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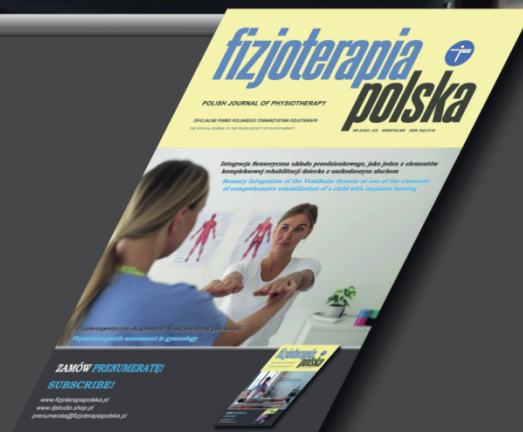
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The cooperation between physiotherapist and dentist in treatment of patient with functional disorders of the masticatory system – questionnaire survey

Współpraca między fizjoterapeutą a dentystą w leczeniu pacjenta z zaburzeniami funkcjonalnymi układu żucia – badanie ankietowe

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Abstract

Introduction. The experience gained by dentists and physiotherapists in the field of masticatory organ dysfunctions in relation to the body as a whole confirms the belief that the issue of disorders of the masticatory organ motor system is not a local problem. Therefore, the treatment of this type of diseases should not be limited only to the reconstruction of static and dynamic occlusion using conservative, orthodontic or prosthetic methods, neglecting the appropriate mobilization of the musculoskeletal, fascial, osteoarticular chains associated with the cervical section and further sections of the spine. Limiting the diagnosis and therapy of functional disorders only to elements of the stomatognathic system may generate even greater ailments and diseases in the patient.

A wide range of symptoms related to the stomatognathic system, causing unpleasant pain and emotional disorders, determines patients to seek help from many specialists, including: otolaryngologist, neurologist or physiotherapist. The patient has a chance to cure these health problems, provided that the entire rehabilitation team works: a dentist, a physiotherapist, a psychologist and a speech therapist specializing in masticatory system dysfunctions. Aim of study. The aim of the study was to determine the needs for establishing cooperation between a physiotherapist and dentist in the treatment of patients with functional disorders of the masticatory system.

Material and methods. The research was conducted among 28 physiotherapists from the West Pomeranian Voivodeship. The diagnostic tool used was an interview questionnaire, containing a number of questions regarding the conditions and quality of establishing cooperation with a dentist in the management of patients referred for physiotherapy treatments for the treatment of disorders in the stomatognathic system.

Conclusions. Existing physiotherapeutic methods shorten the duration of the disease, e.g. through massages, manual therapy (trigger point therapy, mobilization, post-isometric muscle relaxation), physical treatments (ultrasounds, biostimulation laser, cryotherapy, light therapy, magnetic field) and exercises (relaxation, stabilization, proprioception), which the patient performs under the supervision of a therapist and then alone at home. Achieving positive effects in the treatment of patients with stomatognathic disorders requires constant cooperation between a dentist and a physiotherapist. Only a comprehensive, holistic diagnostic and therapeutic approach is a condition for effective treatment.

Keywords

physiotherapist, dentist, masticatory system

Streszczenie

Wprowadzenie. Doświadczenia zdobyte przez dentystów i fizjoterapeutów w dziedzinie dysfunkcji narządu żucia w stosunku do całego ciała potwierdzają przekonanie, że problem zaburzeń motoryki narządu żucia nie jest problemem lokalnym. Dlatego leczenie tego typu chorób nie powinno ograniczać się tylko do rekonstrukcji statycznej i dynamicznej okluzji przy użyciu metod konserwatywnych, ortodontycznych czy protetycznych, pomijając odpowiednią mobilizację łańcuchów mięśniowo-szkieletowych, powięziowych, osteoartycznych związanych z odcinkiem szyjnym i dalszymi odcinkami kręgosłupa. Ograniczenie diagnozy i terapii zaburzeń funkcjonalnych tylko do elementów układu stomatognatycznego może generować jeszcze większe dolegliwości i choroby u pacjenta.

