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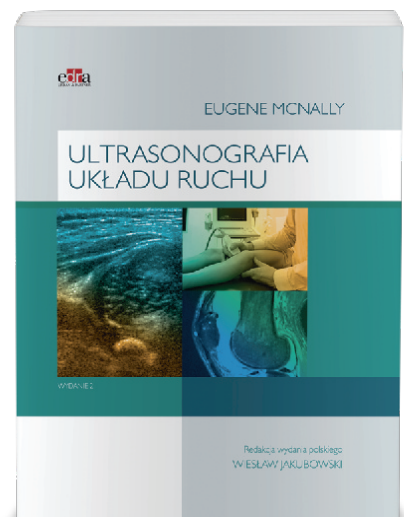
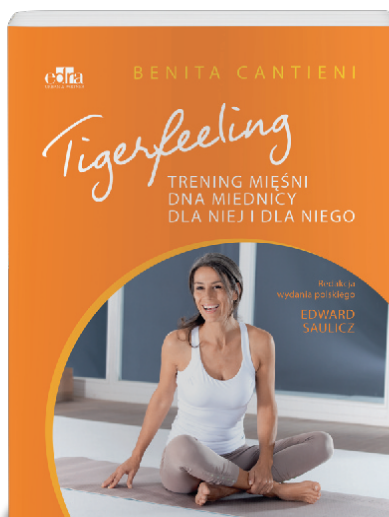
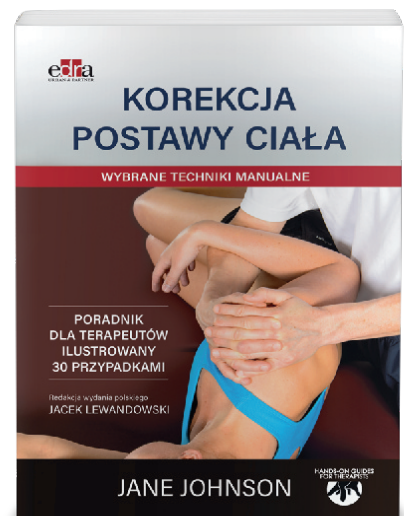
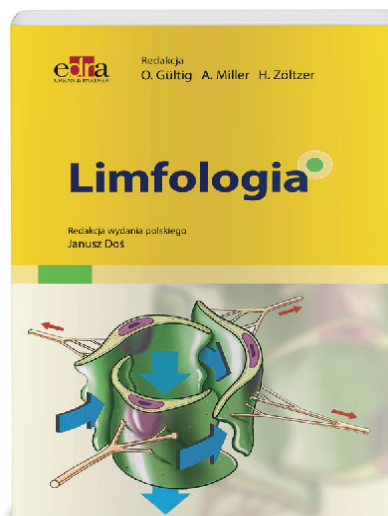
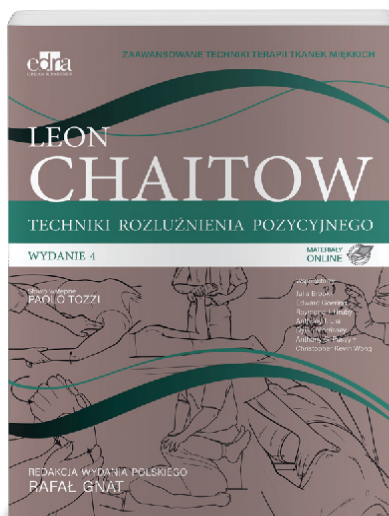
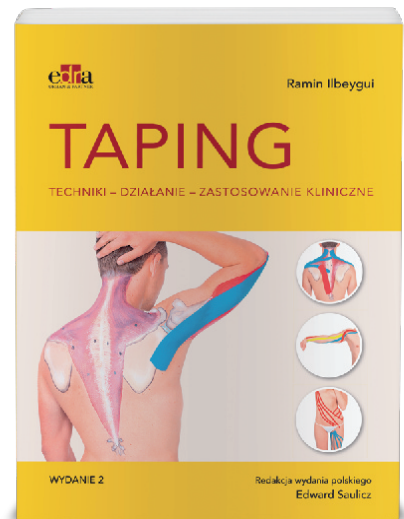
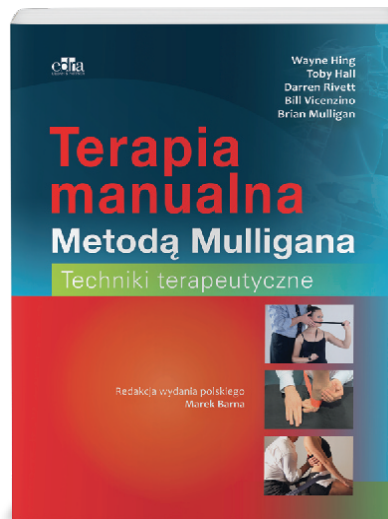


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Porównanie wpływu masażu klasycznego z masażem Lomi Lomi Nui na stan psychofizyczny człowieka

Comparison of the impacts of classic massage and Lomi Lomi Nui massage on the mental and physical condition of the patient

传统按摩与罗米按摩对人的心理物理状态的影响比较

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Streszczenie

Celem pracy jest porównanie wpływu masażu klasycznego z masażem Lomi Lomi w leczeniu zmęczenia psychofizycznego wywołanego stresem. Kolejnym celem jest porównanie wpływu masażu na nawodnienie organizmu i poziomu wody pozakomórkowej.

