

fizjoterapia polska

POLISH JOURNAL OF PHYSIOTHERAPY

OFICJALNE PISMO POLSKIEGO TOWARZYSTWA FIZJOTERAPII

THE OFFICIAL JOURNAL OF THE POLISH SOCIETY OF PHYSIOTHERAPY

NR 1/2022 (22) DWUMIESIĘCZNIK ISSN 1642-0136

The impact of high body weight on children's aerobic capacity in the primary school age

Wpływ nadmiernej masy ciała na wydolność fizyczną dzieci w młodszym wieku szkolnym

Physical activity and patients with frailty syndrome
Aktywność fizyczna u pacjentów z zespołem kruchości

ZAMÓW PRENUMERATĘ!

SUBSCRIBE!

www.fizjoterapiapolska.pl

www.djstudio.shop.pl

prenumerata@fizjoterapiapolska.pl



mindray

healthcare within reach

ULTRASONOGRAFIA W FIZJOTERAPII



Autoryzowani dystrybutorzy

Mar-Med

+48 22 853 14 11

info@mar-med.pl

Ado-Med

+48 32 770 68 29

adomed@adomed.pl



MAR-MED

OD 1995 ROKU



ADO-MED

APARATURA MEDYCZNA

Fizjoterapeuta!

Problem zaczyna się u podstawy,
czyli od stóp.

Leczenie

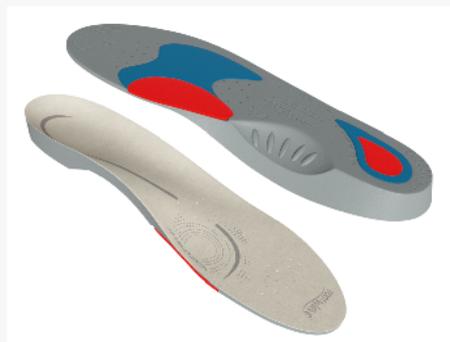
fizjoterapeutyczne bez
uwzględnienia **zdrowia stóp**
i **prawidłowej postawy** niesie
ze sobą poważne ryzyko
niepożądanych konsekwencji
biomechanicznych.

Zaufaj FootMedical!

Jesteśmy producentem, dystrybutorem
oraz ośrodkiem szkoleniowym
specjalizującym się w biomechanice kończyny
dolnej i jej zaopatrzeniu, szczególnie
w dynamiczne wkładki ortopedyczne.



CERTYFIKOWANE WYROBY MEDYCZNE
O POTWIERDZONEJ NAUKOWO SKUTECZNOŚCI



FootWave™

Dynamiczne wkładki
ortopedyczne dedykowane
najczęstszym schorzeniom stóp
(haluksy, płaskostopie, ostroga
piętowa, itp.). Dostępne również
dla dzieci!

www.footwave.pl



Vasyli Medical

Wkładki ortopedyczne
indywidualnie dopasowywane
do stopy pacjenta poprzez
termoformowanie i precyzyjne
kliny oraz peloty korekcyjne.

www.vasylimedical.pl



Digitsole Pro

Bezprzewodowe wkładki
diagnostyczne badające chód i bieg
pacjenta w całym cyklu (również fazy
przenoszenia i lotu!), w naturalnych
warunkach poruszania się, oparte
o sztuczną inteligencję w chmurze.

www.digitsole.pl

NOWOŚĆ W OFERCIE

ASTAR.

PhysioGo.Lite SONO

**NIEWIELKIE URZĄDZENIE
EFEKTYWNA TERAPIA ULTRADŹWIĘKOWA**

Zaawansowana technologia firmy Astar to gwarancja niezawodności i precyzji parametrów. Urządzenie, dzięki gotowym programom terapeutycznym, pomaga osiągać fizjoterapeucie możliwie najlepsze efekty działania fal ultradźwiękowych.

Głowica SnG to bezobrotowe akcesorium o dużej powierzchni czopa (17,3 cm² lub 34,5 cm² w zależności od wybranego trybu działania). Znajduje zastosowanie w klasycznej terapii ultradźwiękami, fonoforezie, terapii LIPUS i zabiegach skojarzonych (w połączeniu z elektroterapią).



wsparcie merytoryczne
www.fizjotechnologia.com



ul. Świt 33
43-382 Bielsko-Biała

t +48 33 829 24 40
astarmed@astar.eu

**POLSKI
PRODUKT**  **WYBIERASZ
I WSPIERASZ**

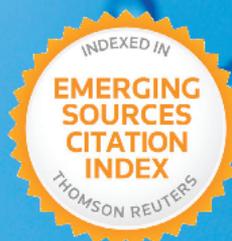
www.astar.pl

www.actabalneologica.pl

Acta Balneologica
jest naukowym czasopismem
Polskiego Towarzystwa Balneologii
i Medycyny Fizykalnej.
Ukazuje się od 1905 roku.

Na łamach kwartalnika
publikowane są recenzowane
prace z zakresu
balneologii, bioklimatologii,
balneochemii, hydrogeologii
i medycyny fizykalnej
– fizjoterapii, krioterapii,
kinezyterapii, presoterapii,
a także rehabilitacji.

Ze względu na poruszaną tematykę
jest wyjątkowym czasopismem
nie tylko w skali kraju,
ale i Europy.



Prenumerata roczna kosztuje 150 zł.
Dla członków PTBiMF obowiązuje cena obniżona - 60 zł.
Koszty wysyłki na terenie kraju wliczone w cenę prenumeraty.
Ceny zawierają 5% VAT.

Zamówienia prenumeraty i pytania prosimy kierować na adres:

prenumerata@wydawnictwo-aluna.pl

Wydawnictwo ALUNA

Z.M.Przesmyckiego 29

05-510 Konstancin-Jeziorna

tel. 22 245 10 55 w godz. 9-15

FUNKCYJNA BIELIZNA LECZNICZA

PRZECIWŻYLAKOWA

Przeciwwylakowe wyroby pończosznice włoskich producentów, bardzo skuteczne i niezwykle eleganckie. Dostępne **w I, II oraz III klasie kompresji** w wielu modelach, w różnym stopniu przezroczystości (m. in. wyjątkowo przezroczyste w II kl. ucisku), w szerokiej gamie kolorystycznej, w różnych wersjach długości, z palcami zamkniętymi lub otwartymi

- podkolanówki
- pończochy
- legginsy
- rajstopy
- rękawy kompresyjne

ANTYCELLULITOWA, NA LIMFODEMIĘ I LIPODEMIĘ

Bielizna i odzież wykonana jest z mikrofibry. Unikalny splot nawet przy najmniejszym ruchu wywołuje **efekt masażu**. Działanie stymuluje cyrkulację podskórną i drenaż limfatyczny. Prowadzi to do poprawy jakości skóry

- z włókna emana®
- z kofeiną i wit. E
- z nanosrebrem

NA NIETRZYMANIE MOCZU

Wyroby medyczne **wielokrotnego użytku** z dyskretną stałą wszywką o właściwościach chłonnych. Polecane jako codzienna bielizna gwarantująca ochronę przed przemakaniem - 100% absorpcji cieczy, zapewniająca całkowitą suchość warstw: zewnętrznej i wewnętrznej

- do wielokrotnego prania (min. 100 prań)

ARTCOLL
M E D I C A L E

artcoll.pl

e-sklep@artcoll.pl

tel. 22 720 35 96

+48 510 160 100



Polski producent MASAŻERÓW do stóp i ciała



infolinia: 500 238 037

www.tylmed.pl



Najlepsze laski do chodzenia

Zamów on-line na: www.swiatlasek.pl
Wszelkie informacje pod numerem: 730 101 101

Dr. Comfort®



APROBATA
AMERYKAŃSKIEGO
MEDYCZNEGO
STOWARZYSZENIA
PODIATRYCZNEGO

Nowy wymiar wygody.

Obuwie profilaktyczno-zdrowotne
o atrakcyjnym wzornictwie



WYRÓB
MEDYCZNY

**Stabilny, wzmocniony
i wyścielany zapętek**
Zapewnia silniejsze
wsparcie łuku
podłużnego stopy

**Miękki, wyścielany
kołnierz cholewki**
Minimalizuje podrażnienia

Wyścielany język
Zmniejsza tarcie
i ulepsza dopasowanie

Lekka konstrukcja
Zmniejsza codzienne
zmęczenie

**Antypoślizgowa,
wytrzymała podeszwa
o lekkiej konstrukcji**
Zwiększa przyczepność,
amortyzuje i odciąża stopy

**Zwiększona
szerokość i głębokość
w obrębie palców
i przodostopia**
Minimalizuje ucisk
i zapobiega urazom

**Wysoka jakość materiałów
- oddychające siatki i naturalne skóry**
Dostosowują się do stopy,
utrzymują je w suchości
i zapobiegają przegrzewaniu

Trzy
rozmiary
szerokości

Podwyższona
tęgłość

Zwiększona
przestrzeń
na palce

**Ochronna przestrzeń
na palce - brak szwów
w rejonie przodostopia**
Minimalizuje możliwość zranień

WSKAZANIA

- haluksy • wkładki specjalistyczne • palce młotkowate, szponiaste • cukrzyca (stopa cukrzycowa) • reumatoidalne zapalenie stawów
- bóle pięty i podeszwy stopy (zapalenie rozciągniętej podeszwy - ostroga piętowa) • płaskostopie (stopa poprzecznie płaska)
- bóle pleców • wysokie podbicie • praca stojąca • nerwiak Mortona • obrzęk limfatyczny • opatrunki • ortozy i bandaże • obrzęki
- modzele • protezy • odciski • urazy wpływające na ścięgna, mięśnie i kości (np. ścięgno Achillesa) • wrastające paznokcie



ul. Wilczak 3
61-623 Poznań
tel. 61 828 06 86
fax. 61 828 06 87
kom. 601 640 223, 601 647 877
e-mail: kalmed@kalmed.com.pl
www.kalmed.com.pl