Szeroki zakres objawów związanych z układem stomatognatycznym, powodujących nieprzyjemny ból i zaburzenia emocjonalne, skłania pacjentów do szukania pomocy u wielu specjalistów, w tym: laryngologa, neurologa czy fizjoterapeuty. Pacjent ma szansę wyleczyć te problemy zdrowotne, pod warunkiem, że cały zespół rehabilitacyjny współpracuje: dentysta, fizjoterapeuta, psycholog i logopeda specjalizujący się w dysfunkcjach układu żucia. Cel badania. Celem badania było określenie potrzeb nawiązania współpracy między fizjoterapeutą a dentystą w leczeniu pacjentów z zaburzeniami funkcjonalnymi układu żucia.

Materiał i metody. Badanie przeprowadzono wśród 28 fizjoterapeutów z województwa zachodniopomorskiego. Narzędziem diagnostycznym był kwestionariusz wywiadu zawierający szereg pytań dotyczących warunków i jakości nawiązywania współpracy z dentystą w zarządzaniu pacjentami kierowanymi na zabiegi fizjoterapeutyczne w celu leczenia zaburzeń w układzie stomatognatycznym.

Wnioski. Istniejące metody fizjoterapeutyczne skracają czas trwania choroby, np. poprzez masaże, terapię manualną (terapia punktów spustowych, mobilizacje, postizometryczne relaksacje mięśni), zabiegi fizykalne (ultradźwięki, laser biostymulujący, krioterapia, terapia światłem, pole magnetyczne) oraz ćwiczenia (relaksacja, stabilizacja, propriocepcja), które pacjent wykonuje pod nadzorem terapeuty, a następnie samodzielnie w domu. Osiągnięcie pozytywnych efektów w leczeniu pacjentów z zaburzeniami stomatognatycznymi wymaga stałej współpracy między dentystą a fizjoterapeutą. Tylko kompleksowe, holistyczne podejście diagnostyczno-terapeutyczne jest warunkiem skutecznego leczenia.

Słowa kluczowe

fizjoterapeuta, dentysta, układ żucia

Introduction

Dysfunctions of the masticatory organ motor system are one of the most common causes that prompt the patient to consult a dentist, laryngologist, neurologist, psychologist or physiotherapist. The disease affects women twice as often, especially aged 20 to 40 [1]. The percentage of patients complaining of ailments related to the stomatognathic system ranges between 40% and 90% of the population [2]. The literature on the subject states that these disorders are currently, after caries and periodontal diseases, an important dental problem affecting the general population [3].

Pain in the temporomandibular joint area, co-occurring with other symptoms in the head and neck area (e.g. increased muscle tension, acoustic symptoms, impaired mobility in joints) constitute a triad of troublesome ailments that prompt patients to frequent medical consultations.

Pain caused by increased muscle tone within the stomatognathic system is observed both in the resting position of the mandible and in the maximum intercuspation of the teeth [4]. However, the symptoms of this disease may not directly indicate a dysfunction of the masticatory system. Kleinrok indicates, among other things, the co-occurrence of pain symptoms in the eyeball and orbit as well as otolaryngological disorders [5]. Excessive muscle activity in the case of functional disorders of the masticatory organ motor system may manifest itself, among others, in: ear symptoms, the most common of which is tinnitus [6].

The etiopathogenesis of these disorders is complex and not yet fully understood. The causes of the disease include: occlusal and articulatory obstructions leading to destabilization of the occlusion, physical, metabolic and hormonal factors, as well as psychological factors [7].

Each filling, extraction, prosthetic restoration or orthodontic treatment affects static and dynamic occlusal conditions. The smallest occlusal obstacle, of the order of a few microns, has an adverse effect on the proprioceptors of the masticatory system. This may lead to bruxism (clenching or grinding of teeth), which in turn may result in functional disorders of the cranio-mandibular system. This results in overload of teeth, periodontium, muscles and joints [8].

Long-term stress promotes excessive stimulation of the hormonal system (increase in the level of, among others, cortisol and adrenaline), at the same time contributing to the stimulation of the cardiovascular and nervous systems as well as increased muscle tension and activity. This condition causes a non-physiological load on the tissues of the stomatognathic system and disturbances in the ability of this system to adapt to increased loads [9].

The multitude of clinical symptoms, increasing pain, tinnitus and dizziness, indicate the need to take a broader look at the cause of the disease. For this reason, patients seek advice from various specialists, e.g. a neurologist, an otolaryngologist or a psychiatrist. Long-term pain and diagnostic difficulties reduce the quality of life of patients and generate negative economic consequences. During the treatment process, patients with dysfunctions of the stomatognathic system may experience symptoms of low mood and even depression, which further complicates the recovery process [10].