Materiał i metody. W badaniach wzięło udział 30 osób w wieku od 25 – 65 lat.

Pacjenci zostali podzieleni na 2 grupy. W grupie I znajdowało się 15 osób (7 kobiet i 8 mężczyzn), u których wykonano masaż klasyczny. Grupa II składała się również z 15 osób: z 7 kobiet i 8 mężczyzn, u których wykonano masaż Lomi Lomi.

Przed masażami w obu grupach wykonano pomiar masy ciała i wzrostu, następnie wykonano badanie impedancji bioelektrycznej w celu zmierzenia nawodnienia organizmu i poziomu wody pozakomórkowej.

Po masażach wykonano drugi pomiar impedancji w celu wyodrębnienia różnicy w wynikach po zabiegu. Następnie badani zostali poproszeni o wypełnienie kwestionariusza, w której padło pytanie o ocenę efektywności masażu w łagodzeniu zmęczenia psychofizycznego oraz o odczucia podczas i bezpośrednio po zabiegu.

Wyniki. Obydwa masaże są skuteczne w łagodzeniu objawów przemęczenia psychofizycznego wywołanego stresem. Wyniki nie były istotnie statystycznie. Masaż klasyczny wpłynął na redukcję bólu i napięcie mięśnie, masaż Lomi Lomi wpłynął na sferę emocjonalną – badani byli wyciszeni, harmonia pomiędzy duchem

a ciałem została przywrócona, co było istotnie statystyczne. Wyniki badań impedancji bioelektrycznej wykazują że masaże wpłynęły na zmianę nawodnienia organizmu

i poziomu wody pozakomórkowej. Porównanie średnich arytmetycznych wyników, wykazało że masaż klasyczny wykazał większą zależność, niż masaż Lomi Lomi co było istotne statystycznie.

Słowa kluczowe:

Stres, masaż leczniczy, impedancja bioelektryczna

Abstract

The objective of this study is comparison of the impacts of classic massage and Lomi Lomi Nui massage in treating stress-induced mental and physical tiredness. Another objective is to compare the impact of massage on body hydration and on the level of extracellular water.

Materials and methods. The study covered 30 persons aged 25 - 65.

The patients were divided into 2 groups. Group I included 15 people (7 women and 8 men) who underwent a classic massage. Group II included 15 people (7 women and 8 men) who underwent a Lomi Lomi massage.

Before the massage, the body mass and height were measured in both groups, and then the patients underwent bioelectrical impedance analysis for the purpose of measuring body hydration and the level of extracellular water.

After the massage, impedance was measured again for the purpose of determining the difference in results after the massage. The patients were then asked to fill in a questionnaire including a question about the effectiveness of massages in decreasing mental and physical tiredness and about the impressions during and right after the massage.

Results. Both massages are effective in alleviating the symptoms of stress-induced mental and physical tiredness. The results were not statistically relevant. The classic massage resulted in reduction in pain and muscle stiff muscles, while the Lomi Lomi massage affected the emotional aspects - the patients were relaxed, the harmony between spirit

and body was recovered, which was statistically relevant. The results of bioelectrical impedance analysis indicate that the massages affected body hydration and the level of extracellular water. The comparison of arithmetic means of results indicated that the classic massage demonstrated a greater relationship than the Lomi Lomi massage, which was statistically relevant.

Key words:

Stress, medical massage, bioelectrical impedance

摘要

研究目的在比较传统按摩与罗米按摩对因压力所引起心理物理疲劳在治疗上的影响，另一目的在比较按摩对身体水合作用和细胞外水位的影响

材料和方法。一共 30 名 25-65 岁的人士参与研究，患者被分成二组。第一组有 15 人（包括 7 名女性及 8 名男性），他们接受传统式按摩。第二组同样由 7 名女性及 8 名男性共 15 人组成，他们接受罗米按摩。

两组人士在按摩前均量体重和身高，然后进行生物电阻抗测试，以测量身体水合作用和细胞外水份的水平。按摩后再进行第二次阻抗测量，以区分疗程后的结果差异。之后受试者被要求填写问卷，当中问及按摩对生理物理疲劳缓和的效果及疗程进行后的感受等方面的评价。

结果。此二种按摩在缓和因压力引起的心理物理疲劳症状上均有效，结果无统计学意义。

传统按摩在降低疼痛和肌肉紧张上有影响，罗米按摩则在情绪领域上有影响 – 受试者变得安静，身体和心灵上的平衡恢复，此具统计学意义。生物电阻抗测试结果显示按摩对身体水合作用及细胞外水位的变化有影响。结果的算术平均比较显示出传统按摩比罗米按摩有更大的依赖性，此具统计学意义。

关键词：

压力、传统按摩、生物电阻抗

Introduction

Stress and chronic tiredness that affect our mental and physical condition are becoming more and more serious problems of everyday life.

With contemporary lifestyle, people are exposed to multiple harmful factors, and, in such conditions, the internal self-regulation processes, fail [1].

Stress plays two roles in our bodies. On the one hand, it leads to behavioral disorders, and on the other - it is necessary for effective functioning. Emotional strain is a negative phenomenon when it is disorienting, paralysing and energy-depleting. The stress of explicitly negative character is called distress. The positive, motivating force that improves the quality of life, is called eustress [1].

There are two types of stress: mental and physiological. Mental stress constitutes a change that appears in psychological regulatory and functional mechanisms under the influence of various kinds of situations. Stress may be any stimulus or situation that constitutes an obstacle, a disruption of an activity, each loss, damage or ailment [2].