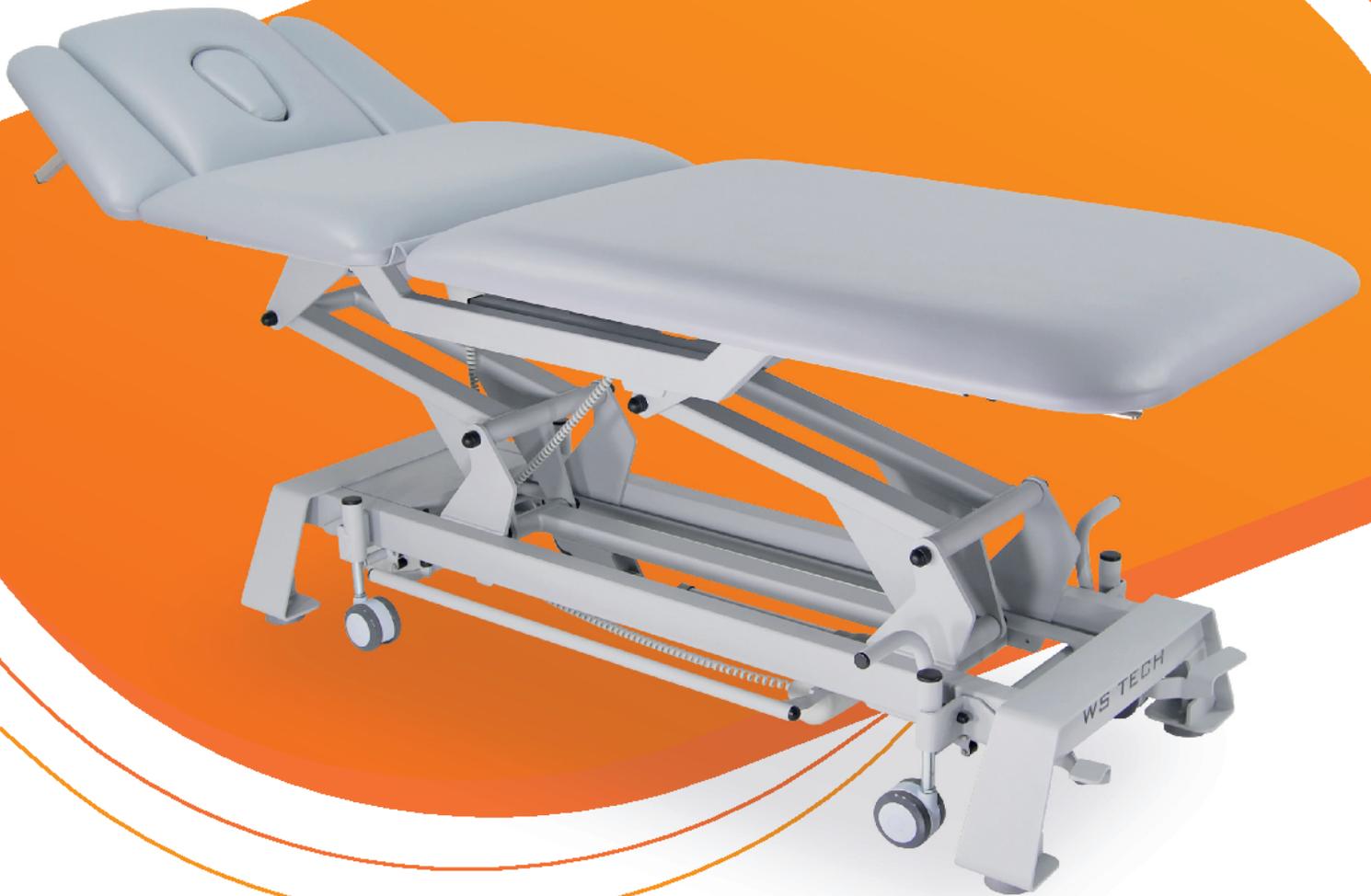


www.butydlazdrowia.pl

www.dr-comfort.pl

W S T E C H

Producent **sprzętu do rehabilitacji i masażu**
oraz **wyposażenia gabinetów medycznych**



WS TECH S.C.

ul. Okulickiego 43
38-500 Sanok

www.wstech.eu

biuro@wstech.eu

ZADZWOŃ



13 464 44 49

ZAMÓW ON-LINE



sklep.wstech.eu

REHA TRADE SHOW 3

14.04.2022 | PGE NARODOWY, WARSZAWA
TARGI I KONFERENCJA BRANŻY REHABILITACYJNEJ

- STREFA WYSTAWIENNICZA
- PONAD 60 FIRM Z BRANŻY REHABILITACYJNEJ
- 15 SEKTORÓW WYSTAWCÓW
- KONFERENCJA EDUKACYJNA
- WARSZTATY SPECJALISTYCZNE
- BUSINESS MATCHING

1 DZIEŃ BIZNESOWYCH SPOTKAŃ | PRESTIŻOWA LOKALIZACJA | 3 EDYCJA WYDARZENIA

WIĘCEJ INFORMACJI
WWW.REHATRADE.PL

ZŁOTY SPONSOR:

NORAX
medical

PARTNER STRATEGICZNY:

 Technomex

PARTNER MEDIALNY:

REHA Biznes.pl





KALMED
Iwona Renz, Poznań

ARTROMOT®
WYŁĄCZNY PRZEDSTAWICIEL
WWW.KALMED.COM.PL



SPRZEDAŻ I WYPOŻYCZALNIA ZMOTORYZOWANYCH SZYN CPM ARTROMOT®

Nowoczesna rehabilitacja CPM stawu kolanowego, biodrowego, łokciowego, barkowego, skokowego, nadgarstka oraz stawów palców dłoni i kciuka.



ARTROMOT-H



ARTROMOT-F



ARTROSTIM
FOCUS PLUS

ARTROMOT-K1 ARTROMOT-SP3 ARTROMOT-S3 ARTROMOT-E2

Najnowsze konstrukcje ARTROMOT zapewniają ruch bierny stawów w zgodzie z koncepcją PNF (Proprioceptive Neuromuscular Facilitation).

KALMED Iwona Renz tel. 61 828 06 86
ul. Wilczak 3 faks 61 828 06 87
61-623 Poznań kom. 601 64 02 23, 601 647 877
www.kalmed.com.pl kalmed@kalmed.com.pl

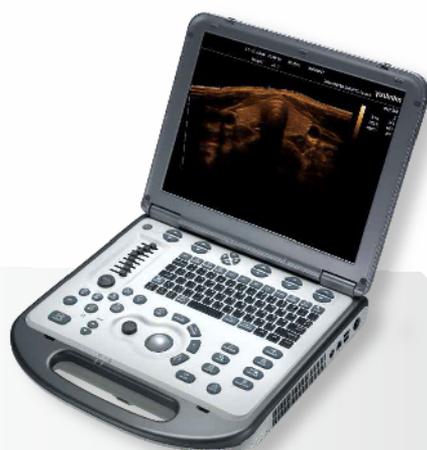
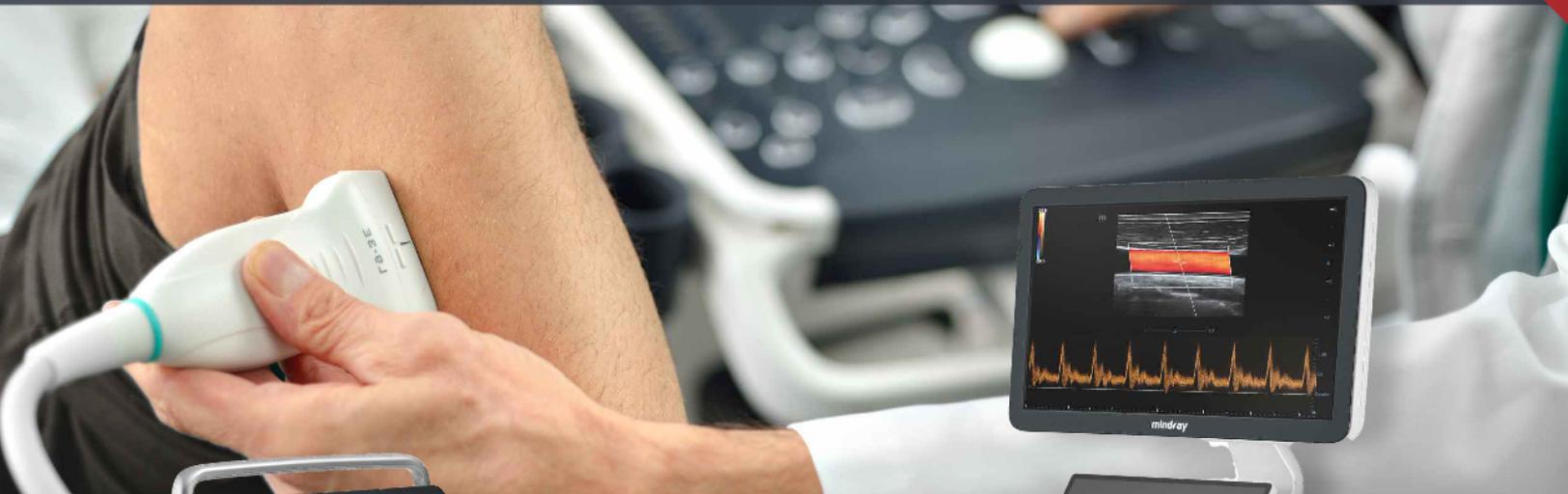
Serwis i całodobowa
pomoc techniczna:
tel. 501 483 637
service@kalmed.com.pl

mindray

healthcare within reach

ULTRASONOGRAFIA

W FIZJOTERAPII



Autoryzowani dystrybutorzy

Mar-Med

+48 22 853 14 11

info@mar-med.pl

Ado-Med

+48 32 770 68 29

adomed@adomed.pl



MAR-MED

OD 1995 ROKU



ADO-MED

APARATURA MEDYCZNA

EIE

OTWOCK



PRODUCENT
NOWOCZESNEJ
FIZYKOTERAPII

Jesteśmy z Wami od 1986r.