Therapy of dysfunctions of the masticatory system involves eliminating structural disorders through conservative, prosthetic and orthodontic treatment. The next stage may be the use of occlusal or compensatory splints. If necessary, the patient is recommended to use pharmacological therapy that has anti-inflammatory, analgesic and myorelaxant effects. In case of symptoms of stress or mood disorders, patients are also recommended to use antidepressants and anti-anxiety preparations, e.g. selective serotonin reuptake inhibitors [11].

The phenomenon of tensegrity, which is strongly associated with disorders of the masticatory system, proves that even distant structural changes, through the body's myofascial tapes, can appropriately influence individual functions of distant tissues and organs. In this light, changes within selected segments of the spine or its complete deformation have a significant impact on the therapeutic treatment of people with disorders of the stomatognathic system. Undoubtedly, cooperation between a physiotherapist and a dentist is needed for this purpose.

The tensegrity model (tension and integrity) is used to describe the interaction of individual elements in a complex physical structure. This applies especially to insulated elements subjected to compression in a network loaded with constant pressure. The tensegrity model was constructed by Richard Buckminster Fuller and Kenteh Snelson. It assumes that elastic elements remain tense or relaxed depending on the place where the force is applied and its vector. Research on the issue of the peculiarities of the incongruence of the temporomandibular joints in relation to the phenomenon of tensegrity occurring in the human body is innovative and interdisciplinary. This view of the patient is intended to direct doctors, dentists and physiotherapists to perceive the problem of masticatory organ dysfunction in relation to the body as a whole. The experience gained over the years in this field confirms the belief that the issue of functional disorders of the masticatory system is not usually a local problem. Therefore, the therapy of this type of diseases should not be limited only to the reconstruction of static and dynamic occlusion using conservative, orthodontic or prosthetic methods, neglecting the appropriate mobilization of the myofascial, osteoarticular and other chains associated with the cervical and distal sections of the spine. Limiting the diagnosis and therapy of functional disorders only to elements of the stomatognathic system may generate even greater ailments and diseases in the patient.

To sum up, it should be noted that in the process of treating masticatory system dysfunctions, the appropriate selection of both dental and physiotherapeutic therapy plays an important role. A holistic view of the disease allows for a comprehensive diagnosis, determining the cause of the disease and introducing appropriate therapy. Causal diagnostics should be carried out, determining the mechanisms leading to physiological disorders of muscle functioning, as well as causal and symptomatic treatment [13].

Aim of study

The aim of the study was to determine based on a literature review and research results, possibilities and needs for esta-

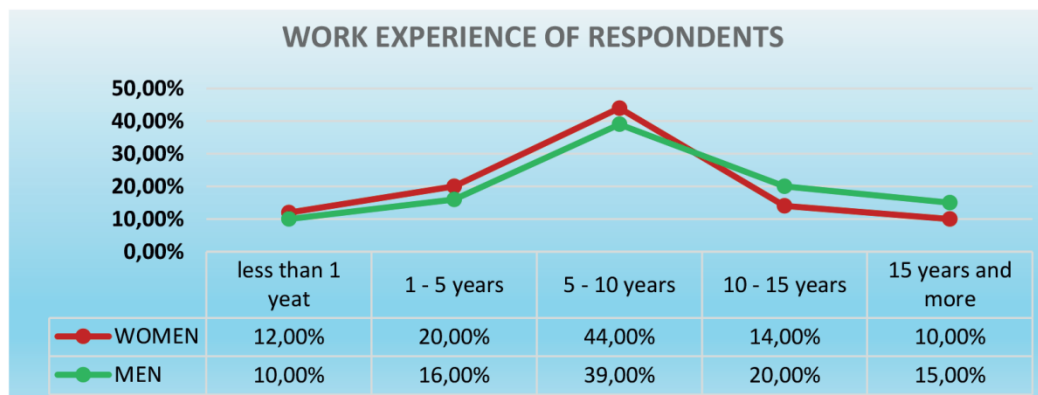


Fig. 1. Work experience of respondents

blishing cooperation between a physiotherapist and dentist, in the treatment of patients with dysfunctions of the masticatory system.