Physiological stress is the complex of general adaptation changes of the body, as reaction to a new stimulus that appears in the body or its surroundings. That complex includes, among others, intensified metabolic processes, increase in blood pressure and heart rate, increase in blood sugar level, increase in body temperature, secretion of immune antibodies, increase in blood coagulability [3].

Chronic stress conditions may lead to disruptions of body immunity, to psychosomatic disruptions. Nowadays everyone experiences stress at work or in personal life. Each and every one of us reacts and experiences stress-inducing situations differently. The resistance threshold is also different. The pace of the world contributes to appearance of a number of unforeseeable situations that may result in mental discomfort [4].

One of the physical therapy methods used in treatment of mental and physical tiredness is massage. Massage is a procedure performed on a body, where mechanical stimuli, mainly in the form of pressure on tissues, allow to obtain a physiological reaction [5]. Musculoskeletal pains are rather associated with tiresome rehabilitation, but the situation is different in this case. The soothing touch of massage, however, does not only bring pleasure, but is a superb tool in fighting with the effects of stress [6].

Massage includes specialist techniques or particular methods in which, using direct touching, we cause positive effects on the physical and, indirectly, emotional condition of the patient. Working on the physical level, we cause a decrease in muscle tension, and at the emotional level - we allow the patient to calm down and relax [6].

Currently, there is visible increased popularity of that form of relaxing procedures with the body for the purpose of arriving at relaxation. The growing health awareness of the society, growing incomes, growing need for self-fulfillment and improvement in own image and better access to medical and tourist services, contribute to an increase in the demand for both medical and tourist services. For those reasons, trips, in particular at weekends, for relaxation purposes, for fast strength regeneration, tension and stress reduction, are beginning to be perceived as a perfect form of leisure. They

are used by those that want to preserve their condition, youth and well-being [7].

The increased popularity of massages in medicine and rehabilitation appeared in 1920s, both in Poland and in Europe.

In the interwar period, massages were introduced in healthcare units and physical therapy centers. At the end of 1990s, there was noticed an increase in use of massages not only in medicine or rehabilitation, but also in contemporary wellness centers and sanatoriums. The most common massage is medical massage (rehabilitation massage - used in physical therapy), cosmetic massage (nursing, modelling), relaxation massage (calming down) and sports massage.

The new trends include specific application of massage in athletic recovery, esthetic medicine and prevention of aging processes. The popularity of the so-called ethnic cosmetics, in particular in good beauty salons and wellness centers, allows for the patient to discover various massage and body nursing techniques. Examples include aromatherapy massages with essential oils and various kinds of relaxation massages, such as: Thai massage, ayurvedic massage, Turkish hammam massage, Polynesian Ma-uri massage, Hawaiian Lomi Lomi Nui massage [8, 9].

The mechanism of massages is based on local and general (central) relaxation. The local effects of a massage consist in increasing the blood flow in blood vessels, increased flow of lymph in the lymphatic vessels, intensified transportation processes - delivering more oxygen to the massaged tissues, and faster removal of metabolic products, normalization of skin glands, decreased muscle tension, improved flexibility and endurance of the whole ligament system, and thus increased joint mobility [8].

In turn, the general reactions taking place as a result of massage consist in stimulation of the nervous system. Through reflexes and coordination activity of the cerebral cortex, the functioning of all the organs and systems is normalized. Apart from a number of physical reactions at the body level, massage also has an indirect effect on mental reactions [5]. By using specific techniques in the proper order, you increase the local blood flow in the expanded blood vessels, thus increasing transport of oxygen and nutrients to the massaged tissues and removal of carbon dioxide and harmful metabolites from them. The general systemic reactions taking place during a massage are associated with stimulation of the nervous system, responsible for a number of physiological reactions in the organs and systems. By increasing tissue capacity, massage has a positive effect on general efficiency, allowing to prevent many diseases [5].

Classic massage is the most popular medical massage which uses the impact of mechanical and kinetic energy consisting in tissue deformation, which leads to proper body reactions. Massage consists of a complex of suitable techniques (grips) which, if performed in the correct order, result in physiological reactions of the organs and tissues [5]. Apart from classic massage, the techniques of which constitute the basis of almost all forms of massage, also specialist

massages are administered for esthetic or cosmetic purposes. A specialist massage is aimed at improving the functionality of the respective organs, systems and tissue structures. Examples include lymphatic drainage, segmental massage or connective tissue massage [10].

Oriental and relaxation massages are often performed in wellness salons. They offer a broad range of services. Oriental massages are usually closely connected to philosophy of the culture from which they originate. Oriental massages include: Chinese massage, Shiatsu massage, Ayurvedic massage, Watsu massage, Tibetan massage or Lomi Lomi massage [11].

The basis for each type of massage is touch, but in the case of the Lomi Lomi massage, the touch is unique and distinctive. Our skin is the most sensitive sensory channel. The tactile impressions flow from the skin to the brain, thus stimulating various levels and areas, starting from the brain stem, thalamuses, limbic system, and even parietal lobe - sensory cortex [12].

Physical contact provides stimulation for our bodies, and touching is particularly important for development. That is because it is the first sensation that we feel and the last one that we lose [12].

Touch stimulation constitutes a fundamental element of both physical and emotional well-being. It is considered to be an important medicinal measure, assisting in alleviating pain, reducing tensions, anxieties, stress, depression and improving the will to live. It is a particularly strong signal [12].