Elektroterapia • Laseroterapia Magnetoterapia • Ultradźwięki Suche kąpiele CO₂

SKANER
LASEROWY
*nowej
generacji*



Sprawdź naszą ofertę na
www.eie.com.pl

Elektronika i Elektromedycyna Sp.J.
05-402 OTWOCK, ul. Zaciszna 2
tel./faks (22) 779 42 84, tel. (22) 710 08 39
malew@eie.com.pl, www.eie.com.pl



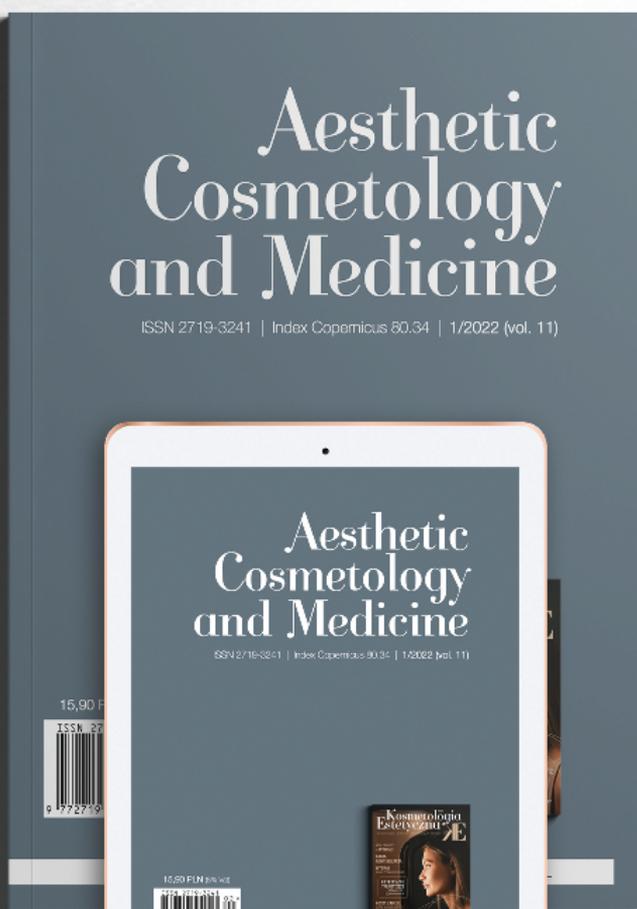
System
zarządzania
ISO 13485:2016



www.tuv.com
ID 000025935

Choose
your version
aestheticcosmetology.com

Wybierz
wersję dla siebie
kosmetologiaestetyczna.com



AC&M
Aesthetic Cosmetology
and Medicine

KE
Kosmetologia
Estetyczna

Reha INNOVATIONS

13-14.05.2022,
Kraków



Fizjoterapia



Nowoczesna
diagnostyka



Odnowa
biologiczna

Zeskanuj kod



i kup bilet na targi!

Sprawdź także:

Reha A K A D E M I A
INNOVATIONS

Bezpłatne webinaria, podcasty,
wykłady otwarte oraz certyfikowane
warsztaty z ekspertami.

www.rehainnovations.pl




Targi
w Krakowie



Rok założenia firmy 1996
www.butterfly-mag.com
tel. 85 743 22 21
kom. 603 299 035



BIOMAGNETOTERAPIA W WYROBACH MEDYCZNYCH „ORT BUTTERFLY”

- BEZ BÓLU, STRESU I BEZ TABLETEK!
- LECZYSZ SIĘ NATURALNIE
- ŚPIĄC, PRACUJĄC, WYPOCZYWAJĄC...
- USUWASZ BÓL I JEGO PRZYCZYNĘ!
- TERAPIA STARA JAK ŚWIAT!
- SPRAWDZA SIĘ I DAJE RADĘ W NIERÓWNEJ WALCE Z PANDEMIĄ – COVID 19!

REGULARNA BIOSTYMULACJA MAGNETYCZNA!

Ogromny potencjał Natury w zwalczaniu smogu energetycznego i autooksydacji, będącej główną przyczyną wszystkich chorób cywilizacyjnych!

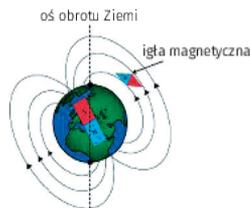
Najstarsza Terapia Świata wspomagająca każdą formę leczenia!

Uważa się do dziś, że bez niej nie da się wyleczyć żadnej choroby do końca!

Naturalna Terapia Magnetyczna Twoje Zdrowie, Twoja Uroda, Odporność i Sprawność do późnej starości! **Wypróbuj** – gdy zawiodły już inne terapie!



Biomagnetoterapia inicjuje ożywienie komórkowe, oczyszcza i „odmładza” krew, podnosząc witalność całego organizmu, który uruchamia intuicyjne procesy obronne, znosząc dyskomfort powodowany bólem, urazem lub stresem, bez konieczności ostrej dawki leków chemicznych...



DLACZEGO CHORUJEMY?

Natężenie sztucznych pól elektromagnetycznych zwiększyło się 100 tys. razy! Naturalne pole magnetyczne Ziemi zmniejszyło swą moc o połowę!



BIOMAGNETYZM - jako antidotum; jedyne i absolutne; na cancerogenną ekspansję „smogu energetycznego”!

ZŁOTE LOGO Międzynarodowych Targów Rehabilitacja Łódź IX/2007



Jestem osobistym królikiem doświadczalnym! I żyję – realizując 25 lat wciąż nowe i śmielsze pomysły w wykorzystaniu tej **boskiej energii** naturalnych magnesów! Dzięki nim pokonuję dziś niezliczone przeszkody i przeciwności losu z nieznaną mi przedtem energią i determinacją! To moja pasja! I przeznaczenie!

Najnowsza opinia klienta:

Komentarz ten jest moim osobistym świadectwem zadowolenia z produktów biomagnetycznych „Ort Butterfly”, których używam od 20. lat! Zastanawiam się, zwłaszcza nad fenomenem poduszki (określenie nie jest przypadkowe) zwyczajnie; nie wyobrażam sobie snu i wypoczynku bez magnetycznej „Ort Butterfly” – pod głową! Jej ergonomiczny, przyjazny dla głowy i szyi kształt sprawia, że wysypiam się „po królewsku”. Zabieram ją również ze sobą w bliższe i dalsze podróże! Czyż gdyby była to zwyczajna poduszka, fundowałbym sobie dodatkowy bagaż? Wychwalam więc ją od zarania, polecam i rekomenduję, bo jest tego warta! Bez niej nie wyobrażam sobie prawdziwie relaksacyjnego snu i błogiego, kojącego wycieczynku! Dziękuję, że ją Pani stworzyła!

J. Szw. Działdowo (maj 2020)

PS Poduszki „Ort Butterfly” to prawdziwe arcydziełka robione z wyczuciem i sercem... jak rzeźby Michała Anioła... Polecam wszystkim!

jednoosobowe lub dwuosobowe
kriokomory do terapii ogólnoustrojowej

icelab
VIP | VIP+



URZĄDZENIA DO REHABILITACJI, KRIOTERAPII, KINEZYTERAPII, FIZYKOTERAPII, HYDROTERAPII

elecpol ul.Łużycka 34a, 61-614 Poznań, 61 825 60 50, biuro@elecpol.pl, www.elecpol.pl

hydrosun[®]

gymna

Zimmer
MedizinSysteme

UNBESCHIEDEN
Baden-Baden



W trosce o Seniora...

Naturalne Środki Czystości



PIELĘGNACJA / PROFESJONALIZM / ŚWIADOMOŚĆ
WSPARCIE / SZACUNEK

 **OVER
CLEAN**

www.over-clean.pl

Use of selected soft tissue therapy techniques in menstrual pain syndromes

Wykorzystanie wybranych technik terapii tkanek miękkich w zespołach bólu menstruacyjnego

Łukasz Skibiński^(A,B,C,D,E,F), Jolanta Rojczyk-Chmarek^(C,D,E,F,G)

Wydział Fizjoterapii, Akademia Wychowania Fizycznego im. Jerzego Kukuczki /
Faculty of Physiotherapy, Jerzy Kukuczka Academy of Physical Education, Katowice, Poland

Abstract

Introduction. One of the more common ailments of young women in the reproductive period is dysmenorrhea (MSM). More than 50% of women complain of menstrual pain, and 10% of them are forced to give up their daily activities for the first 1-3 days of the menstrual cycle.

Objective of the work. The aim of the research was to check to what extent the selected techniques on soft tissues in strictly defined places will reduce the intensity of pain sensations occurring in the painful menstruation syndrome.

Material and methods. 23 women aged 19 to 48 participated in the study. Women with cyclical IBM-related pains that had been repeated for at least a year were invited to the study. Pain complaints were examined according to the VAS scale, which allows the assessment of pain on a scale of 1-10. Each visit began with the completion of a questionnaire. Thanks to it, pain sensations and other ailments or observations related to the menstrual cycle for 3 consecutive menstrual cycles were checked.

Results. The most common complaints were pain in the area of the lower abdomen, lumbar spine or head. There was a positive difference in the assessment of pain scale, pain duration and the assessment of improvement in health during menstruation. There was also a significant decrease in pain medication intake from 86 at the first treatment meeting, where only 21 was indicated at the last meeting.

Conclusions. The results of the presented studies have shown that the therapy of soft tissues at specific points has a positive effect on chronic menstrual pain and the reduction of painkillers. The author, through a detailed analysis of the subject of UBM, hopes that the presented content will increase the prevention and awareness of patients in the subject of UBM.

Key words:

menstruation, menstrual pain, visceral therapy, menstrual cycle, soft tissue therapy

Streszczenie

Cel pracy. Celem badań było sprawdzenie, w jakim stopniu wybrane techniki na tkankach miękkich w ściśle określonych miejscach wpłyną na zmniejszenie intensywności odczuć bólowych występujących w ZBM.

