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The Awareness of Manual Therapy in Turkish Society: A Cross Sectional Survey Study and an Overview of Manual Therapy

Türk Toplumunda Manuel Terapi Farkındalığı: Kesitsel Bir Anket Çalışması ve Manuel Terapiye Genel Bir Bakış

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ABSTRACT Objective: To examine the information level in Turkish society on manual therapy and to identify necessary factors in establishing the awareness of manual therapy. **Material and Methods:** Patients with no structural abnormality and evaluated as functional locomotor system dysfunction were enrolled in the study among patients with musculoskeletal pain who admitted to tertiary outpatient clinics of our university hospital between May and June 2020. A self-administered survey was prepared. Age, gender and educational level information were collected. Patients' general knowledge level regarding manual therapy, their general attitude towards manual therapy and complementary medicine, their knowledge level about the indications-contraindications and effectiveness of manual therapy and their opinions in terms of who should be the prescribers and practitioners of manual therapy were evaluated and discussed in the light of available literature. **Results:** The survey was conducted on 104 participants. Of the participants, 45.4% stated that they never heard of manual therapy and only 16.3% stated that they did research and are knowledgeable on manual therapy. Of the participants, 81.7% stated that they believed traditional and complementary medicine methods could be effective and 46.4% of them stated they occasionally demanded manual therapy-like implementations from their relatives. Lower back pain (68.9%), neck pain (68.9%) and upper back pain (66%) are the most expressed indications by the participants. While 32% of the participants believed that cervical and lumbar disc hernias could be cured with manual therapy, 54.8% of the participants stated that manual therapy was as effective as other physical therapy methods. While 50% of the participants stated that physicians should be decisive about the compatibility of manual therapy, 53.5% stated that physiotherapists should apply manual therapy. **Conclusion:** Manual therapy is an unknown treatment method even among patients with a high education level. Despite this, patients believe that manual therapy can be effective and they may be in quest of manual therapy or similar implementations. The use of manual therapy for disc hernias seems to be an under-known and abusable issue in the society. Patients expect physicians to be decision maker and informative about in which disorders manual therapy can be applied and they prefer trained healthcare professionals to apply therapy.

Keywords: Manual therapy; manipulation; disc herniation; musculoskeletal pain; knowledge level

ÖZET Amaç: Türk toplumunda, manuel terapi hakkında bilgi düzeyinin ölçülmesi ve manuel terapi farkındalığını oluşturmak için gerekli faktörlerin belirlenmesi amaçlandı. **Gereç ve Yöntemler:** Mayıs-Haziran 2020 tarihlerinde üniversitemiz hastanesi polikliniklerine kas-iskelet sistemi ağrısı nedeniyle başvuran hastalar arasından, belirgin yapısal bozukluğu olmayan ve fonksiyonel kas-iskelet sistem bozukluğu tespit edilen hastalar çalışmaya alındı. Kendi kendine uygulanabilen bir anket hazırlandı. Yaş, cinsiyet ve eğitim düzeyi bilgileri toplandı. Hastaların manuel terapi hakkındaki genel bilgi düzeyleri, manuel terapi ve tamamlayıcı tıbba genel yaklaşımları, manuel terapinin endikasyon-kontrendikasyon ve etkinliği hakkındaki bilgi düzeyleri, manuel terapinin uygunluğuna kimin karar vermesi gerektiği ve manuel terapi uygulayıcılarının kimler olması gerektiği konularındaki görüşleri mevcut literatür bilgileri eşliğinde tartışılarak değerlendirildi. **Bulgular:** Anket, 104 katılımcıya uygulandı. Katılımcıların %45,4'ü manuel terapiyi hiç duymadıklarını ifade ederken, manuel terapiyi araştırdığını ve manuel terapi hakkında bilgi sahibi olduğunu ifade eden katılımcılar %16,3 oranındaydı. Katılımcıların %81,7'si geleneksel ve tamamlayıcı tıp yöntemlerinin etkili olabileceğine inandıklarını ve %46,4'ü zaman zaman çevrelerinden manuel terapi benzeri uygulamaları talep ettiklerini ifade ettiler. Bel ağrısı (%68,9), boyun ağrısı (%68,9) ve sırt ağrısı (%66) katılımcılar tarafından en çok ifade edilen endikasyonlardı. Katılımcıların %32'si servikal ve lomber disk hernilerinin manuel terapi ile tedavi edilebileceğini ifade ettiler. Manuel terapinin diğer fizik tedavi yöntemleri kadar etkili olduğunu belirten katılımcılar %54,8 oranındaydı. Katılımcıların %50'si manuel terapinin uygunluğu konusunda hekimlerin karar verici olması gerektiğini ifade ederken, %53,5'i manuel terapiyi fizyoterapistlerin uygulaması gerektiğini ifade ettiler. **Sonuç:** Manuel terapi yüksek eğitim düzeyine sahip hastalar arasında dahi yeteri kadar bilinmeyen bir tedavi yöntemidir. Buna rağmen hastalar manuel terapinin etkili olabileceğine inanmakta ve manuel terapi ya da benzeri uygulamaların arayışına girmektedir. Disk hernilerinde manuel terapinin kullanımı toplumda eksik bilinen ve suistimale açık bir konu olarak gözükmektedir. Hastalar hangi hastalıklarda manuel terapinin uygulanabileceği konusunda hekimlerin karar verici ve bilgilendirici olmalarını beklemekte ve uygulamaları eğitilmiş sağlık profesyonellerinin yapmalarını tercih etmektedir.

