**IX. Summary**

Myofascial pain is a psychophysiological disorder which is associated with the structure of muscle tissue, in particular with the muscles of the masticatory system (2). Sometimes   
it is called as as myalgia, myofascitis, fibromyalgia, myofibrositis or myofascial pain syndrome (MPS) (2). According to the latest taxonomy, however, these are separate diseases.   In the case of the association with the temporomandibular disorders, it is often defined as myofascial pain dysfunction syndrome (MPDS) (2). In the classic approach, myofascial pain is conditioned by the presence of trigger points (Trigger Points, TrP's) (2,3,4). It appears locally or at a certain distance from the site initially affected by the disorder (2). This is an aspect that is different in relation to other ailments in the musculoskeletal system (2).

The aim of the study was to evaluate the influence of soft tissue mobilization in patients with masticatory system dysfunction by using biometric devices, with respect   
to the diagnostic criteria of functional disorders of temporomandibular joints DC / TMD.

The research was carried out in the group of 50 randomly selected, generally healthy people (37 women and 13 men) in the age of 23.36 ± 2.14 years. The criterion of qualification was the presence of pain in the cranio-facial and / or cranio-mandibular area at the level   
of 8 points in the VAS scale.

All persons involved in the study have been subjected to a thorough assessment.   
The following clinical procedures were carried out:

A. Clinical examination including functional examination of temporomandibular joints  
and muscles of the stomatognathic system according to diagnostic criteria of functional disorders of temporomandibular joints (Diagnostic Criteria for Temporomandibular Disorders DC / TMD) - axis I and II (50).

B. Survey based on the PSS-10 protocols (Perceived Stress Scale), NDI (Disability index caused by pain in the cervical part of the spine) and the Beck depression scale

C. Instrumental analysis including:

a. vibration analysis of temporomandibular joints

(Joint Vibration Analysis, JVA)

b. electromyographic examination of chewing muscles

(BioEMG)

c. computer analysis of occlusion

(T-scan III)

D. Soft tissue mobilization (3 times)

E. Statistical analysis

(Statistica 13.1 software EN)

In the conducted study, 70% of respondents indicated the potential occurrence   
of functional temporomandibular disorders. In the case of 15 people, there was a dubious presence of dysfunction. The prevalence of temporomandibular joint disorders in the group   
of women and men was comparable and amounted to 70%. Regarding to the body chart 56% of respondents declared pain in the cervical spine. 48% of people indicated problems with the thoracic and lumbar area. The prevalence of pain in the right temporal muscle and the left one was similar and shaped at the level of 50% ± 2. In the case of masseter muscles, pain symptoms were reported by 70% of the patients. Pain in the area of the left temporomandibular joint was reported in 68% of cases. 54% of the patients suffered from the complaints of the right temporomandibular joint. In the case of chronic pain, 60%   
of respondents showed low pain intensity without functional disorders (GCPS, IIº). High intensity of pain with disregarding dysfunction and moderate functional limit (IIIº)   
was reported in 12% of people (GCPS, IIIº). In 10% of patients, severe functional limit was found (IVº). The study group declared significant functional limitations regarding both the JFLS-8 and JFLS-20 questionnaires.

In 56% of the subjects, varying severity of depressive symptoms were found (PHQ-9).  
Regarding the Beck depression scale, the presence of depressive symptoms was noted only   
in 30% of respondents (Beck Depression Inventory). In 28% of patients, the medium level   
of intensity of somatic symptoms was observed, while in 8% it was high (PHQ-15).   
44% of respondents declared different degree of anxiety disorders (GAD - 7). The most common problem in the study group was sleeping in positions that induce jaw compression (Oral Behavior Checklist). 66% of patients had moderate stress levels (PSS-10). High intensity was observed in 12% of people, including 14% of women and one man (8%). 22% of respondents declared low intensity of stress (PSS-10). 60% of respondents showed   
the presence of mild disorders associated with the cervical spine (NDI). Moderate symptoms were observed in 20% of people. Strong disorders were related to 2% of respondents (NDI).

Joint Vibration Analysis (JVA) made it possible to qualify 67% of all examined temporomandibular joints (n = 100) to group I with respect to the Piper's classification.   
Class IIIa was noted in the case of 17 joints and class IIIb only in one. 8 joints were qualified to class IVa, 3 joints to IVb. In class Va and Vb 2 joints were observed.

Soft tissue mobilization decreased the activity of the masticatory muscles in the whole group (Table 21). Statistically significant differences were reported after I, II and III therapy with respect to the functional potentials noted before the treatment (p <0.05). In the assessment of the effectiveness of II soft tissue mobilization, statistical significance was observed only in the case of masseter muscles. There were no statistically significant changes with respect to the other muscles. Statistical analysis showed significant differences of the activity of masseter, digastric and right temporal muscle recorded before and after III soft tissue therapy (Table 21) (p <0.05).

In the case of temporal and masseter muscle, high values of symmetry before and after the treatment were recorded in the whole group (> 80%) (Table 25). The results of digastric muscles were at the similar level (Table 25). Slightly lower values were obtained in the case of sternocleidomastoideus muscles (> 70%) (Table 25). Medium level of synergy of the temporal and masseter muscle (both the right and the left side) was noted (50-70%).

Soft tissue mobilization resulted in shortening both occlusion and disclussion times in the whole group (Table 29). Values recorded before and after therapy oscillated within the limits of reference values dedicated to specific parameters (TO <0.2 s, TDR <0.4 s,  
TDL <0.4 s) (Table 29). The highest effectiveness was recorded in the case of I  
and III therapy. This can be proved by the lack of statistically significant differences with respect to all the examined parameters for the stages - before and after the second therapy, after the first and before the second therapy,after II and before III therapy, as well as   
a statistically significant difference in the occlusion time before and after the third treatment (Table 29). Soft tissues mobilization did not change the distribution of dental arch load (Table 34). The observed differences were not statistically significant (p> 0.05).

Presented study revealed the essential contribution of the biopsychosocial component   
in the dysfunction of the masticatory organ. A significant levels of stress, depression and neck disability were demonstrated. 33% of the temporomandibular joints presented symptoms of disorders according to the Mark Piper’s classification. It was found that soft tissue mobilization plays an important role in the deprogramming of the masticatory muscles, does not improve symmetry and synergy, contributes to shortening the occlusion and disclussion time, and has no effect on the distribution of occlusal loads in the dental arch .