Materiał i metodyka. W badaniach wzięły udział 23 kobiety w przedziale wiekowym od 19 do 48 lat. Do badań zostały zaproszone kobiety, u których obserwowane były cykliczne bóle związane z ZBM, powtarzające się minimum od roku. Dolegliwości bólowe były badane wg skali VAS, która umożliwia ocenę występującego bólu w skali 1–10. Każda z wizyt rozpoczynała się wypełnieniem ankiety. Dzięki niej sprawdzane były odczucia bólowe oraz inne dolegliwości związane z cyklem menstruacyjnym przez 3 kolejne cykle menstruacyjne.

Wyniki. Najczęściej doświadczanymi dolegliwościami był ból w rejonie podbrzusza, odcinka lędźwiowego kręgosłupa czy głowy. Zauważono pozytywną różnicę w ocenie skali bólu, długości trwania bólu oraz ocenie poprawy stanu zdrowia w trakcie menstruacji. Zanotowano znaczący spadek przyjmowanych środków przeciwbólowych z 86 na pierwszym spotkaniu terapeutycznym, a tylko 21 zostało wskazanych na spotkaniu ostatnim.

Wnioski. Wyniki przedstawionych badań wykazały, iż terapia tkanek miękkich w określonych punktach ma pozytywny wpływ na przewlekłe bóle menstruacyjne oraz ograniczenie przyjmowanych środków przeciwbólowych. Autor poprzez analizę tematyki ZBM ma nadzieję, iż przedstawione treści wpłyną na zwiększenie profilaktyki oraz świadomości pacjentek w tematyce ZBM.

Słowa kluczowe:

menstruacja, ból menstruacyjny, terapia wisceralna, cykl menstruacyjny, terapia tkanek miękkich

Introduction

Dysmenorrhea (DM) is a common complaint among young women in their reproductive years as evidenced by questions they ask about coping with menstrual pain and related symptoms [1]. Painful periods result from cyclic uterine contractions and affect the quality of life [2]. Xholli et al. [3] suggested that menstrual pain was a consequence of intense uterine contractions aimed to evacuate menstrual flow through the cervix, and, that it might be related to cervix elasticity [3]. Oladosu et al. [4], in turn, believe that distension of visceral organs, including the uterus, might cause involuntary skeletal muscle activity and referred pain. Menstrual pain may start during puberty. It persists from 8 to 72 hours being the most severe on the first or second menstrual day [5]. Many young women who begin to menstruate might therefore get into the habit of using pain-relief medicines, which can lead to severe and long-lasting complications [6].

Statistical data on the prevalence of dysmenorrhea differ considerably, thus emphasizing a wide variety of factors that may underlie this condition. Contractile function of the uterus, uterine blood flow or abnormalities within the female reproductive tract are just a few among the possible causes of severe menstrual cramps. Clinically, dysmenorrhea has been subcategorized into two types, i.e., primary and secondary.

Mrugacz [7] defines primary dysmenorrhea as "excessive uterine contractility and related menstrual pain without a detectable pathology within the lesser pelvis." Secondary dysmenorrhea is diagnosed when "menstrual pain can be related to an underlying disease, disorder or structural abnormality either within or outside the uterus." Secondary dysmenorrhea is less prevalent and, as already mentioned, may be associated with chronic inflammation within the lesser pelvis, uterine fibroids, endometriosis or congenital / acquired reproductive system pathologies.

Despite the progress in diagnosis, treatment and prevention of dysmenorrhea, the direct cause of this severe monthly discomfort remains unclear. Women begin to suffer a few hours before or at the onset of menstrual bleeding. Pain is the predominant symptom frequently accompanied by digestive problems (e.g. food cravings or a general increase in appetite), irregular heartbeat or neurovegetative symptoms (e.g. abnormal increase in sensitivity to various stimuli). Menstrual pain can be experienced as low abdominal contractions or paresthesias in the lower back, sacral or femoral region.

Concomitant complaints include emotional distress, headaches, nausea, vomiting, breast swelling and tenderness or skin changes. Papers regarding the etiology of dysmenorrhea present a multitude of facts and

hypotheses, which are frequently mutually exclusive. Although numerous authors have offered methods aimed to relieve symptoms associated with this condition, none has proved utterly effective. Hence, it is important to develop a therapy to help women go through this stressful period of severe and debilitating pain. Sapolsky emphasized that short-term stress could have devastating consequences and deleterious chronic effects [8].

Stress can alter the menstrual cycle and affect the severity and quality of menstrual pain as well as duration and amount of menstrual flow [9].

MacRae noted that unyielding thoughts about menstruation-related pain or the cycle itself might lead to embarrassment, decreased mobility and social / religious limitations. Self-confidence, self-efficacy and school/academic performance may also be affected [10, 11]. The word pain has been defined as "unpleasant sensory and emotional experience associated with actual or potential tissue damage" [12].

Numerous researchers attribute the pain of primary dysmenorrhea to changes in blood supply to the uterus. The authors of a paper entitled "*Etiopatogeneza zespołu bolesnego miesiączkowania*" ("Etiopathogenesis of dysmenorrhea") conclude that "...in patients suffering from dysmenorrhea, uterine hyperactivity might cause excessive compression on uterine vessels resulting in ischemia and pain" [7].

However, the reverse cannot be excluded, i.e., a decrease in blood supply to reproductive organs might lead to local ischemia with resultant hypoxia and menstrual pain. Hence, local relaxation of anatomical regions associated with menstrual cycle may have an immediate beneficial effect on blood supply to an organ or related structures (as well as drainage thereof). Unfortunately, in secondary dysmenorrhea, the most efficient intervention is the excision of the underlying anatomical cause, i.e., uterine fibroids, etc.

Naturally, increases in dysmenorrhea severity would, first of all, be related to pathologies within the uterus, ovaries or fallopian tubes. Nevertheless, those in neighbouring structures, including the small and large intestines, urinary bladder or anus, should also be taken into consideration. Not to mention endometriosis, which markedly aggravates the pain [15, 16]. Also nutrition may play a significant role in the prevalence and severity of dysmenorrhea [17].

A study of Hajduk demonstrated that unhealthy diet and poor nutritional status had adverse effects on female fertility and related processes [18].

Therefore, the problem of dysmenorrhea should be analyzed in the context of tensegrity, i.e., a "whole body" approach, which, as Uryzaj writes "means that increases in

tension within one structure lead to occurrence of tension in those structures which are in anatomical or structural contact with tension origin” [19]. Hence, any dysfunction in quite remote structures might cause sacral or pelvic pain or aggravate complaints associated with dysmenorrhea.

Aim

The aim of the study was to determine the efficacy of selected soft tissue therapies applied in specific body areas for the alleviation of dysmenorrhea, without any dietary or lifestyle changes aimed at improvement of health condition. The major efficacy determinant was reduction or elimination of pain medications. The author’s intention was also to raise awareness of dysmenorrhea, its prevention and treatment. The following research questions were formed:

- Can the selected soft tissue therapies have beneficial effects on chronic dysmenorrhea complaints?
- To what extent can these therapies reduce or eliminate the use of pain-relief medications?
- Would there be any effect of these therapies on menstrual flow intensity and cycle regularity?
- Can work, environment and poor/unhealthy diet increase dysmenorrhea severity?
- How does age influence dysmenorrhea complaints?

Material and methods

The study was carried out in a physiotherapy office, Fitness Centre Mavi Area, Łaziska Górne and Masaż & Spa Puchalski, Katowice. Twenty-three women aged 19 to 48 years were recruited; the mean age was 29 years. Considering age-related physical changes in the older and reproduction-related hormonal changes in the younger patients, the obtained results were analyzed according to age category.

The first age group comprised women aged 19 to 27 years (n = 10), and the other those aged 28 to 48 years (n = 13). All participants reported dysmenorrhea of at least one year duration.

The major complaints were cyclic pain in the lower abdomen and/or lumbar area; headaches were also reported. Fewer patients experienced sacral pain. Other ailments included nausea, increased appetite, breast swelling and tenderness, paresthesia in the thigh area or skin changes. Each patients was informed about the aim of the appointments and gave consent to participate in the therapy sessions.

Pain intensity was measured using the visual analog scale (VAS) of 1 to 10, where 1 is no pain and 10 is the worst possible pain. At the beginning though, the majority of women insisted that natural numbers were insufficient; therefore half-values were added (e.g., 1.5). Each appointment started with completing a questionnaire on pain intensity, other complaints and observations regarding the three preceding menstrual cycles.

When the observations did not fall within the below specified standards, the patients were asked to add own assessments. These were mostly given in the areas of VAS score 0 and the number of pain relievers used. Several menstruation-related symptoms were beyond those typically mentioned. A sample pre-therapy questionnaire is given below.

Tab. 1. Sample pre-therapy questionnaire

Spotkanie przed terapią / Pre-therapy appointment questionnaire					
Menstruation symptoms	Sacral pain	Lumbar pain	Lower abdominal pain	Headaches, migraine	Others
Pain severity scale (1-10)	1–2	3–4	5–6	7–8	9–10
Pain duration	1 day	2 days	3 days	4 days	longer
Menstrual cycle length	Shorter than 26 days	26 days	27 days	28 days	Longer than 28 days
Bleeding severity	Extremely light	Mild	Moderate	Severe	Very severe
Number of pain relievers	1	2	3	4	More

Soft tissue physiotherapy interventions for menstrual pain syndromes

Questionnaire completion was followed by therapy interventions aimed to relieve dysmenorrhea-related complaints. The below interventions were applied successively – one after another.

a) Suboccipital

- Patient and therapist’s starting positions

The patient is supine on the coach. The therapist sits on a chair at the side of the patient's head, forearms resting on the coach.

- Hand placement

Index and ring fingers in the region of suboccipital muscles C0-C1-C2.