The discussed Lomi Lomi Nui ceremony is a massage, i.e. it is based on using beneficent touch, while being very unique. When giving a massage, the masseur mainly uses the soft parts of their forearms. One of the Hawaiian translations of the term Lomi Lomi is touch of a soft paw of a satisfied cat, which explains the main technique of the massage - movements using forearms. From the practical point of view, movements are the most important aspect. They should be repetitive, covering large parts of the body, smooth, long and leisurely. That massaging technique allows the patient to calm down and relax in a phenomenal way, thus leading to a state of bliss of sorts. The contact with the patient during the whole massage and the long time of the procedure (between 90 and 120 minutes, which is different from other forms of massage), additionally intensify the above-mentioned sensations [12].

The past publications on massage have not presented its impact on changing body hydration or the level of extracellular water. By pressing on muscles, the local effects of the massage cause flows of body fluids [13] The impact of a single classic massage and of a single Lomi Lomi massage on body hydration was examined.

Water is a necessary element of our bodies. It provides cohesion at cellular, tissue and organ levels [14].

In our bodies, there are two main water spaces: intracellular and extracellular. In the intracellular space, a human body contains ca. 28 liters of water, i.e. ca. 40% of the body mass, or 66% of total body water. In the extracellular space, a human body contains ca. 14 liters of water, i.e. ca. 20% of the body mass, or 34% of total body water. In the latter, it is

divided into water inside circulatory and lymphatic vessels (25%, also referred to as plasma) and interstitial fluid (75%). It may be differentiated into intravascular space of the water, i.e. plasma (ca. 4 liters) and interstitial space of the capacity of ca. 10 liters. Apart from that, water is present in the alimentary canal, pleural cavities, urinary tracts, bone tissues and bones [14].

Body content varies and depends on one's age. With aging, the body may lose between 4 and 6 liters of total water. [15]

The highest concentration of water in a body is in newborns (75% of their body mass). In the body of an adult person, water constitutes ca. 60% of body mass and should be maintained continuously at a stable level. This means that the water balance should be zero. Positive balance appears only in pregnant women and when growing up. In the elderly, water constitutes just ca. 50% due to decrease in non-fat body mass [14, 15].

On account of the differences in the content of fat and non-fat body mass, there are also observable some differences in body content depending on gender. Fat tissue contains only 5% of water, while muscle tissue - 75%, and as women have genetically more fat tissue and less muscle tissue, their bodies have less water, while the situation is reverse for men [15].

In women of reproductive age (sexually mature), water constitutes 55-60% of body mass. The intracellular water reservoir contains almost 57% of its total capacity (ca. 30 l). Extracellular space contains ca. 15 liters of water (33%), of which 14% in interstitial space, 4% in plasma, 1% in intercellular space and 1% in the lymph. The bodies of men contain more muscle tissue, in which water comprises 75-80%. The total water in the body is present inside cells in 2/3 and only 1/3 of water is present in extracellular space [15].

Aim

The objective of this study is comparison of the impacts of classic massage and Lomi Lomi Nui massage in treating stress-induced mental and physical tiredness. Another objective is to compare the impact of massage on body hydration and on the level of extracellular water.

Materials and Research Methodology

The study was conducted from 23 October 2017 to 27 October 2017 in the Pabianice Rehabilitation Center located at Jana Pawła II street No. 68 in Pabianice in the Łódzkie province, and covered 30 persons. Patients were randomly divided into two groups.

The first group consisted of 15 people who were subject to a classic massage of the whole body. Before the massage, patients' body mass and height were measured, and then they underwent body hydration analysis and extracellular water analysis using bioelectrical impedance. The second impedance measurement was conducted right after the massage. The group consisted of 8 women and 7 men. The average age of the women in the first study group was 38, and men - 48. The oldest woman was 55, and the oldest man - 61. The youngest woman was 25, and the youngest man - 35.

The second group also included 15 people who underwent a Lomi Lomi massage of the whole body. Before the massage, patients' body mass and height were measured. Then, they underwent body hydration analysis and extracellular water analysis using bioelectrical impedance. The second impedance measurement was conducted right after the massage. The group consisted of 8 women and 7 men. The average age of the women in the first study group was 44, and men – 47. The oldest woman was 65, and the oldest man – 62. The youngest woman was 28, and the youngest man – 25.

The body hydration level of extracellular water were measured using the Biacorus RX 400 device. The first measurement was performed before the massage. The patients were asked to take off their jewelry, belts and to put away electronic devices. The massage was given in the lying position, with upper limbs along the body. Four self-adhesive electrodes, installed on the dorsal surface of the hands and feet were used to make detailed measurements in 4 segments of the body.

Then, each patient in group I was given a 40-minute classic massage of the whole body. It consisted of classic massage techniques - stroking, rubbing, kneading, patting, vibrating, shaking and rolling. The massage was performed in groups, starting from feet, lower limbs, buttocks, back and frontal parts of the lower limbs, abdomen and upper limbs. Then, right after the massage, the patients underwent body hydration analysis and extracellular water analysis using bioelectrical impedance.

The second group of fifteen people was given a Lomi Lomi massage. The massage included the technique of using forearms – stroking, pounding and kneading. The whole massage was given on the frontal and back parts of the body, using smooth movements covering the whole body.