Anahtar Kelimeler: Manuel terapi; manipülasyon; disk hernisi; kas-iskelet sistemi ağrısı; bilgi düzeyi

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According to the definition of the International Federation of manual/musculoskeletal medicine, manual medicine (MM) is a medical discipline which includes extensive knowledge and skills used in the diagnosis, treatment and prevention of functional reversible disorders of the locomotor system.[1] Manual therapy is a form of treatment in which therapeutic properties, manipulative and advanced interventional techniques are applied in addition to conventional therapies for pain relief and other functional purposes.[1] Manual therapy is considered as a treatment method performed with pressure, stretching and resistance at various speeds on muscles, tendons, ligaments, joints and bones. In most societies, this treatment has been used traditionally, and is known by different names and definitions. Although the mechanisms of action of manual therapy are not clearly known, some of the hypotheses produced are; it is the reduction of muscle spasm by sudden stretching reflexes, the resolution of movement blocks arising from inappropriate placement patterns and the replacement of pain-related reflexes as a result of proprioceptive bombardment.[2,3] It has been shown in many studies that manual therapy is an effective treatment method and the side effect profile is reliable.[4-7] However, it is a known fact that various manual treatment methods that can have catastrophic consequences are applied by nonhealth professionals in many societies without a medical basis. It is also known that some healthcare providers use exaggerated statements in platforms including social media for the purpose of advertising, i.e., the assertion of manual therapy being a treatment method that can fully eliminate structural problems such as "cervical-lumbar disc hernia and spondylolisthesis". These findings suggest that there is a lack of information in society on topics including what manual therapy is, in which disorders it can be used, and who should be performing manual therapy. There is not a published scientific study on the societal knowledge on manual therapy in Turkey. Therefore, this research was conducted to examine the knowledge level in Turkish society regarding manual therapy which is a potential treatment method for musculoskeletal system pain and to identify necessary factors to inform society about manual therapy.

MATERIAL AND METHODS

STUDY DESIGN

Cross sectional design was used in the study. A convenience sampling method was selected. Patients were evaluated after their admission to the hospital, and the survey was applied shortly after to those who were eligible.

SETTING

Patients were recruited from patients with musculoskeletal pain who admitted to tertiary outpatient clinics of a university hospital between May and June 2020. All patients provided a written informed consent before they answer the survey. An approval (Number: 54022451-050.05.04-) was obtained from the Non-invasive Research Ethics Committee of the university.

PATIENTS

To be eligible, patients had to be between the ages of 18-75 and have no significant structural disorders (e.g., spinal disc herniation, spondylolisthesis/spondylolysis, fractures, dislocations, advanced degenerative changes and spinal stenosis), malignancy, neuromuscular disease, infection or pregnancy.