- Intervention performance

The therapist aims at relaxation of the suboccipital region applying continuous and gentle pressure in a ventral direction for 3 minutes.

b) Lower abdominal

- Patient and therapist's starting positions

The patient lies supine with her knees bent. The therapist stands at the patient's right side.

- Hand placement

Small finger and the ulnar side of both hands resting below the patient's umbilicus.

- Intervention performance

The therapist applies gentle pressure in a dorsal direction then moving the structures below their hands upwards. The intervention is continued for 3 minutes with an aim to relax lower abdominal structures.

c) Obturator foramen area

- Patient and therapist's starting positions

The patient is supine, her right leg bent and resting on the physiotherapist's abdomen. The therapist stands at the patient's right side.

- Hand placement

Right thumb of the physiotherapist rests on the anterior border of the adductor longus close to its proximal attachment.

- Intervention performance

The therapist applies gentle dorsocranial pressure. Despite marked muscle tension and pain reported by the patient, the pressure is maintained for about 3 minutes. The intervention is then repeated on the other side. The aim is to relax the obturator foramen area.

d) Sacral bone

- Patient and therapist's starting positions

The patient is supine. The therapist sits on the patient's right side.

- Hand placement

The therapist's right hand is placed under the patient's sacral bone.

- Intervention performance

The therapist applied gentle pressure in a ventral direction. Despite marked muscle tension and pain reported by the patient, the pressure is maintained for about 3 minutes. The aim is to relax local ligaments and muscle origin and insertion.

e) HVT - superior thoracic aperture

- Patient and therapist's starting positions

The patient is in supine position. The therapist stands behind the patient's head.

- Hand placement

The bases of therapist's hands are palced on upper sternocostal joints – symmetrically on both sides.

- Intervention performance

The therapists and patient cooperate. The patient is requested to take a deep breath. When she breathes out, the therapist applies pressure in a dorsal direction and then quickly takes hands off the chest so that the patient can breathe in again.

f) HVT – lower ribs

- Patient and therapist’s starting positions

The patient is supine. The therapist stands on the patient’s right side.

- Hand placement

The therapist places their hands on the lower ribs and possibly extends the touch to upper ribs.

- Intervention performance

The therapists and patient cooperate. The patient is requested to take a deep breath. When she breathes out, the therapist applies pressure in a dorsal direction and then quickly takes hands off the chest so that the patient can breathe in again.

g) HVT – pubic symphysis

- Patient and therapist’s starting positions

The patient is supine with her legs bent. The therapist stands on the patient’s right side.

- Hand placement

The therapist’s forearm rests between the patient’s knees.

- Intervention performance

The therapists and patient cooperate. The patient is requested to push against the therapist’s forearm. At maximal push the therapist quickly withdraws the forearm.

Results

Following the investigations, the observations regarding dysmenorrhea were subject of analysis. The most common pre- and intraobservational complaints are presented in Figures 1a and 1b.

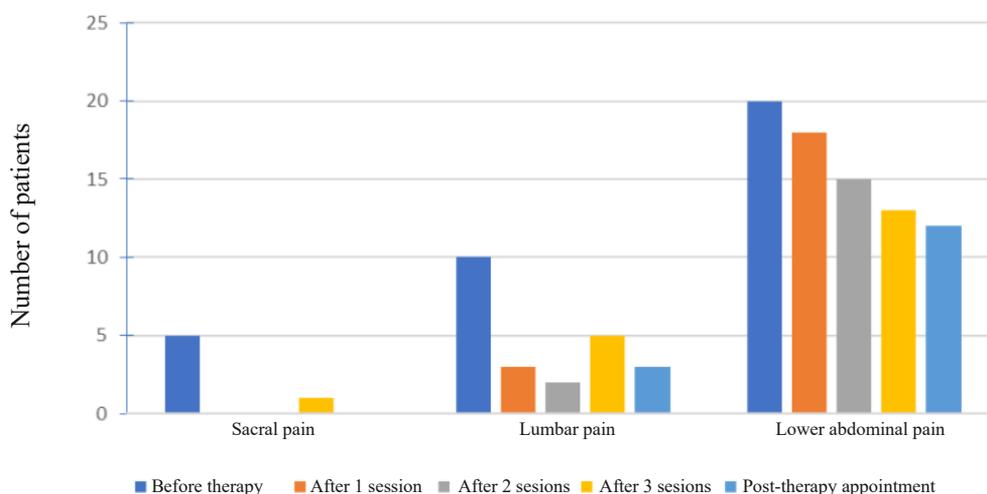


Fig. 1a. Pain complaints

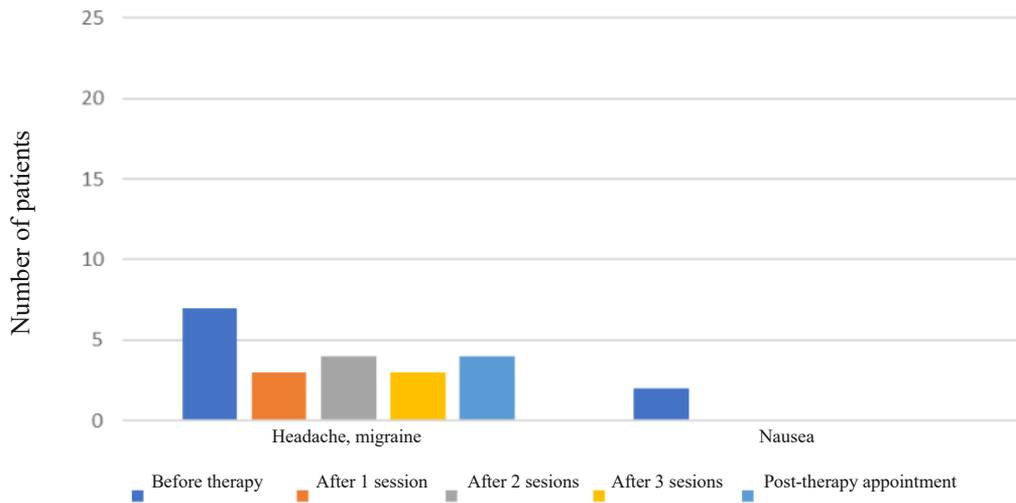


Fig. 1b. Pain complaints

The charts show that, at the first appointment, the majority of patients (n = 20) reported lower abdominal pain. Another 10 patients mentioned lumbar pain, 7 suffered from headaches and 5 from sacral pain. These four symptoms can thus be classified as the most common complaints that disrupt normal functioning. After intervention sessions 12 patients still suffered from lower abdominal pain, 4 from headaches and 3 from lumbar pain while none reported sacral pain.

Another parameter was pain intensity assessed using the VAS score. Figure 2 shows the sum of arithmetic means of the patients' VAS scores.

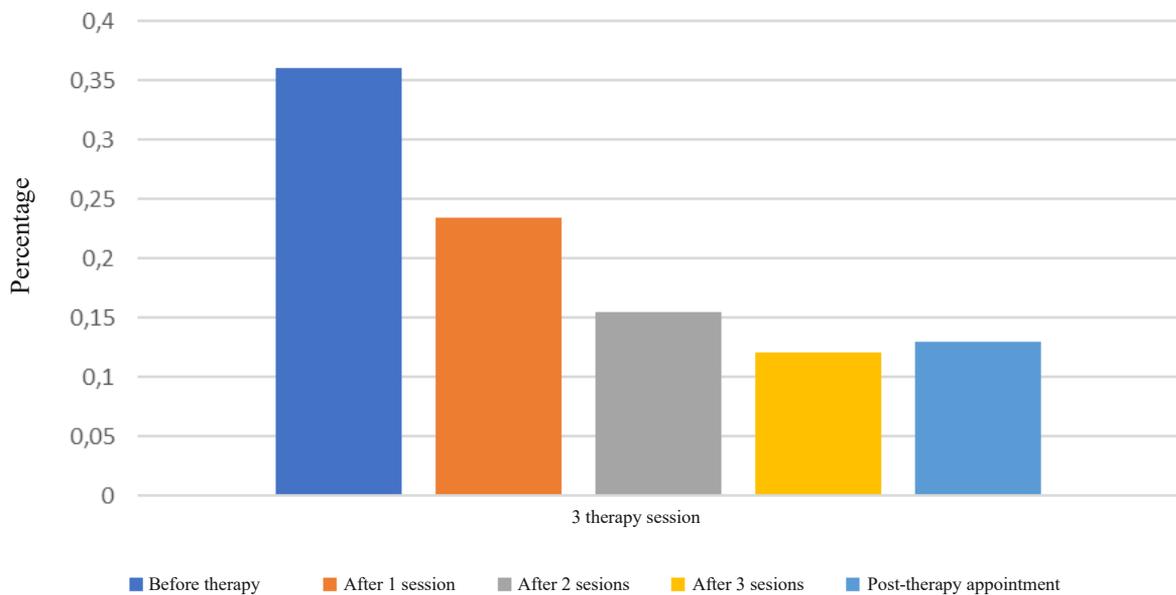


Fig. 2. Pain scale

It should be noted that the analysis also included the post-therapy menstrual cycle (in Figures referred to as post-therapy appointment). Symptom improvement was noted during therapy and sustained after therapy completion. Średnia ocena bólu przed i po terapii wynosiła 36% i 13% of the maximum VAS score, respectively. At the first appointment, pain intensity of 9-10 and 7-8 was reported by 16 women while only 2 participants had these scores at the post-therapy meeting. Since pain complaints proved different in the two age groups, Fig. 3 presents pain complaint severity by age groups.

