- **Minimum score (0%)** – Indicates a **favorable condition**
- **Maximum score (100%)** – Indicates a **severely impaired QoL**

Study results: an initial assessment of QoL parameters before the treatment program showed **high ODI values** across all patient groups.

- Group I (MT only): ODI = 64.0%
- Group II (MT + TKT): ODI = 66.0%
- Group III (MT + TMS): ODI = 64.0%

➤ Group IV (TKT + TMS): ODI = 66.0%

Statistical analysis showed no significant difference in ODI scores between patient groups before the start of treatment. (see **Table 1**).

Table 1. Assessment of ODI Index Levels Before Treatment Among Patient Groups Participating in the Study

Indicators	Categories	Groups			p
		Me	Q ₁ – Q ₃	n	
Question 1 (points)	MT	3	2 – 3	36	0,846
	TKT	3	2 – 3	32	
	TMS	3	2 – 3	45	
	TKT+TMS	3	2 – 3	39	
Question 2 (points)	MT	3	2 – 3	36	0,994
	TKT	3	2 – 3	32	
	TMS	3	2 – 3	45	
	TKT+TMS	3	2 – 3	39	
Question 3 (points)	MT	3	3 – 3	36	0,646
	TKT	4	2 – 4	32	
	TMS	3	3 – 3	45	
	TKT+TMS	3	2 – 3	39	
Question 4 (points)	MT	3	2 – 3	36	0,403
	TKT	4	3 – 4	32	
	TMS	3	3 – 3	45	
	TKT+TMS	4	3 – 4	39	
Question 5 (points)	MT	3	2 – 3	36	0,058
	TKT	3	2 – 3	32	
	TMS	3	2 – 2	45	
	TKT+TMS	3	2 – 2	39	
Question 6 (points)	MT	4	3 – 4	36	0,118
	TKT	4	3 – 4	32	
	TMS	4	3 – 4	45	
	TKT+TMS	4	3 – 4	39	
Question 7 (points))	MT	3	2 – 3	36	0,320
	TKT	3	2 – 3	32	
	TMS	3	2 – 2	45	
	TKT+TMS	3	2 – 2	39	
Question 8(points)	MT	4	2 – 3	36	0,638
	TKT	4	2 – 3	32	
	TMS	4	2 – 3	45	
	TKT+TMS	4	2 – 3	39	
Question 9 (points)	MT	3	2 – 3	36	0,300
	TKT	3	2 – 3	32	
	TMS	3	2 – 3	45	
	TKT+TMS	3	2 – 3	39	
Question 10 (points)	MT	3	3 – 3	36	0,697
	TKT	2	2 – 3	32	
	TMS	3	3 – 3	45	
	TKT+TMS	3	3 – 3	39	

* – Differences in indicators are statistically significant ($p < 0.05$), using the **Kruskal-Wallis statistical test**.

When assessing pain intensity, self-care ability, ability to lift heavy objects, walking distance, ability to sit, ability to stand, sleep duration, sexual activity, social functioning, and mobility before treatment, no statistically significant differences were found between treatment groups ($p = 0.846$, $p = 0.994$, $p = 0.646$, $p = 0.403$, $p = 0.058$, $p = 0.118$, $p = 0.320$, $p = 0.638$, $p = 0.300$, $p = 0.697$, respectively). However, after analyzing QoL data following the treatment program, a significant decrease in the ODI index was observed across patient groups. Pain intensity: No statistically significant difference between groups ($p = 0.100$).

- **Lowest score: Group IV (0 points)**
- **Group II & III: 1 point**
- **Group I (highest score): 2 points**
- A statistically significant difference was noted ($p = 0.031$) compared to pre-treatment chronic pain scores.
- ✓ **Self-care ability:** No statistically significant difference between groups after treatment ($p = 0.139$).
- **Lowest scores (0 points):** Groups II, III, IV
- **Highest score (1 point):** Group I
- A statistically significant difference ($p < 0.001$) was observed compared to pre-treatment results.
- ✓ **Ability to lift heavy objects:** A statistically significant difference ($p = 0.003$) was found between:
- **Groups II & IV: 0 (0-1) points**
- **Groups I & III: 1 (1-3) points**
- A statistically significant difference was also noted ($p = 0.042$) compared to pre-treatment results.
- ✓ **Walking distance and ability:** No statistically significant differences were found among groups ($p = 0.811$).
- The average response in all groups (I, II, III, IV) was 0 points, but this showed a statistically significant improvement ($p = 0.010$) compared to pre-treatment results.

When analyzing responses to the **sitting position** question after treatment, a **statistically significant difference** ($p = 0.029$) was observed between: **Group IV – 0 points, Groups I, II, and III – 1 (1-2) points**. However, regarding the **standing position**, no statistically significant difference was found among all study groups ($p = 0.115$). The **average response** across **Groups I, II, III, and IV** was **0 points**, which was **significantly lower** ($p = 0.006$) compared to pre-treatment values. Regarding the **self-assessed sleep quality** after treatment, no statistically significant differences were found among the groups ($p = 0.638$). The **average score** across **Groups I, II, III, and IV** was **0 points**, which was **significantly lower** ($p = 0.047$) compared to pre-treatment results. In assessing responses to the **sexual activity** question, **statistically significant differences** ($p = 0.029$) were observed after treatment. **Groups IV and II** had an **average score of 0 points**, **Groups I and III** had an **average score of 1 (1-3) points**, This was also **significantly different** ($p < 0.001$) compared to pre-treatment responses. When evaluating responses on **social activity** after treatment, no statistically significant differences were found between groups ($p = 0.247$). However, the **lowest score** was recorded in **Group IV (0 points)**. A **significant difference** was found **between pre-treatment and post-treatment results** ($p = 0.008$). Finally, in the **comparison of responses** to the **patient mobility** question, all groups showed **equal responses**, with an **average score of 0 points**. This was **statistically significantly lower** ($p = 0.013$) compared to pre-treatment responses.

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