DATA SOURCES/MEASUREMENT

Self-administered "Survey of Manual Therapy Awareness" was prepared by using "Google Forms" (Supplement 1). The survey was organized to collect information from the patients in 6 sub-scales;

1. Demographic data; question 1-3,

2. General knowledge level regarding manual therapy; question 4, 5 and 13,

3. General attitude towards manual therapy and complementary medicine; question 6,7 and 14,

4. Indications and contraindications of manual therapy; question 8 and 9,

5. Effectiveness of manual therapy; question 10 and 11,

6. Prescribers and practitioners of manual therapy; question 12

Since the survey aims to get the most information with the least questions rather than measuring the knowledge level of the patients in a comparable way, open-ended, multiple choice and true/false type questions were used beside the Likert type questions in the survey. For this reason, content and facing validation analysis were applied instead of construct validation analysis (e.g. Cronbach's alpha and correlation analysis) which mostly evaluates pure numerical information in Likert type scales. In terms of content validation after the draft version was prepared opinions of an expert (Prof. Dr. Demirhan Dıracoglu) were obtained for the validity of the question form and necessary arrangements were made. In terms of facing validation the draft version of the survey was applied to a sample of fifteen patients as a pretest and after the interpretations of responders the final version of the survey was formed.

STATISTICAL METHODS

Statistical analyses were completed by using SPSS 26.0 (SPSS, Inc., Chicago, IL) statistics software. Continuous variables were provided as mean±standard deviation, and categorical variables were provided as numbers and percentages. The association between manual therapy knowledge and gender, education level and the opinion on the elimination of disc hernias with manual therapy were evaluated by Pearson chi-square test. A p value less than or equal to 0.05 was considered to be statistically significant.

RESULTS

The survey was conducted on 104 participants. 51.9% (n=54) of the participants were males. The mean age was 40.3±11 (19-65). Of the participants, 44.2% were university graduates, 25% of high school, and 17.3% of were master's graduates. 45.4% of the participants stated that they never heard of manual therapy, 38.5% said that they heard through television/social media/environment, but they did not know exactly what it was 16.3% of participants stated they did research and are knowledgeable about manual therapy. There was no difference according to gender or education level in terms of manual therapy knowledge reported by the participants ($p>0.05$). The expressions and percentages that the participants marked for the definition of manual therapy are given in Table 1.

While 81.7% of the participants stated that they believe traditional and complementary treatment methods could be effective, 46.4% stated that they occasionally ask their relatives for manual therapy-like (walking on back) help, and 12.5% reported that they had referred to people who are not health professionals for muscular and joint pain. Of the participants, 71.4% stated they find the idea manual therapy is a method used in ancient times and there is no medical basis for its use today to be incorrect. 68.9% of the participants stated that manual therapy can be used in lower back and neck pain, 66% in upper back pain, and 50.5% in joint pain (Figure 1). The manual therapy indications expressed by participants who have researched manual therapy before and the ratios of these indications are provided in Table 2.

Of the participants, 32% believed that cervical and lumbar disc herniations could be completely eliminated with manual therapy, and in terms of sharing

TABLE 1: The definitions of manual therapy marked by the participants.

	n	%
It is a form of treatment applied to the body with physical therapy methods such as electrical current, hot/cold packs and massage.	23	16.2%
It is a form of treatment performed by applying pressure, stretch or resistance to the muscles, bones and joints at various velocities.†	44	31.0%
It is a treatment applied entirely with hands, without any tools.‡	53	37.3%
It is a form of treatment which uses injection applications to painful areas in the body.	2	1.4%
It is a form of treatment popularly known as "snapping or cracking" in the society.§	16	11.3%
It is a form of treatment applied by bonesetters without a medical basis.	4	2.8%
Total	142	100.0%

N: Number of marks; †, ‡, §: Definitions that can be considered correct for manual therapy.