Material and methods

The questionnaire was addressed to a group of physiotherapists, women (F = 18) and men (M = 10), from the West Pomeranian Voivodeship. 28 people responded. The mean age of respondents (SD) was 36.25. The diagnostic tool used was an interview questionnaire, containing 18 questions regarding the conditions and quality of establishing cooperation with a dentist in the management of patients referred for physiotherapy treatments for the treatment of disorders in the stomatognathic system. The largest group of respondents (45%) were physiotherapists whose work experience ranged from 5 to 10 years (Fig. 1).

The first part of the questionnaire contained sociometric data regarding the age and gender of the respondents. In addition, it contains questions related to current experience in the treatment of masticatory system diseases and cooperation with other specialists, including:

1. Do you think that cooperation between a dentist and a physiotherapist is important for the effective treatment of SSJ disorders?
2. Do you cooperate with the patient's referring dentist during therapy?

3. How would you describe the cooperation with the dentist who refers the SSJ patient for treatment?

- a) I follow all recommendations of the referring doctor;
- b) If I consider it necessary, I suggest another form of treatment, after consultation with a dentist;
- c) The referring dentist makes my work difficult
- d) I do not see the need to contact the referring doctor and if necessary, I modify the therapy according to my knowledge.

In the second part of the questionnaire, respondents were asked about:

1. Symptoms with which patients were referred for consultation (in terms of the masticatory organ, hearing organ, emotional complaints);
2. The cause of masticatory system disease in patients sent for rehabilitation;
3. The form of therapy recommended by dentists;
4. The need for reimbursement of dental rehabilitation treatments and development of standards of treatment for masticatory system dysfunctions.

Results

The research shows that the largest group of patients with disorders of the masticatory system are people referred by a dentist – 44% and an otolaryngologist – 25% (Fig. 2). Other specialists much less often recommend physiotherapy consultations to patients.

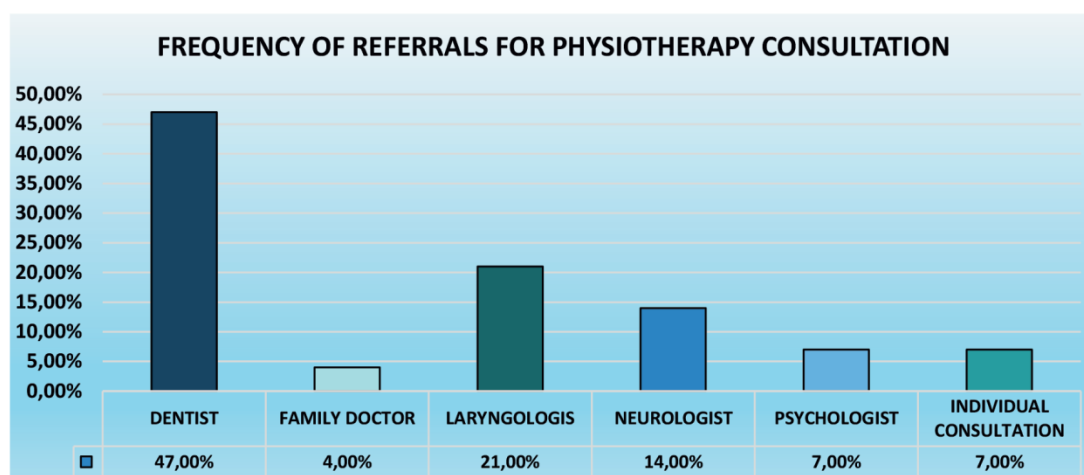


Fig. 2. Frequency of referrals for physiotherapy consultations from other health care specialists

The respondents indicated that the main causes of diseases of the masticatory system in treated patients are bite disorders and poor dental condition (33%), and followed by postural defects and a stressful lifestyle (Fig. 3).