After the massage and body water content examination, the patients were asked to fill in anonymous surveys which consisted of closed-ended questions with multiple possible answers. The patients were asked to indicate:

- their impressions during the classic and Lomi Lomi massages,
- impressions right after the massage,
- assessment of massage effectiveness in alleviating mental and physical tiredness caused by stress, on a scale from 1 to 5.

Results

Table 1. Assessment of the effects of classic massage and Lomi Lomi massage in alleviating stress-induced mental and physical tiredness right after the massage, on a scale from 1 to 5, where 1 is no effects and 5 – superb effects

	Classic massage		Lomi Lomi Massage		P
	N	%	N	%	
1	1	6.7	0	0	p = 0.4474
2	2	13.3	1	6.7	
3	0	0	1	6.7	
4	3	20	2	13.3	
5	9	60	11	73.3	
Total	15	100	15	100	

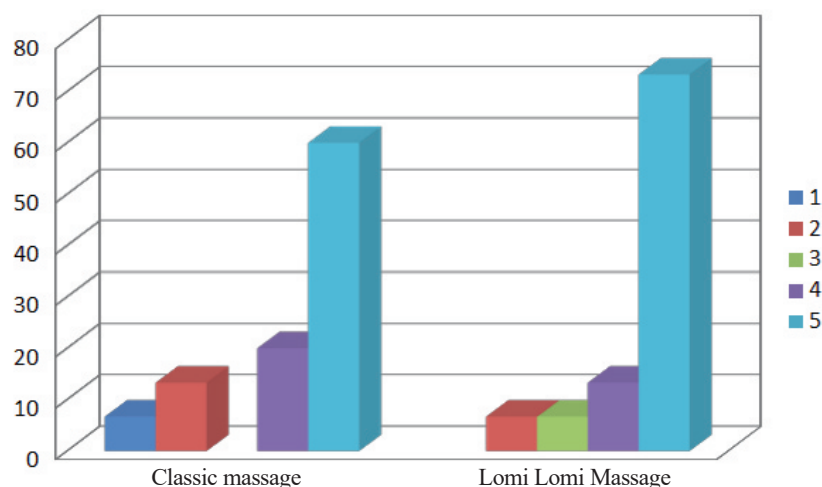
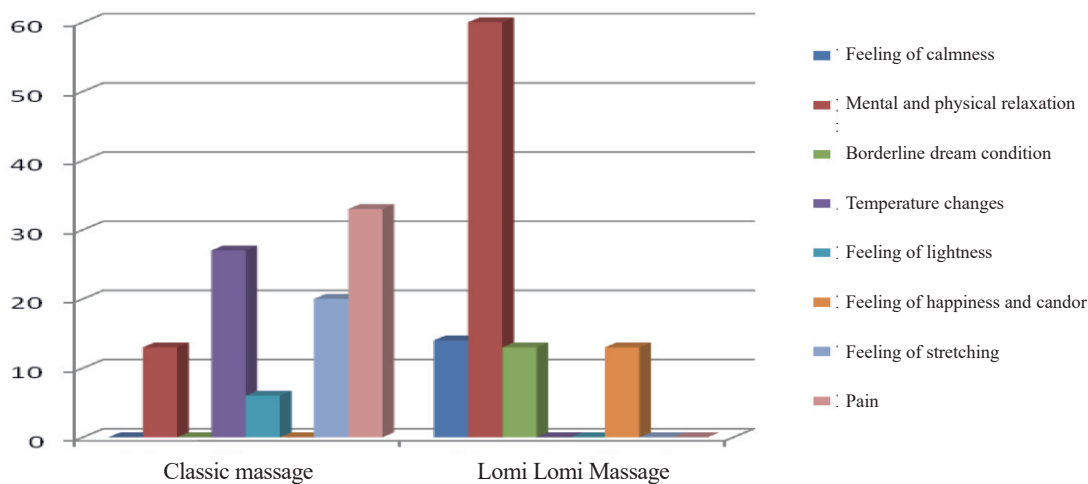


Fig. 1 Assessment of the effects of classic massage and Lomi Lomi massage in alleviating stress-induced mental and physical tiredness right after the massage, on a scale from 1 to 5, where 1 is no effects and 5 - superb effects

There is no statistically relevant relationship between the applied massage and the assessment of the massage in alleviating mental and physical tiredness. Table 1 and figure 1 demonstrate that the ten persons who underwent classic massage marked 5 (60%), indicating superb effects. In turn, eleven patients (73.3%) who were given the Lomi Lomi massage, marked 5.

Table 2. Experiences during the massages

	Classic massage		Lomi Lomi Massage		P
	N	%	N	%	
Feeling of calmness	0	0	2	13,3	p = 0.0031
Mental and physical relaxation	2	13	9	60	
Borderline dream condition	0	0	1	6.7	
Temperature changes	4	27	0	0	
Feeling of lightness	1	6	0	0	
Feeling of happiness and candor	0	0	3	20	
Feeling of stretching	3	20	0	0	
Pain	5	33	0	0	
Total	15	100	15	100	



Ryc. 2. Przeżycia towarzyszące podczas masaży

There is a statistically relevant relationship between the massage and the experiences.

Table 2 and figure 2 demonstrate that the five persons who underwent classic massage, indicated they felt pain (33.3%). Three persons declared the feeling of stretching (33.3%). Four persons felt temperature changes (26.7%). Two persons experienced mental and physical relaxation (13.3%). One person marked the feeling of lightness (6.7%). Nine persons who were given the Lomi Lomi Massage felt mental and physical relaxation during the massage (60%). Three persons (20%) felt happiness and candor. Two persons felt calm (13.3%). One person marked borderline dream condition (6.7%).