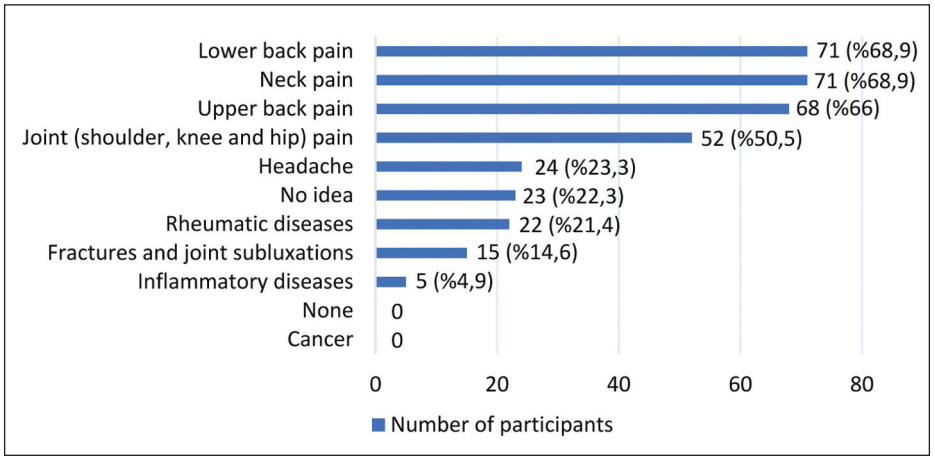


FIGURE 1: Indications of manual therapy, expressed by all participants.

this opinion, there was no significant difference between participants who have researched manual therapy before and the rest of the participants ($p>0.05$). While 53.7% of the participants stated the number of sessions required for manual therapy to be effective is 10-20 sessions, 31.6% stated 5-10 sessions.

In the question of comparing the effectiveness level of manual therapy with other physical therapy methods, 54.8% of the participants stated similar effects, while the rates of participants who stated that manual therapy was more effective or less effective were 1% and 9%, respectively.

Responses to the question "Who should decide which patients are suitable for manual therapy?" included 50% physician and 40% physiotherapist while the responses to the question "Who should apply the therapy?" resulted in 28.3% and 53.5%, respectively. The responses to the statements that manual therapy can be harmful when performed by untrained people and to inappropriate diseases are as follows respectively: 88.1% (Agree: 76.4%, Partially agree: 11.7%) and 80.3% (Agree: 66.6%, Partially agree: 13.7%). Responses to the statement that manual therapy may be ineffective when applied to inappropriate diseases was 75.6% (Agree: 65.9%, Partially Agree: 9.7%). While 26.2% of the participants stated that they would receive manual therapy if they do not benefit from other treatment options (physical therapy, exercise, medication, etc.), 67% stated that they could consider receiving manual therapy only if their doctor recommends it.

TABLE 2: The manual therapy indications expressed by participants who have researched manual therapy before.

	n	%
Lower back pain	17	21.3%
Neck pain	16	20%
Upper back pain	15	18.8%
Joint (shoulder, knee and hip) pain	15	18.8%
Headache	6	7.5%
Rheumatic diseases	5	6.3%
Fractures and joint subluxations	4	5.0%
Inflammatory diseases	2	2.5%
Total	80	100.0%

N: Number of marks.

DISCUSSION

Although the method of using hands started to emerge at the end of the 19th century with the concepts of osteopathy and chiropractic, until the second half of the 20th century, it remained as an ostracized method.[8] This discipline, which is accused of being "unscientific" even if practiced by medical doctors, has grown especially after the 1970s and the attitude to manual therapy has started to change.[8] While the increase in the number of patients treated successfully and the increasing interest of patients in this inclusive and individualized treatment enhanced the awareness of MM in the general population, the practice of MM by practitioners in a pattern consistent with the modern understanding of pain science has also allowed it to be accepted by other medical disciplines.[8,9]

According to the results of this study, there are very few (16.3%) who research and obtain information about manual therapy in Turkey. This situation does not differ among participants with a high education level. Despite this, participants were able to choose the statements that could be considered correct about the definition of manual therapy to a large extent (79.6%) (Table 1). This suggests that our society is familiar with this treatment, which has been traditionally applied for centuries, with different names and definitions. Among the participants, the number of people who believe that both traditional and complementary treatment methods and manual therapy can be effective is quite high. In accordance with this, it is noteworthy that the participants sometimes demand manual therapy-like practices from their relatives for their pain. However, the number of people who refer to non-healthcare personnel for these practices is relatively low (12.5%). On the contrary, the vast majority (67%) of the participants stated that they would consider receiving manual therapy only if their doctor recommended it. All of these suggest that there is a demand for manual therapy in our society, but that our society expects this demand to be met by physicians and other relevant healthcare professionals.