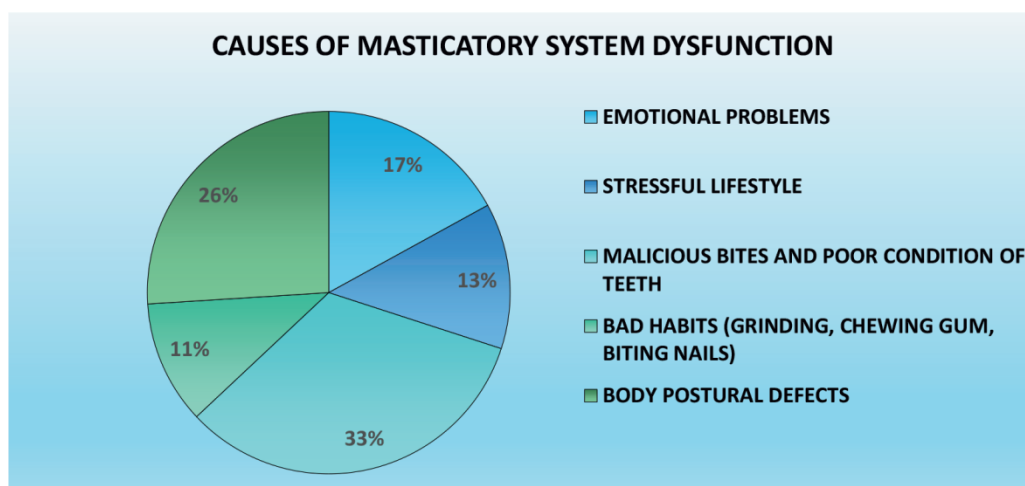


Fig. 3. Causes of masticatory system dysfunction

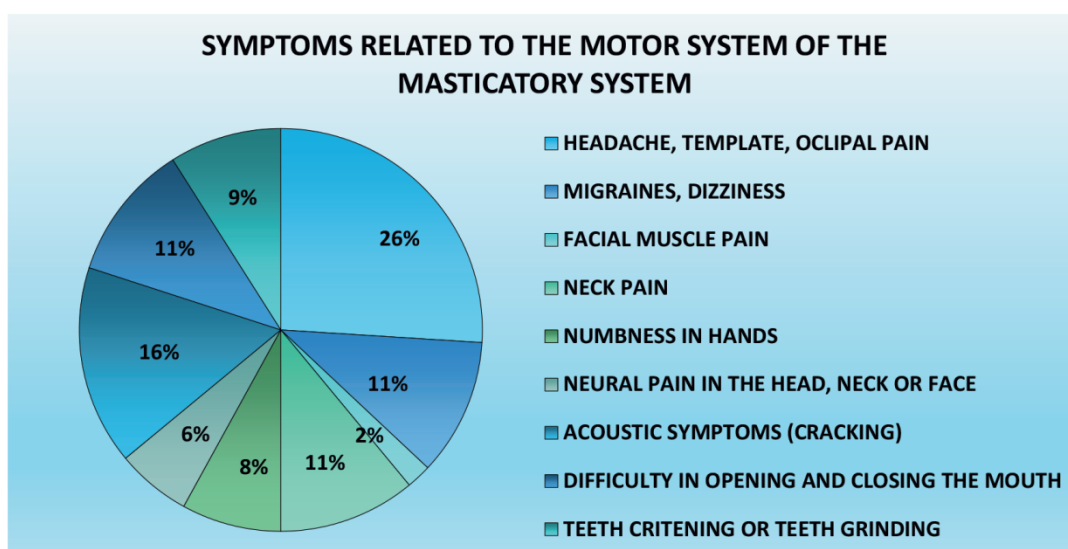


Fig. 4. Symptoms of the masticatory system, indicated by patients during consultations with a physiotherapist

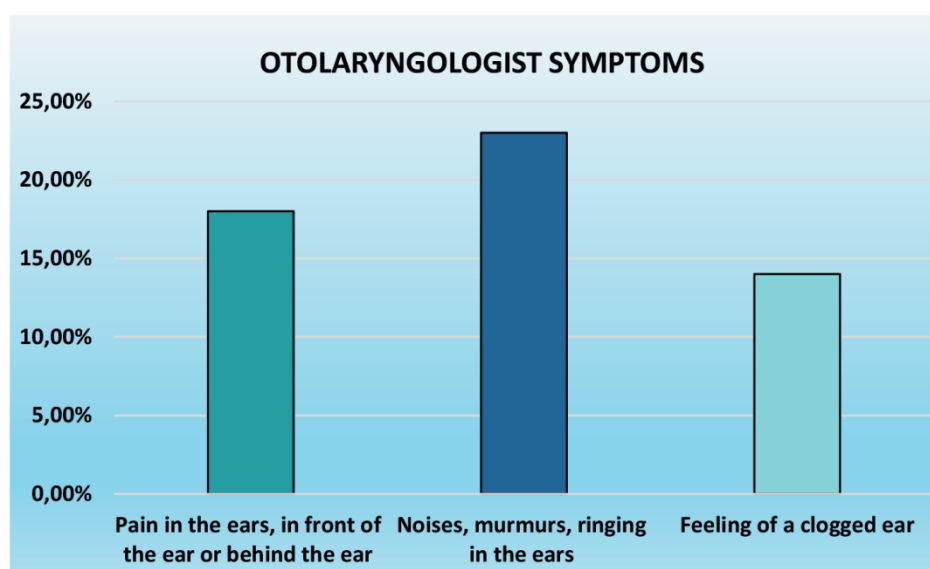


Fig. 5. Otolaryngological symptoms occurring in patients coming for a physiotherapy consultation

Respondents also indicated that patients experienced psychosomatic symptoms, especially sleep disorders, depressed mood and anxiety syndrome (Fig. 6).