Table 3. Sensations right after the classic of Lomi Lomi massage

	Classic massage		Lomi Lomi Massage		P
	N	%	N	%	
Relaxation	2	13.3	4	26.7	p = 0.0145
Relaxation and pain reduction	4	26.7	1	6.7	
Calmness	0	0	5	33.2	
Feeling of harmony and balance	0	0	4	26.7	
Increased range of movements	2	13.3	0	0	
Improved blood flow	4	26.7	0	0	
Feeling of lightness	3	20	1	6.7	
Total	15	100	15	100	

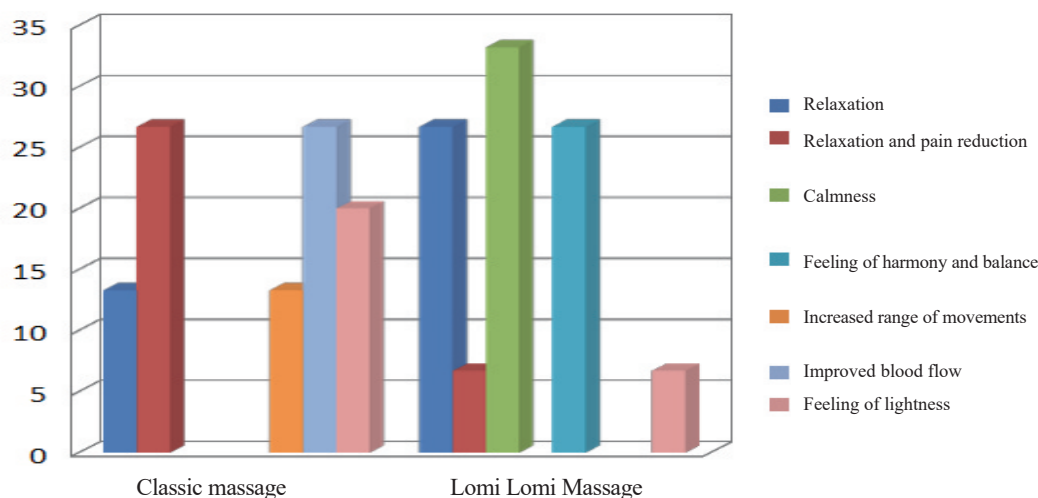


Fig. 3. Sensations right after the classic of Lomi Lomi massage

There is a statistically relevant relationship between the applied massage and the sensations right after the massage. Table 3 and figure 3 demonstrate that the four persons who underwent classic massage indicated, right after the massage, that they felt muscle relaxation and a decrease in pain (26.7%). Four persons marked improved blood flow (26.7%). Three persons marked the feeling of lightness (20%). Two persons declared increased range of movements (13.3%). Two persons were relaxed (13.3%).

Five persons (33.2%) who were given the Lomi Lomi Massage, felt calmness. Four persons answered they experienced the feeling of harmony and balance (26.7%). For persons said they felt relaxed (26.7%).

Table 4. Difference between the average change in body hydration in women and men given a classic or Lomi Lomi massage

	Classic massage		Lomi Lomi Massage	
	Women	Men	Women	Men
Body hydration	4.3%	6.10%	0.60%	1%

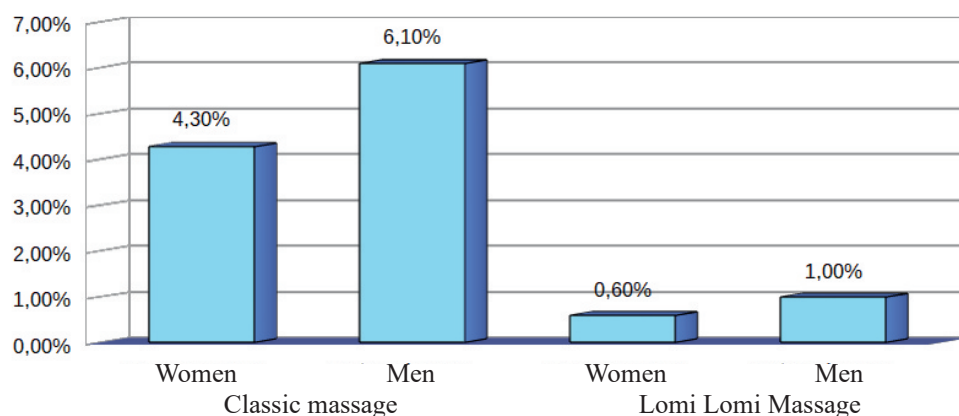


Fig. 4 Difference between the average change in body hydration in women and men given a classic or Lomi Lomi massage

Table 4 and figure 4 present the difference in body hydration after the classic and Lomi Lomi massages.

After the classic massage, the women demonstrated an average decrease in body water content by 4.3%, while men – by 6.1%. After the Lomi Lomi massage, the women demonstrated a decrease in body hydration level by 0.6%, and men – by 1%.