MM is primarily concerned with the diagnosis and treatment of conditions that are reversible, in which the structural anatomy does not change, but the function of the locomotor system is impaired. The modern concept of MM is based on clinical demonstration of nocireaction which is thought to result from segmental neuromuscular responses caused by the over-stimulation of "wide dynamic range neuron" (WDR-Neuron, spinothalamic convergence neuron).[1,10] These findings, described as segmental or somatic dysfunction by MM specialists, indicate altered or impaired function of the somatic system (skeletal, arthrodial, myofascial structures and their associated vascular, lymphatic and neural elements).[1] Old and nonspecific terms such as subluxation, osteopathic lesion, and joint blockade were abandoned in today's MM concept.[11] Dysfunction can occur primarily or in a number of diseases secondary to a specific problem. However, in such cases (secondary dysfunction), manual therapy may be an additional supportive therapy intended only to treat dysfunction. Because the target in MM is not the damaged structure, on the contrary, it's the damaged regulation.[12] Therefore, "nonspecific pain" which is not based on an underlying identifiable specific pathology (for example; infection, tumor, osteoporosis, fracture, structural deformation, rheumatic diseases, radicular syndrome) constitute the main interest area of MM.[13]

Nonspecific back and neck pain are the two most common reasons for referring to health systems in terms of musculoskeletal system.[13-16] In this regard, it is not surprising that the majority of MM applications are directed to the neck and back. In this study, the majority of the participants are of the opinion that MM can be used for back and neck pain. An interesting finding in this study is the high acceptance (32%) of the statement that cervical and lumbar disc herniations, which are structural problems, can be completely eliminated with MM applications. This indicates that there is a misdirection on MM in relation to cervical and lumbar disc herniation in our society. Acute disc herniations are definitive contraindications for certain MM applications (e.g., manipulation) as they are unstable and can be affected by changes in the pressure of the disc.[17] It should be noted that safer MM applications such as mobilization and neuromuscular therapy and MM applications planned for chronic disc herniations are also only supportive treatments to reduce secondary dysfunction. The low rate of indication of participants for inflammatory processes and instability (fractures, subluxations, post-op hypermobility, spondylolysis/spondylolisthesis), which are other definitive contraindications in terms of manual therapy applications, is pleasing (Table 2).

According to meta-analyses, MM applications were found to be moderately effective and equivalent to other physical therapy methods in back and neck pain.[4-6,18] In the systematic reviews and meta-analyses made to date, it was not possible to compare the number of manual therapy sessions and the frequency of application due to the heterogeneity of the studies.[4-6] In most of the studies, 2 sessions a week continuing for 2-3 weeks are seen.[8] Although there are publications stating that they are effective in one session available, multiple sessions (9-12) are found to be

more effective and more widely applied.[19,20] In this regard, in this study, the amount of the effect that participants expect from manual therapy and the number of sessions they deem necessary for the effect of manual therapy seem to be compatible with the literature.

Professionals who will perform MM applications are MM specialist physicians, physiotherapists, chiropractors, and osteopaths who acquire the necessary competency in terms of MM according to the rules of their medical specialty.[11] Although MM education covers the entire process of diagnosing and treating functional locomotor system disorders, it should be remembered that physicians are responsible for diagnosing diseases. For this reason, seeking physician consultations when needed is necessary for both patients and legal protection of non-physician professionals. The most serious complications associated with manual therapy are disc herniation, cauda equina syndrome, and vertebral or carotid artery dissection.[21,22] However, serious side effects are extremely rare (1.46/10,000,000 manipulations).[23] Patients should be screened for vascular dissection and those with risk factors should not be manipulated.[24] Bleeding disorder and chronic anticoagulation are also risk groups especially in terms of manipulation.[25] MM applications seem to be quite safe and have better side effect profile than NSAIDs when applied by competent professionals.[26] In this study, the vast majority of the participants agree that evaluation and treatment processes should be done by competent professionals in order to maintain MM practices effectively and safely.

LIMITATIONS OF THE STUDY

It was not possible to generalize this study to the whole population as a "convenience sampling" method was used. The high literacy rate and less significant degenerative changes (one of the exclusion criteria) caused the proportion of university graduates to be relatively high. In this regard, in order for this study to state manual therapy awareness in Turkey, a study with a larger sample is planned.

CONCLUSION

In Turkey, manual therapy is an unknown treatment method even among patients with a high education level. However, our society is familiar with this treatment by different names and definitions and may be in quest of manual therapy or similar implementations. Physicians interested in the musculoskeletal system being knowledgeable on manual therapy and informing their patients will ensure manual therapy to be well recognized in the society and reduce the number of abusive practices with inappropriate promises.

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