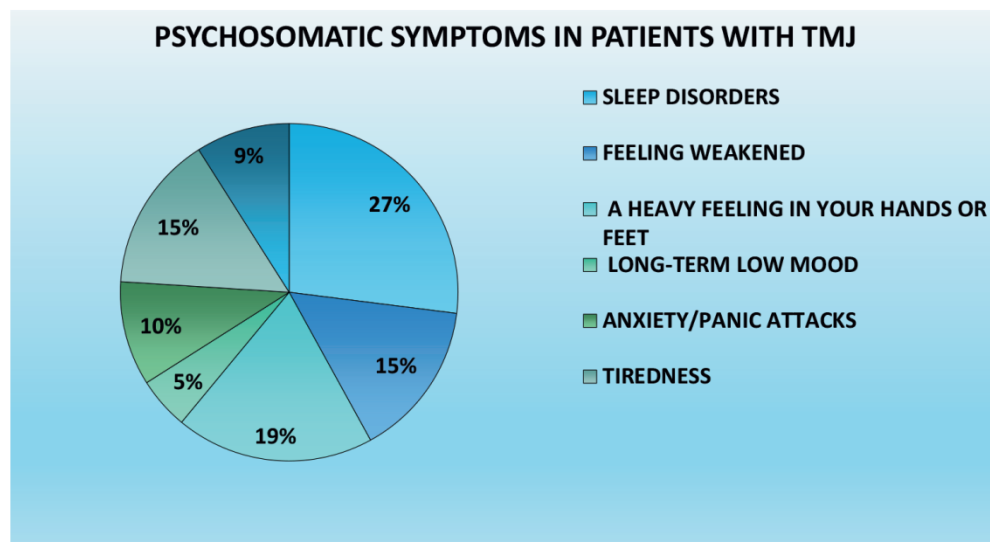


Fig. 6. Psychosomatic symptoms occurring in patients with disorders in the temporomandibular joint

The most frequently indicated forms of therapy for masticatory system dysfunctions, recommended by a dentist, are: pharmacological treatment, manual therapy and dynamic taping. Among the physical treatments, dentists recommended magnetic field therapy and laser treatments to patients (Fig. 7). In the questionnaire,

physiotherapists indicated that only 10% of the referred patients were under the constant care of a psychologist, despite the occurrence of mood disorders and long-term sleep problems. 64% of respondents recommended that patients use appropriate self-therapy in accordance with the dentist's recommendations.

