

Patient Satisfaction in Chronic Low Back Pain: A Comparison Between Pharmacological Treatment, Physiotherapy and Neural Therapy

Kronik Bel Ağrısında Hasta Memnuniyeti: Farmakolojik Tedavi, Fizik Tedavi ve Nöral Terapi Karşılaştırması

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ABSTRACT Objective: The aim of this study is 1- to compare both the patient satisfaction and pain relief between patients who received pharmacological treatment and non-pharmacological treatment, also between patients who received physiotherapy and neural therapy in chronic low back pain, 2-to evaluate which demographic factors are associated with patient satisfaction mostly. **Material and Methods:** A total of 109 patients with chronic low back pain was enrolled to this study and divided into two groups: pharmacological treatment (n=49) as non-steroid antiinflammatory and myorelaxant drugs and non-pharmacological treatment (n=60) (25 patients who had only physiotherapy and 35 patients who had only neural therapy). Demographic characteristics and patient satisfaction variables (with 5 questions) was examined by a single blind physician with phone interview. **Results:** There was no relation between age, gender, having any chronic disease, working status, educational status and patient satisfaction in all patients. All patient satisfaction variables ($p<0.001$) were significantly better in patients who received non-pharmacological treatment than patients who received only pharmacological treatment. When patients who received only non-pharmacological treatment were evaluated; percentage of the pain relief ($p<0.001$) willingness to try this treatment again ($p=0.001$) and patient satisfaction score ($p<0.001$) were significantly higher in neural therapy group than physiotherapy group. **Conclusion:** Both physiotherapy and neural therapy have higher patient satisfaction than pharmacological treatment in chronic low back pain, furthermore the pain relief was significantly better in both physiotherapy and neural therapy methods. However the group with the most pain relief and patient satisfaction was found to be neural therapy group in our study. Considering the effect of neural therapy on pain, patient satisfaction, it seems to be a good alternative to physiotherapy.

Keywords: Neural therapy; patient satisfaction; physiotherapy

ÖZET Amaç: Bu çalışmanın amacı, 1- hem farmakolojik tedavi ve non-farmakolojik tedavi alan, ayrıca non-farmakolojik tedavi olarak fizik tedavi ve nöral terapi alan kronik bel ağrılı hastaların hasta memnuniyeti ve ağrı değişimi düzeylerini kıyaslamak, 2- hem de hangi demografik faktörlerin hasta memnuniyeti ile daha ilişkili olduğunu incelemektir. **Gereç ve Yöntemler:** Bu çalışmaya kronik bel ağrısı olan toplam 109 hasta kabul edilmiştir. Hastalar 2 gruba ayrılmıştır: farmakolojik tedavi grubunu steroid olmayan antiinflamatuar ve kas gevşetici ilaç tedavisi alan 49 hasta, farmakolojik olmayan tedavi grubunu da 60 hasta oluşturmuştur (fizik tedavi uygulanan 25 hasta ve nöral terapi uygulanan 35 hasta). Hastaların demografik verileri, hasta tamrin memnuniyeti (5 soru ile) hastaların hangi tedavi yöntemi aldığı bilmenen bir klinisyen tarafından telefon görüşmesi ile kaydedilmiştir. **Bülgular** Yaş, cinsiyet, kronik hastalık varlığı, çalışma durumu, eğitim durumu ve hasta memnuniyeti arasında bir ilişki saptanmamıştır. Farmakolojik olmayan tedavi alan hastaların, tüm hasta memnuniyeti verileri farmakolojik tedavi alan hastalara göre istatistiksel olarak belirgin olarak daha iyi bulunmuştur ($p<0.001$). Farmakolojik olmayan tedavi alan hastalar incelendiğinde; ağrı azalma yüzdesi ($p<0.001$), bu tedaviyi yeniden deneme isteği ($p<0.001$) ve hasta memnuniyet skoru ($p=0.001$) nöral tedavi uygulanan hastalarda daha yüksek saptanmıştır. **Sonuç** Kronik bel ağrılı hastalarla hem fizik tedavi, hem de nöral tedavi yöntemi, farmakolojik tedavide göre belirgin fazla bir hasta memnuniyeti sağlamaktadır, ayrıca ağrı azalması hem nöral terapi hem de fizik tedavi grubunda belirgin düzeyde fazla saptanmıştır. Bu çalışmada, en fazla hasta memnuniyeti ve ağrı azalma sağlayan yöntem nöral terapi olarak bulunmuştur. Nöral terapinin ağrı ve hasta memnuniyeti üzerine etkisi göz önüne alındığında, fizik tedavi yöntemlerine iyi bir alternatif oluşturabilir.