Table 5. Difference between the average change in extracellular water in women and men given a classic or Lomi Lomi massage

	Classic massage		Lomi Lomi Massage	
	Women	Men	Women	Men
Extracellular water	1.5 l	1.4 l	0.8 l	1.2 l

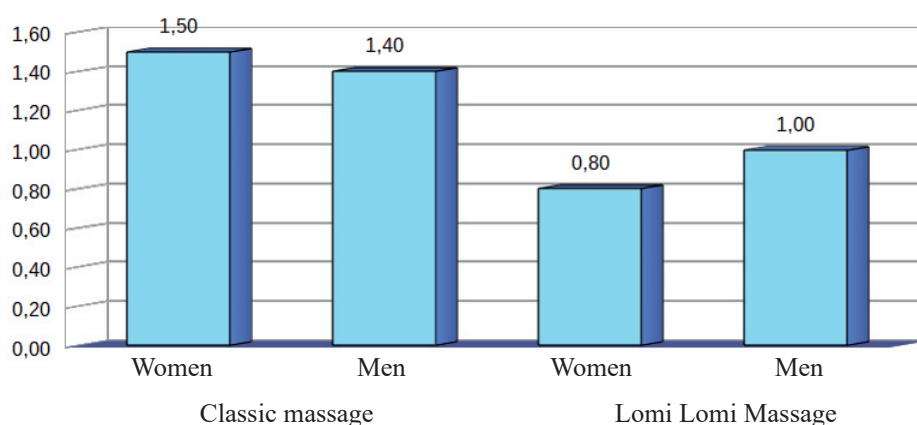


Fig. 5. Difference between the average change in extracellular water in women and men given a classic or Lomi Lomi massage

Table and chart 5 present the average change in the level of extracellular water in women and men given a classic or Lomi Lomi massage. After the classic massage, the women and men demonstrated an average decrease in extracellular water content by 1.5 liter. After the Lomi Lomi massage, the women demonstrated a decrease in extracellular water level by 0.8 liter, and men - by 1.2 liter.

Discussion

According to sources - massage is the oldest and simplest relaxation, rejuvenating and medicinal procedure and the most commonly used wellness technique [16].

In our times, massages are promoted in preventive treatment of diseases of affluence and in therapy of lesions in soft tissues resulting from long-lasting stress, as well as in negative emotional conditions [16].

Massage treatments are recommended for people who are exposed to stress, overworked and with emotional problems. A massage is to relax, calm down, increase body immunity and recover balance, make the tissues smoother and more flexible, and to bring back the joy of life [16].

According to Susan Mumfort, “massage is a form of organized touch, where hands, and sometimes other body parts, such as forearms or elbows, are used to move over the skin

and exert pressure on the muscles under the skin with a series of alternating movements, including stroking, rubbing, kneading and squeezing. It may be relaxing, stimulating, it affects the body, mind, mood and emotions" [17]

There is observable a subjective feeling of pain alleviation and improved mood; furthermore, a massage causes a feeling of relaxation and satisfaction. Some researchers also state that a person having a massage at first demonstrates a feeling of light tiredness which, however, disappears quickly, giving way to the feeling of relaxation, recovery of vitality and improvement of the general mental condition; they also mention elimination of stress, reduction in nervous tension and liquidation of emotional disorders (mainly as a result of reduction in the level of the stress hormone - hydrocortisol), which gives the feeling of mental comfort and improve the quality of life [18].

One of the most important elements of this study was the attempt at comparing the impact of the classic massage and Lomi Lomi Nui massage on the mental and physical condition of the patient.

No publications, either in Polish or English, have been found to present comparison between the impact of the above massages on the mental or physical condition or on the level of body hydration.

In turn, there have been found publications comparing the Swedish (classic) massage with acupuncture and individual kinesitherapy, with Thai massage (where no significant differences among the therapies were discovered) [18, 19].

Other authors compared the classic massage with aromatherapy massage, applied in the cases of pain of the spine, which allowed to determine that both the classic and aromatherapy massages demonstrate positive analgesic effects in treating the overload disease of the spine [20].

Chrzan et al. prepared studies on the impact of medical massage, including classic massage, on changing the parameters of arterial pressure. The results indicated that medical massages result in a decrease in the parameters in systolic pressure and heart rate in people suffering from arterial hypertension and that massage may result both in an increase or a decrease in the value of arterial pressure and heart rate, depending on the initial blood arterial pressure [21].

In another publication, H. Pędziwiatr used classic massage in order to examine its impact on people suffering from psychosomatic disorders. Noticeable changes appeared both at the somatic and mental levels. There was an improvement in the scope of respiratory mobility of the chest, and the scope of movements of the cervical spine was improved. An improvement in mental well-being resulted from the massage [22].

The publication connected with the Lomi Lomi massage was devoted to the impact of massage on reducing the signs of physical and mental tiredness. According to Wiśniewska "relaxation is the most effective, best and universal medicine for stress-induced ailments. The subjective feelings of patients after the massage were checked in order to examine the impact of the Hawaiian Lomi Lomi Nui massage on reducing the signs of physical and mental tiredness". According to the patients, the main effect of the massage was relaxation. The pains in the lower limbs and back disappeared, as did sleeping disorders [9].

According to Assmann: "Lomi Lomi Nui affects the physical, emotional and spiritual well-being of the person: at the physical level, the effects of the massage are based on subjective sensations of the persons being massaged. According to a little scientific evidence, and more according to the persons being massaged, the Lomi

massage has the following effects on human bodies: improved blood flow, smoother skin, resulting in general relaxation, lower muscle tension, alleviating ailments of the locomotor system, alimentary tract or urogenital system. At the mental and emotional level, the massage causes: relaxation, alleviates the feeling of tiredness, increases the level of life energy, of vitality" [12].