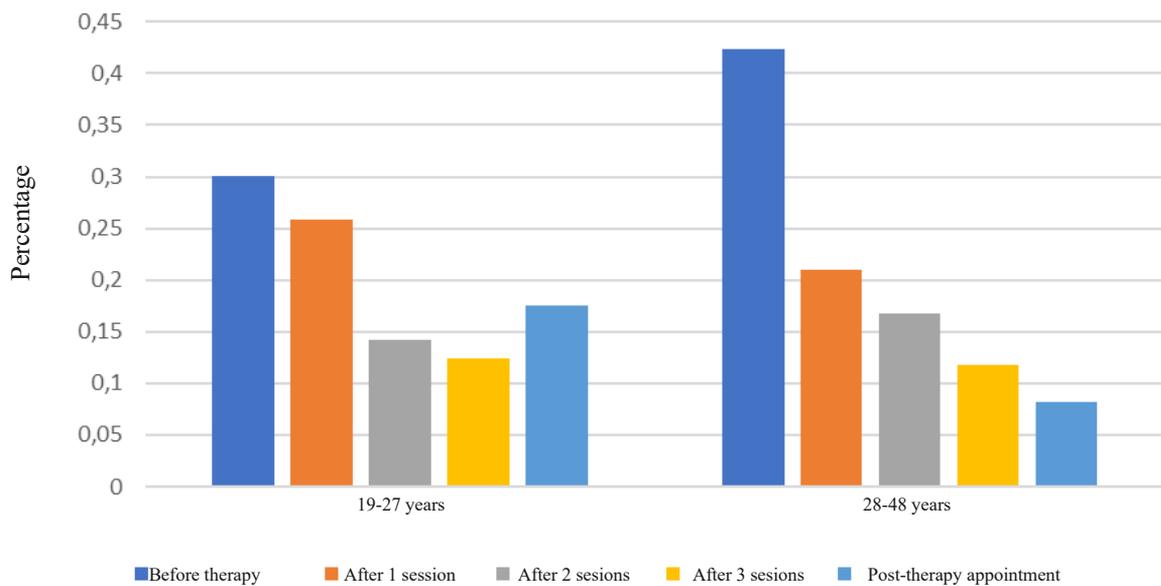


Fig. 3. Pain score by age groups

More noticeable pain improvement was seen in the age group of 28-48 years, where the proportion of patients with pain complaints was 42% and 8% at the initial and final appointment, respectively. Considerably fewer patients aged 19-27 years reported improvement, i.e., the proportion of patients with pain complaints was 30% and 18% at the initial and final appointment, respectively.

Figure 4 demonstrates a marked decrease in the number of pain relievers. The total number of pain-relief medications taken by all patients during the investigation period was 213; the numbers reported at the first and final appointments were 86 and 21, respectively.

The patients aged 28-48 years used 134 medications which equals 63% of the total. The younger group reported 79 pain relievers, i.e., 37% of the total. It should be noted though that the younger group was smaller in number, which obviously affected the above statistics. Another issue

is that the participants used different types of pain relievers including intravenous drugs. This, however, was not included in the analysis. Reduction in the number of pain-relief medications continued in the month following the completion of the study. Results by age group also proved interesting (Fig. 5).

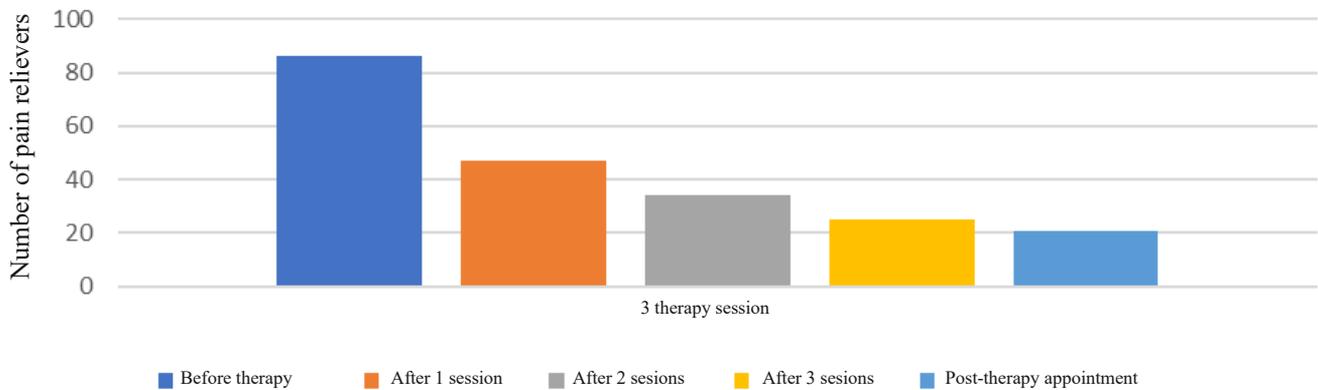


Fig. 4. Number of pain relievers

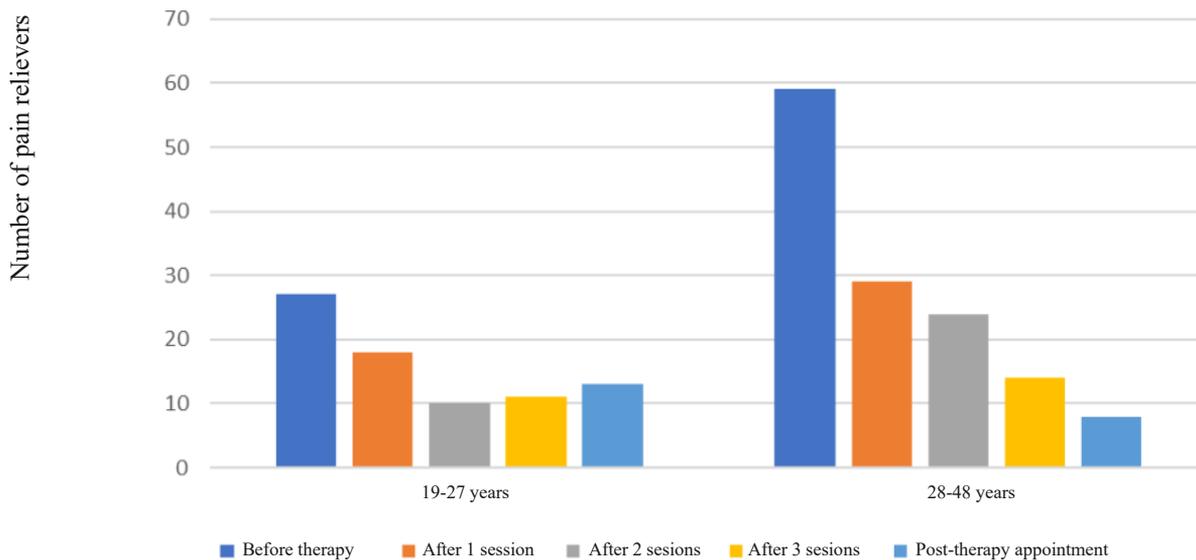


Fig. 5. Number of pain relievers by age groups

The majority of pain relievers were taken by patients aged 28-48 years (the numbers reported at first appointment were 59 and 27 in the older and younger groups, respectively). More frequent use of pain-relief medications by older participants might indicate lower pain threshold or aging-related bodily changes.

Another analysis parameter was the number of days with pain experience, also by age and patient-related improvement (Figs. 6 and 7).

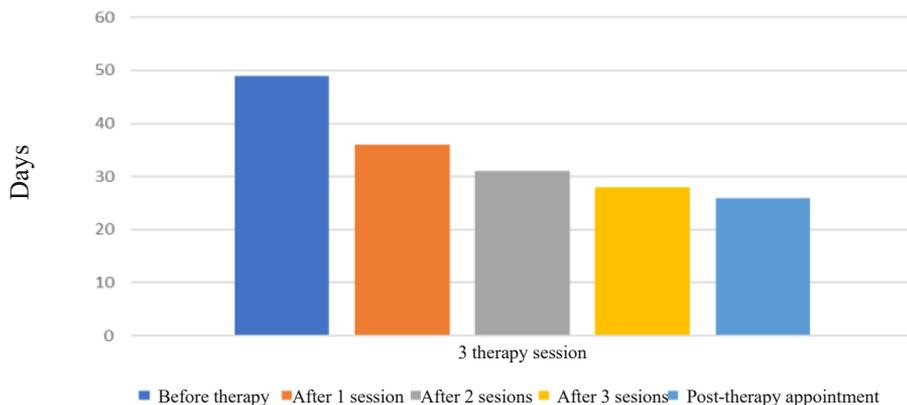
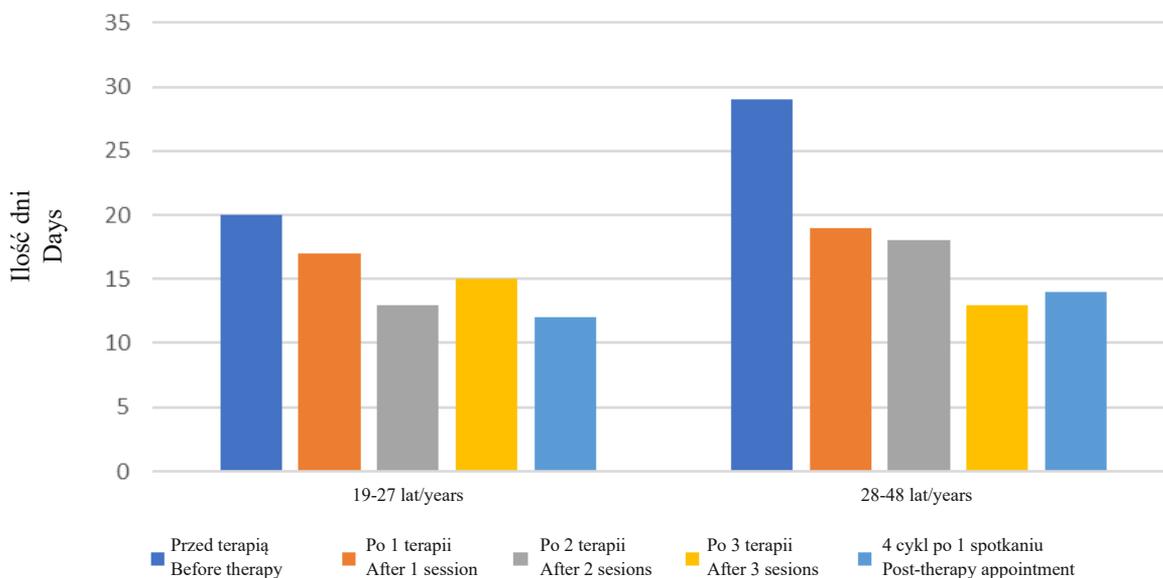


Fig. 6. Pain duration



Ryc. 7. Długość trwania bólu wg. kryterium wieku

Fig. 7. Pain duration by age groups

The total number of days with dysmenorrhea-related pain was 170 in both age groups, of which 54 days (32%) corresponded to the first menstruation day only while 37 (22%) to menstruation days one and two. The beneficial effects of the therapy are also evidenced by a decrease in "painful" days, i.e., from 49 (29%) at the first to 26 (15%) at the final appointment.