Anahtar Kelimeler: Nöral terapi; hasta memnuniyeti; fizik tedavi

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Chronic low back pain effects many people in different ages and negatively effects the quality of life. Also it causes many difficulties in walking, sitting and standing.¹ There are many choices in the treatment of low back pain. Paracetamol, oral-topical non-steroid antiinflammatory drugs (NSAID) and oral-topical myorelaxant drugs are primarily used as pharmacological treatment.²

In recent years, many patients seek different non-pharmacological treatment modalities due to various side effects of drugs. In the changing and developing world, non-pharmacological methods are developing. Neural therapy which has been used for a long time especially in Germany, is one of them.³ Neural therapy is a treatment method which is applied with local anesthetics by using the own neurovegetative system of patient in many conditions such as pain, functional disorders.⁴ It is a very effective treatment method especially in pain management. With the correct detection of the disturbance area, it provides not only significant relief of the pain, but also provides a completely well-being. Egli et al. evaluated the long-term effects (one year) of neural therapy in patients with chronic pain, reported that analgesic intake for pain was reduced.⁵ In addition, physiotherapy, another non-pharmacological treatment method, is a valuable method for pain relief and is routinely used in physical therapy and rehabilitation practices. The physiotherapy modalities which are used for low back pain such as transcutaneous electrical nerve stimulation, hotpack, therapeutical ultrasound, short wave, traction... reduce inflammation, relieve pain, stiffness and provide symptomatic relief.⁶⁻⁸ Worldwide patient satisfaction is high with physiotherapy applications.^{9,10} However, only a few studies were found which reported high patient satisfaction in neural therapy.¹¹ We could not find any study which compares patient satisfaction between pharmacological therapy, neural therapy and physiotherapy.

The aim of this study is 1- to compare the patient satisfaction and pain relief firstly between patients who received pharmacological treatment and non-pharmacological treatment, secondly between patients who received physiotherapy and neural therapy in chronic low back pain, 2- to evaluate which

demographic factors are associated with patient satisfaction mostly.

MATERIAL AND METHODS

The patients with chronic low back pain who received pharmacological treatment or physiotherapy or neural therapy in physical medicine and rehabilitation outpatient clinic between October and December 2020, were reviewed from patient files and a cross-sectional survey was undertaken by telephone interviews with these patients 30-45 days after the end of the treatment.

Inclusion criteria were having chronic low back pain with or without leg pain radiation for at least 3 months and receiving medical treatment including only non-steroid antiinflammatory and myorelaxant drugs or physiotherapy modalities (hotpack, therapeutical ultrasound and transcutaneous electrical nerve stimulation as approximately 10 sessions, one hour/a day) or neural therapy (for once a week for 3-5 sessions, according to needs of each patients such as: local, segmental, sacroiliac joint, abdominal hopfer crown, 5M application, sternum and interference field injection). In neural therapy, the quaddel injections had been made with lidocain that was diluted with saline and used as 0.5% lidocain. Local quaddel injections had been made to painful points, segmental injections had been performed into the interspinous spaces between toracal 10 (T10) and sacral levels and 2 cm lateral to the spinous process level. Abdominal hopfer crown was performed around the umbilicus with 2 cm intervals. Also a quaddel injection was performed to the middle of the two breast lines for sternum injection. Patients with acute low back pain, extruded or sequestered disk herniation in magnetic resonance imaging (MRI), fracture or mass in direct radiography or MRI, neurological deficits, cognitive disorder, cancer, trauma, rheumatological diseases were excluded from this study. Also patients who received combination therapy (such as physio and neural therapy or physio and medical therapy together) were excluded.

All patients had been treated by the same physician. The telephone interview was made with a total of 109 patients who met both the inclusion and ex-

clusion criteria by another physician who was blind to treatment type. The telephone interview was made immediately 30-45 days after the end of the treatment. A detailed anamnesis was carried out on the demographic characteristics (age, gender, duration of pain, chronic diseases, working/education status, family type). Patient satisfaction variables (with 5 questions) were pain relief as percentages, recommendation to other patients and trying the treatment again with yes and no questions, patient satisfaction score with a Likert scale (0 to 4). The questions were:

1. Is there any decrease or increase in your low back pain? (yes/no)
2. If the answer to the first question was a decrease in pain; Could you say the rate of reduction in your pain as a percentage?
3. Would you try this treatment method again if your pain recurs? (yes/no)
4. Would you recommend this treatment method to other patients? (yes/no)
5. What is your satisfaction score with this treatment? (The patient indicated satisfaction with a number between 0 and 4) (0: not satisfied, 4: very satisfied)

The study was carried out with the approval of the Council of Ethics of the Faculty of Medicine of Eskişehir Osmangazi University with the decision no 22 dated 11/08/20 (E-25403353-050.99-92460). We followed the ethical guidance which recommends adherence to the 2008 version of the Declaration of Helsinki. Informed consent was received by the phone call.