Conclusions

1. The classic and Lomi Lomi massages have positive effects in treating mental and physical tiredness in patients with episodes of stress. The difference in results was not statistically significant.
2. The Lomi Lomi massage was more pleasant than the classic massage, according to the patients, and had a better effect on their mental condition. The harmony and balance between body and spirit was recovered. Patients felt relaxed and calmed down. The difference in results was statistically significant.
3. The classic massage was more effective in treating pain and tense muscles. Right after the massage, the muscles were relaxed, while the blood flow and the range of movements of the joints - improved. The classic massage worked to a higher degree at the physical than at the mental level, but the patients who underwent it noted relaxation. The difference in results was statistically significant.
4. The classic massage and Lomi Lomi massage resulted in decrease in body hydration and extracellular water. However, the classic massage demonstrated a higher relationship, and a higher reduction was noticed than in the case of the Lomi Lomi massage.

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Piśmiennictwo/ References

1. Beszczyńska B., Rogalska J. „Reakcje na stres. Skrypt do ćwiczeń z fizjologii stresu”, Toruń 2004, str. 15, 18, 28.
2. Heszen-Niejodek I. „Teoria stresu psychologicznego i radzenia sobie.” W: Strelau J. (red.). Psychologia. Podręcznik akademicki. GWP, Gdańsk 2000; str. 3, 465–492.
3. Frączak, M. Kofta, „ Frustracja i stres psychologiczny”, w: „Psychologia” pod red. T. Tomaszewskiego, Warszawa 1976, PWN, str. 628 – 678
4. Huber L., Art.; „Style adaptacyjne do sytuacji stresowych w różnych grupach wiekowych, a choroby cywilizacyjne XXI wieku”, Wyższa Szkoła Nauk Humanistycznych i Dziennikarstwa w Poznaniu, Probl. Hig Epidemiol 2010; 91(2), str. 268-275.
5. Magiera L. „Automasaż Lecznicy, Teoria i Praktyka”, Kraków 1998, str.11,19,23,28.
6. Straburzyński G. Straburzyńska-Lupa A. „Fizjoterapia”, wyd. III, Wydawnictwo Lekarskie PZWL, Warszawa 2007, str. 670.
7. Rab – Przybyłowicz J. „Produkt turystyki medycznej”, Wydawnictwo Difin, Warszawa 2014, str. 27.
8. Kiljański, M., Pasek J., Piątkowski P. „WELLNESS SPA & ANTI – AGING” Redakcja naukowa: A. Sieroń, A. Stanek, G. Cieślak. Rozdział X – masaż. Wydawnictwo PZWL, Warszawa 2014, str. 190,192
9. Wiśniewska I., Bloch M. „Wpływ hawajskiego masażu Lomi Lomi Nui na złagodzenie objawów zmęczenia fizycznego i psychicznego organizmu”, zeszyty naukowe wyższa szkoła przedsiębiorczości, Wydawnictwo Publisher Warszawa 2015r., tom 2.
10. Śliwiński Z., Sieroń A. „WIELKA FIZJOTERAPIA” TOM 1, Elsevier Urban&Partner Wrocław 2014, str 45-48, 341-344.
11. Zborowski Adam „masaż klasyczny” wydanie II, Wydawnictwo AZ, Kraków 1998, str. 9, 50-67, 69.
12. Assmann K. „Lomi Lomi Nui, Świątynie i masaże z Hawajów” Katowice 2000, str. 21-23.
13. Kasperczyk T., Magiera L., Mucha D., Walaszek R. „Masaż z elementami rehabilitacji” Rehmed, Kraków 2006, str. 15-36, 46-55.
14. Załuska W. „Woda jako toksyna mocznikowa”, Forum Nefrologiczne, 2010;3(1), str.12-7.
15. Kokot F., Franek E. Zaburzenia gospodarki wodno-elektrolitowej. Myśliwiec. Choroby nerek. Wydawnictwo Lekarskie PZWL, Warszawa. 2008, str. 12.
16. Westhof E., Ernst E. „Geschichte der Massage” Deutsche Medizinische Wochenschrift 1994.
17. Mumford S. „Masaż jest ważnym czynnikiem pozwalającym na zapewnienie dobrego samopoczucia w sferze fizycznej, emocjonalnej oraz duchowej dla ludzi w każdym wieku”, D. Whichello Brown; Warszawa, 2006: s 15.
18. Field T., Hernandez-Reif M., Diego M., Schanberg S., Kuhn C.: „Cortisol decreases and serotonin and dopamine increase following massage therapy”, Int J Neurosci, vol. 115(10); 2005: s. 1397-1413.
19. Preyde M., Art; „Effectiveness of massage therapy for subacute low-back pain” :A randomized controlled trial, Canadian Medical Association Journal, v. 162, Issue 13, 27 June 2000, p. 1815-1820.
20. Ćwirlej A., Ćwirlej A., Gregorowicz-Cieślak H. „Masaż klasyczny i aromaterapeutyczny w bólach kręgosłupa” Przegląd Medyczny Uniwersytetu Rzeszowskiego Rzeszów 2005, str. 4, 366–371.
21. Chrzan S., Sapuła R., Soboń M. „Wpływ masażu leczniczego” Hygeia Public Health 2013; 48: str. 59-63.
22. Pędziwiatr H., Art.; „Psychosomatyczne aspekty wpływu terapii masażem leczniczym na chorych somatycznie” „Diagnostyka i leczenie/ sztuka leczenia. 2006; tom XIII nr 1-2: str. 9-8.