Pain intensity score, number of pain relievers and pain duration analyses were performed for the younger group (19-27 years). Pain scores were higher at the final appointment compared to appointments 2 and 3. However,

the number of pain relievers decreased. The results are presented in Fig. 8.

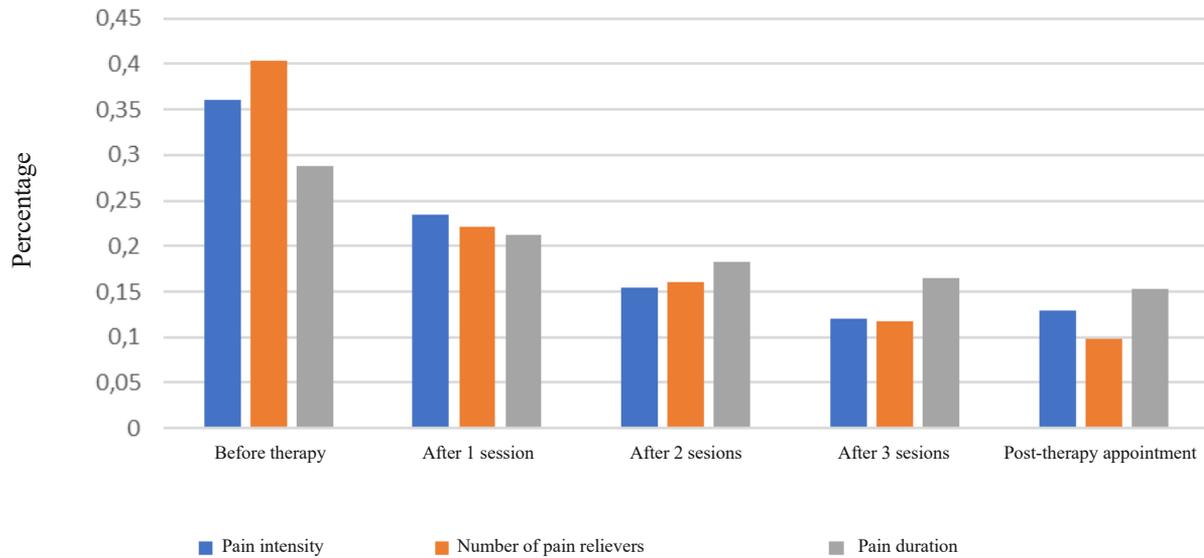


Fig. 8. Pain intensity, number of pain relievers and pain duration in women aged 19 to 27 years

Figure 9 shows improvement indicated during consecutive appointments.

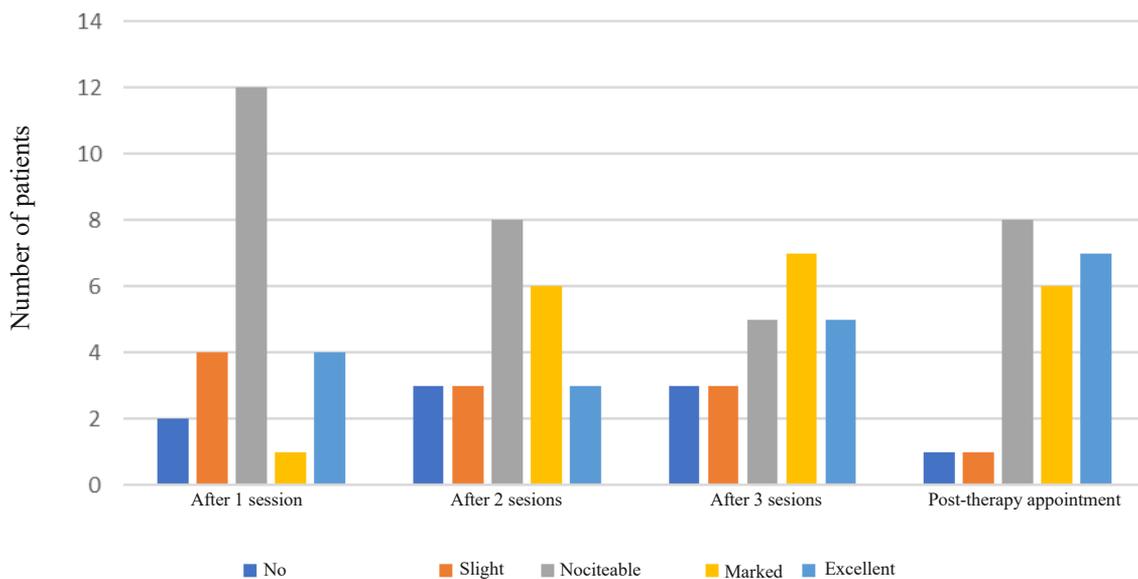


Fig. 9. Improvement – consecutive appointments

The number of days with period pain decreased. The majority of patients positively assessed their post-therapy health status rating the improvement as slight, 21%, noticeable (36%), marked (22%) or excellent (21%). Slight or no improvement were mostly reported at the start of the

study; more rarely at final appointments. The therapy also seems to have had a regulatory effect on bleeding severity and the menstruation length. The results (also by age groups) are presented in Figs. 10, 11 and 12.