STATISTICAL ANALYSIS

The distribution of continuous variables was analysed with Shapiro-Wilk test and each descriptive statistic was mean±standard deviation (SD) or median (25%-75%). Non-normally distributed variables were analysed using the Mann-Whitney U test. Normally distributed variables were analysed with independent samples t-test. The categorical variables (i.e., insulin and antidiabetics usage) were evaluated with Chi-square tests and also presented as numbers (n) and percentages (%). Spearman correlation analysis was used for relationship between variables. A p value

<0.05 was considered as statistical significant. All analyses were performed using the SPSS version 22.0 software (SPSS Inc., Chicago, IL, USA).

RESULTS

A total of 109 patients (71 females, 38 males) with the mean age of 47.9 ± 13.2 years were enrolled to this study. All patients were divided into two groups. The first group (n=49) consisted of patients who received only pharmacological treatment, the second group (n=60) consisted of patients who received non-pharmacological treatment. Demographic characteristics were similar in all patients, only the duration of pain was found higher in patients who received non-pharmacological treatment. Forty seven of 109 patients had any chronic disease such as type 2 diabetes mellitus, hypertension, cardiac disease or chronic obstructive pulmonary disease. All patient satisfaction variables ($p<0.001$) were significantly better in patients who received non-pharmacological treatment than patients who received only pharmacological treatment (Table 1).

The relation between patient satisfaction score and demographic characteristics of all patients were evaluated. In correlation analysis, there was no correlation between age and the patient satisfaction score in all patients ($p=0.108$, $r=0.155$). When the patient satisfaction score was evaluated in terms of gender; there was no significant difference ($p=0.282$) in females (n=71) and males (n=38). Also the patient satisfaction score was similar ($p=0.305$) in patients with (n=47) or without (n=62) chronic diseases. Furthermore, this score was similar in patients when they were evaluated in terms of working ($p=0.224$) and educational status ($p=0.393$).

Later, the patients who received non-pharmacological treatment were divided into two groups as the patients who received only physiotherapy (n=25) and the patients who received only neural therapy (n=35). The demographic characteristics were similar between groups, however percentage of the pain reduction ($p<0.001$), the rate of positive answer to “trying this treatment again” question ($p=0.001$) and the patient satisfaction score ($p<0.001$) were significantly higher in neural therapy group (Table 2).

TABLE 1: Comparison of demographic data and patient satisfaction variables between patients who had pharmacological and non-pharmacological treatment.

	Pharmacological treatment (n=49)	Non-pharmacological treatment (n=60)	p value
Age*	45.36±13.60	50.13±12.65	0.061
Gender (female/male) n (%)	29/20	42/18	0.238
Duration of pain (months)**	24 (7-120)	54 (24-120)	p<0.001
Marital status (single/married) n (%)	2/47	3/57	0.820
Working or not - n (%)	21/28	23/37	0.632
Educational status (lower than high school / high school and more) n (%)	34/15	46/14	0.392
Chronic disease (yes/no) n (%)	16/33	31/29	0.054
Pain relief (yes/no) n (%)	36/13	58/2	p<0.001
Percentage of reduction*	38.57±30.80	66.83±27.76	p<0.001
Recommendation to someone else (yes/no) n (%)	28/21	57/3	p<0.001
Trying the treatment again (yes/no) n (%)	24/25	53/7	p<0.001
Patient satisfaction score*	1.97±1.56	3.45±1.03	p<0.001

*mean±SD; **Median (25-75%)

TABLE 2: Comparison of demographic data and patient satisfaction variables between patients who had physiotherapy and neural therapy.

	Physiotherapy modalities (n=25)	Neural therapy (n=35)	p value
Age*	47.96±9.78	51.68±14.29	0.264
Gender (female/male) n (%)	16/9	26/9	0.391
Duration of pain**	120 (24-120)	24 (12-120)	0.052
Marital status (single/married) n (%)	1/24	2/33	0.764
Working or not - n (%)	10/15	13/22	0.822
Educational status (lower than high school / high school and more) n (%)	19/6	27/8	0.918
Chronic disease (yes/no) n (%)	10/15	21/14	0.126
Reduction of pain (yes/no) n (%)	23/2	35/0	0.169
Percentage of reduction*	45.2±26.47	82.28±15.91	p<0.001
Recommendation to someone else (yes/no) n (%)	22/3	35/0	0.067
Trying the treatment again (yes/no) n (%)	18/7	35/0	0.001
Patient satisfaction score*	2.76±1.30	3.94±0.23	p<0.001

*mean±SD; **Median (25-75%).