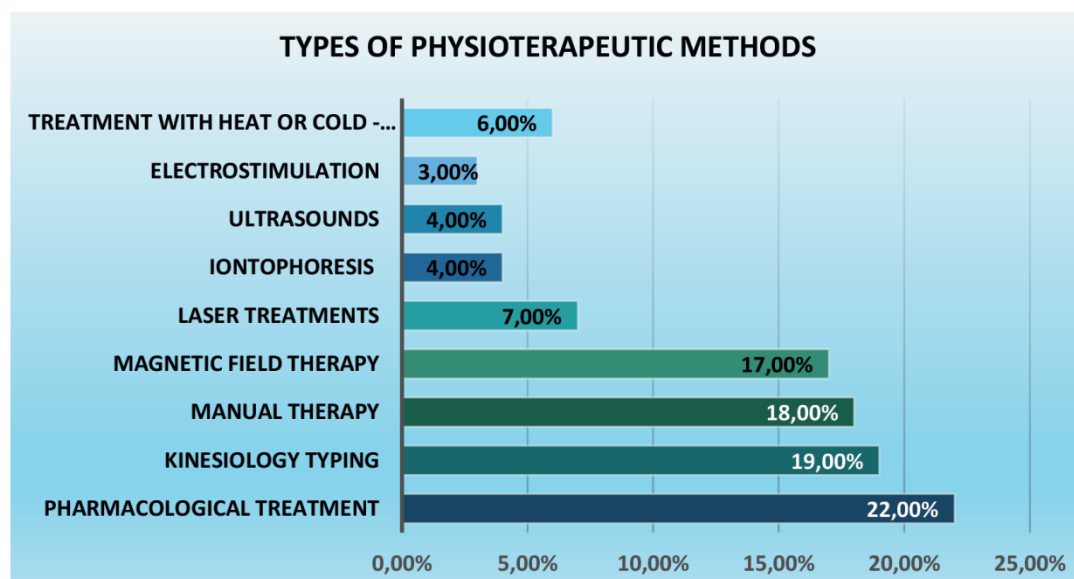


Fig.7. Types of therapy recommended by dentists to patients referred to physiotherapy

73% of respondents indicated that developing standards of rehabilitation procedures for patients with stomatognathic dysfunctions would facilitate the treatment process. Moreover, the

vast majority of physiotherapists (92%) believe that the process of treating masticatory system dysfunction should be fully reimbursed.

Discussion

Existing physiotherapeutic methods shorten the duration of the disease, e.g. through massages, manual therapy (trigger point therapy, mobilization, post-isometric muscle relaxation), physical treatments (ultrasound, biostimulation laser, cryotherapy, light therapy, magnetic field) and exercises (relaxation, stabilization, proprioception), which the patient performs under the supervision of a therapist and then alone at home.

However, current research does not provide a complete picture of knowledge regarding the frequency and quality of the use of rehabilitation and physical therapy in diseases and dysfunctions of the masticatory system. Research conducted in 2011 on a group of 76 dentists shows that the use of physical therapy treatments is justified in the treatment of difficult-to-heal tissues after surgery (49%) or in the case of trismus (38%). Only 20% of respondents indicated that they would use physiotherapeutic treatments in the case of pain and acoustic complaints in the stomatognathic system [12].

In the study, respondents indicated that the most frequently used treatments were muscle exercises (41%), laser biostimulation of the temporomandibular joints (29%) and manual therapy (26%). The surveyed doctors did not recommend the use of dynamic patching or LED therapy [12]. The conclusions of the study indicate that dentists did not cooperate with physiotherapists, but expressed the need to expand their team with an experienced physiotherapist.

In 2013, the Department of Rehabilitation and Physiotherapy of the Department of Rehabilitation and Physiotherapy and Balneology at the Medical University of Lublin, presented a case study of the therapy used in a 45-year-old patient, diagnosed and treated for a long time due to a severe form of masticatory organ dysfunction syndrome [10]. The patient complained of constant bilateral facial pain (rated at 10 degrees on the VAS scale), severe pain in the spine, lower and upper limbs, as well as sleep disturbances and visceral problems. In the assessment of body posture, the following items were indicated: protraction of the head, increased cervical lordosis and high position of the shoulder girdle.

The team undertook comprehensive therapy, initially aimed at relaxing the fascial tendon cap and temporal muscles. A deep

massage of the facial muscles and a functional massage of the suboccipital muscles were used to relax and stretch the muscles. Additionally, therapy was introduced to stabilize the shoulder and maintain proper body posture. The patient's task was to perform exercises at home to increase jaw mobility. In addition, a relaxation splint was used. The comprehensive therapy undertaken contributed to the gradual reduction of pain and improvement of the patient's psychophysical condition.

The above examples clearly indicate that achieving positive effects in the treatment of patients with stomatognathic disorders requires constant cooperation between a dentist and a physiotherapist.

Conclusions

Based on the collected data and analysis of the literature on the subject, it is concluded that:

- Only a comprehensive, holistic diagnostic and therapeutic approach is a condition for effective treatment of masticatory system dysfunctions.
- Popular physiotherapeutic methods are used less frequently in the treatment of dysfunctions of the masticatory system than standard pharmacological therapy.
- A family doctor, a neurologist and a psychologist refer patients for a physiotherapeutic consultation less often than dentists. Due to the above, there is a need to conduct a study in this group of specialists in order to determine the level of knowledge and skills in diagnosing dysfunctions of the masticatory system.
- Patients undergoing physiotherapy, despite the co-occurrence of psychosomatic symptoms, rarely used the help of a psychologist.
- Delayed diagnosis of the disease extends the duration of therapy and reduces the quality of life of patients

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