DISCUSSION

To the best of our knowledge, this is the first study investigating the patients with chronic low back pain are more satisfied with which treatment method: pharmacological treatment, physiotherapy or neural therapy. Our study results showed that there was no relation between age, gender, having any chronic disease, the working status, the educational status and the patient satisfaction in all patients. Furthermore patient satisfaction was low in patients who receive

only pharmacological treatment, while the patient satisfaction was high in patients who receive physiotherapy or neural therapy. Additionally, the most satisfied patient group was neural therapy group.

If a pharmacologic therapy was preferred in chronic low back pain, NSAIDs were reported as the first line therapy in American College of Physicians guidelines.¹⁰ There are many studies investigating the effects of NSAID and myorelaxant drugs on chronic low back pain, however the results of them are conflicting. Some studies reported that NSAIDs showed

more pain relief than placebo, on the other hand some studies reported no improvement in function.¹²⁻¹⁴ Myorelaxant drugs provide clinically short term pain relief, however the evidence is insufficient when compared with placebo in chronic low back pain.^{12,15} In our study, all the patient satisfaction variables and the change of pain were significantly worse in patients who received only medical treatment despite the disease duration being lower than the other group. The patients who receive only medical treatment were not satisfied with this treatment. Due to many side effects, these patients seek non-pharmacologic treatment methods.

American College of Physicians recommend firstly non-pharmacologic treatment modalities such as: exercise, acupuncture, physical therapy (low level laser), spinal manipulation, in chronic low back pain.¹² In line with this guideline, our results showed that the pain relief and patient satisfaction were quite better in patients who received non-pharmacological treatment. Neural therapy and physiotherapy were chosen as non-pharmacological treatments due to being the most applied therapies in our clinic. In worldwide, it is known that patient satisfaction is high with physiotherapy applications.⁹ An Australian study reported that the patient satisfaction with physiotherapy care was high.¹⁰ Also a review reported that patients were found highly satisfied with physiotherapy care in northern Europe, North America, the United Kingdom, and Ireland despite the existance of country-spesific differences.⁹ Similar to above studies, in our study, patient satisfaction and pain relief were quite higher in physiotherapy group than pharmacological treatment group. On the other hand, the group with the most pain relief and patient satisfaction was found as neural therapy group in our study. The study of Atalay et al. which has different methodology from our study, compared neural therapy and physiotherapy in chronic low back pain and reported that both therapy modalities are effective on pain, quality of life and physical function, however the improvements were reported better in neural therapy group.¹⁶ This study has different methodology from our study, but the results are in common with our study, neural therapy is effective on pain management. There are limited studies about the patient

satisfaction in neural therapy. Mermod et al. reported that patients who had neural therapy had a significantly higher treatment and care-related patient satisfaction than patients who had conventional therapy.¹¹ Also this study has different methodology from our study, however the result of that study showed high patient satisfaction in neural therapy, like our study.

Musculoskeletal disorders such as back pain cause an economic burden on worldwide healthcare systems and leads to the loss of work productivity.^{17,18} The management of chronic low back pain is different in neural therapy and physiotherapy. To apply neural therapy, a detailed anamnesis (all operations, past physical traumas, scars, diseases...) and also a detailed examination is needed. As a result, it takes longer time to consult the patient. These longer consultations of neural therapy increase the direct cost however causing fewer work incapacity due to fast response of neural therapy on pain, decreases this cost. Furthermore medicine cost is low, only local anestezic, saline and injector is needed.

One of the limitations of our study was that the physiotherapy consisted of only electrotherapy. The positive effects of stretching, strengthening, stabilization exercises in low back pain are reported in many studies.^{19,20} If exercise was added to electrotherapy, we believe the patient satisfaction and pain relief would be better. The other limitation was the lack of pre-treatment variables. There is need for further randomized controlled studies on the short and long term effects on the pain relief and patient satisfaction and cost effectiveness of neural therapy in chronic low back pain.

In conclusion, there was no association between the demographic characteristics and patient satisfaction. Both physiotherapy and neural therapy have higher patient satisfaction than pharmacological treatment, however the group with the most pain relief and patient satisfaction was found as neural therapy group in our study. Considering the effect of neural therapy on pain, patient satisfaction and economic costs, it seems to be a good alternative to physiotherapy.

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Conflict of Interest

No conflicts of interest between the authors and/or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

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