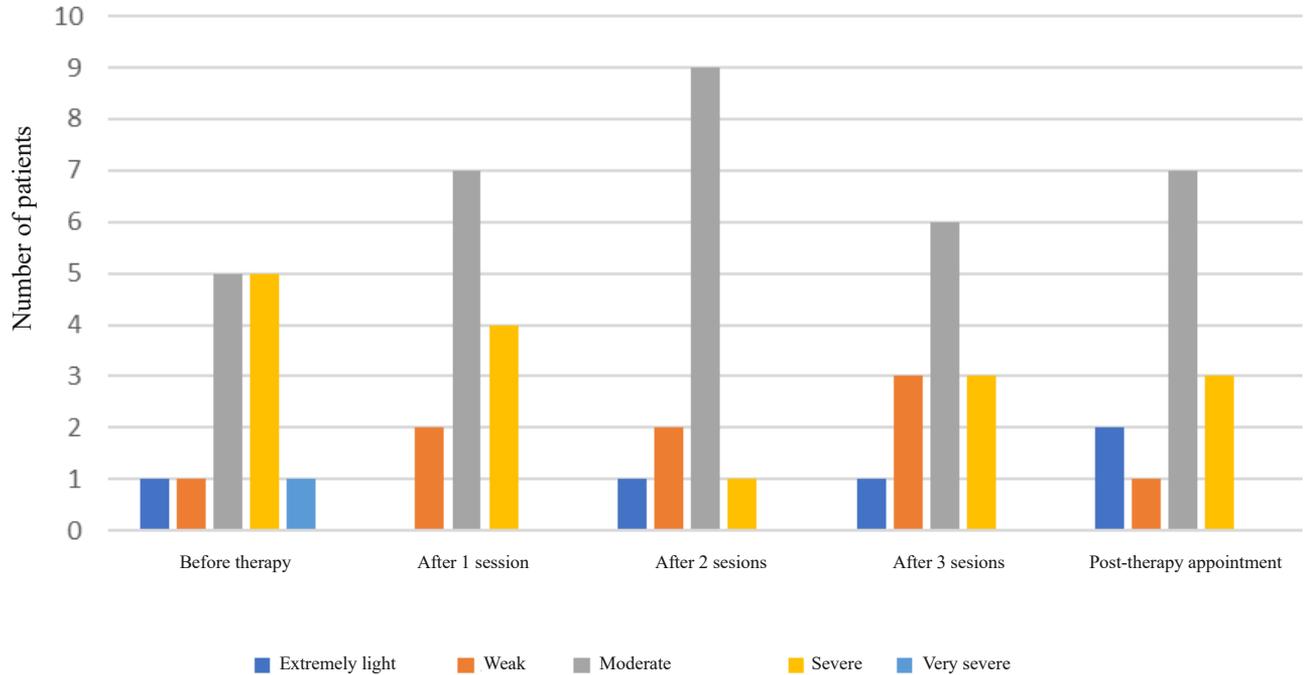


Fig. 10. Bleeding severity

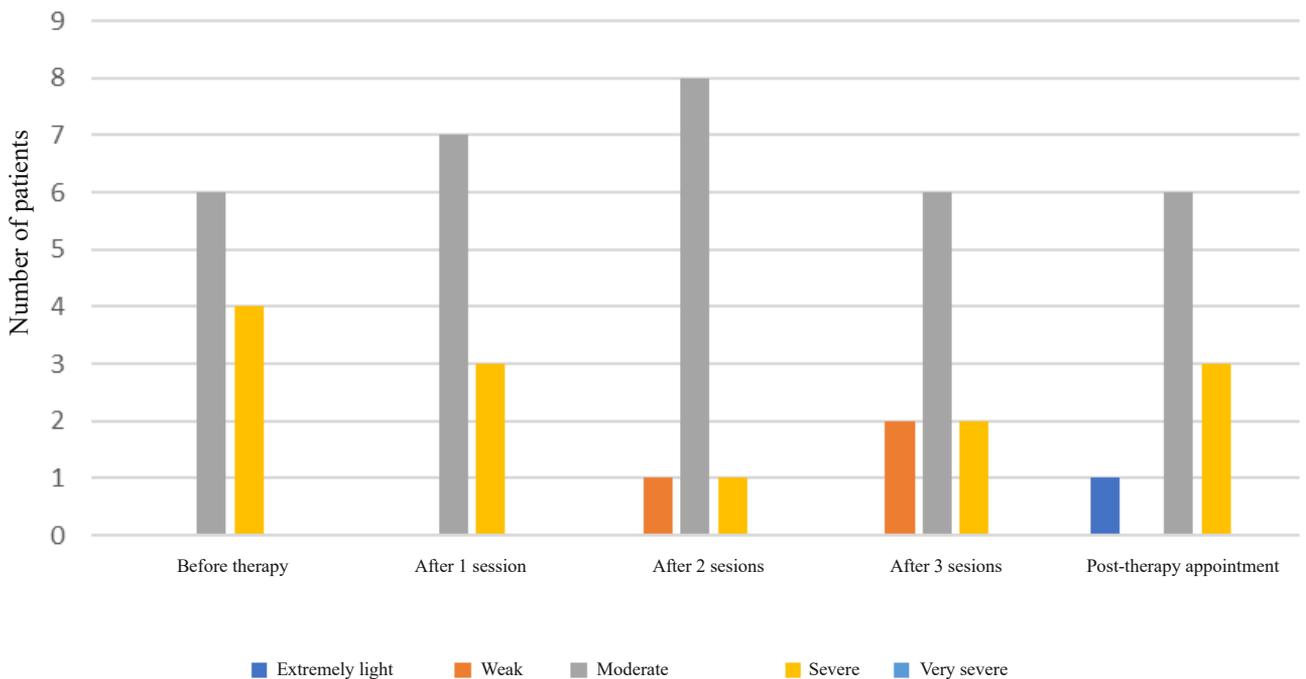


Fig. 11. Bleeding severity in women aged 19 to 27 years

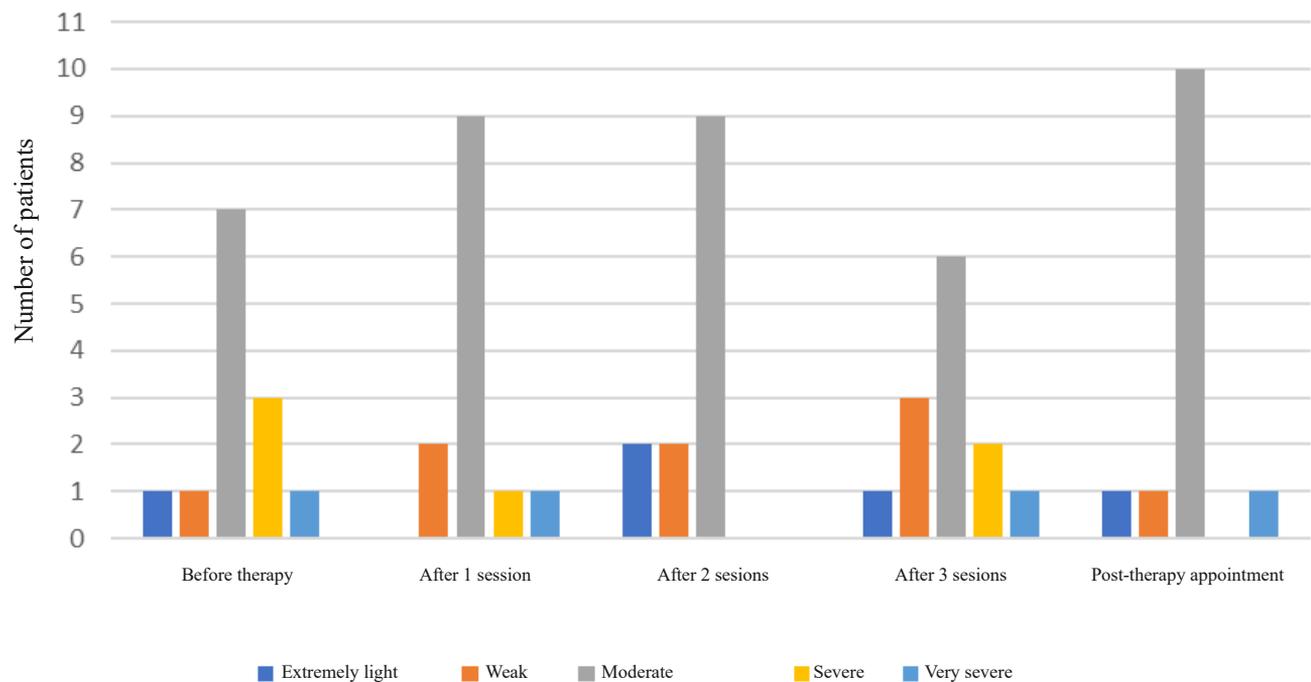


Fig. 12. Bleeding severity in women aged 28 to 48 years

The figures indicate that, during therapy meetings, the participants started using the term moderate to refer to bleeding severity. This might evidence improvement of health condition and resultant reduction in endometrium breakdown and shedding.

Discussion

Dysmenorrhea is a broad topic that, additionally, remains enigmatic. Mrugacz et al. conclude that "despite high prevalence, etiopathogenesis of dysmenorrhea is still unclear and controversial" [7].

Furthermore, muscle tension of dysmenorrhea builds up before menstrual bleeding actually begins. Krawczyk noted that premenstrual syndrome (PMS) comprises approximately 300 symptoms [20]. One of the first questions of our study questionnaire was about the location of dysmenorrhea related symptoms. Eleven symptoms were commonly mentioned by the study participants including sacral, lumbar and/or lower abdominal pain, headaches, nausea, increase in appetite, edema, skin changes, breast swelling, lower extremity paresthesia or discomfort in the ovarian area. The majority suffered from pain in the lower abdomen (n = 20), lumbar (n = 10) or sacral (n = 5) areas. Premenstrual syndrome manifests itself with a whole range of somatic and emotional symptoms.

All respondents in a study of Kozłowski et al. reported irritability, depression, fatigue, mood swings, low self-esteem, breast sensitivity, sensation of fluid retention, diarrhoea, constipation or headaches; 26.2% experienced regular or frequent discomfort [21].

A number of factors could contribute to menstrual pain severity including "...uterine hyperactivity that might excessive compression on uterine vessels resulting in ischemia and pain" [7]. Or, it might be that impaired blood supply causes uterine hypercontractility; hence, increased muscle tension in the lower abdomen. Increased muscular activity might, in turn, affect osteoblast-osteoclast communications or, more directly, restrict joint mobility thus limiting motion within the hip or lumbar spine.

Our study participants with dysmenorrhea reported unusual tightness in the lower abdominal area (20 out of 23 women). As already mentioned, lumbar and sacral pain were noted by 10 and 5 participants, respectively. This brings us back to the problem of pain relievers. Nonsteroidal anti-inflammatory drugs as well as oral contraceptives are effective but the failure rate is around 20% to 25% [23].

As many as 71.3% of Kozłowski et al.'s respondents used pain relievers in the perimenstrual time period [21]. This is consistent with our observations as each of the study participants initially marked taking at least one pain reliever during menstruation. The maximum number of pain medications used was 11 and 10 by one and two patients, respectively. Over-the-counter analgesics including naproxen sodium, ibuprofen, diclofenac, aspirin and ketoprofen were most frequently taken to ease menstrual cramps. Wenbo et al. concluded that considering the efficacy and safety, ibuprofen should be recommended as the optimal OTC analgesic for primary dysmenorrhea [24].

The total number of pain-relief medications taken by our study participants during the investigation period was 213, of which 86 were used prior to the initial appointment. From pharmacological perspective, selective serotonin reuptake inhibitors should be considered first line treatment for severe dysmenorrhea with ovulation inhibitors as second line therapy [7].

Popiel concluded that nonsteroidal anti-inflammatory drugs and antispasmodics were the most efficient. It should be noted that analgesics do not alleviate menstrual cramps completely. Also, NSAIDs show antiprostaglandin synthetase activity and, as such, may cause gastrointestinal, nervous system or cardiovascular complications [26, 27].

Apart from the potential of developing dependence on pain relievers, dysmenorrhea interferes with daily life and is associated with absence from work or school. As many as 16 of our 23 participants marked 7-8 or 9-10 on the VAS meaning they experienced pain severely limiting daily functioning including working life. Hence the empathetic and socioeconomic importance of further investigations on dysmenorrhea. It should be emphasized that, in the course of the study, our younger group was exposed to several participant-independent stress factors including end-of-term

exams, father's death, COVID-19 pandemic; they were able to associate these stressful events with changes in menstrual cycle. Although not included in the analysis, stress-related response might obviously affect the severity of dysmenorrhea symptoms. However, physical therapy interventions, e.g., lumbar, lower abdomen or buttocks massage, have a potential to reduce these complaints [28].

Each and every organ may become dysfunctional; according to Liem and Dobler, changes in female reproductive organs may manifest themselves very differently [29].

Soft tissue therapy used in this study alleviated dysmenorrhea complaints. The number of pre-appointment pain relievers was reduced from 86 to 21, and VAS pain score decreased 3-fold. It can be speculated that if the complaints were only tension-related, the efficacy of these manual interventions would be around 100% skuteczności. It should be noted though that several patients experienced slight relief only. A whole range of factors and relationships might play a role here and further studies are therefore warranted.

Conclusions

The results of this study showed that soft tissue therapy applied at specific body areas alleviated chronic menstrual pain and helped reduce the number of pain-relief medications. The author hopes that a detailed analysis of dysmenorrhea-related ailments might improve prevention thereof and expand knowledge in this area. The following conclusions have been drawn:

- soft tissue therapy at specific body areas alleviated the symptoms of chronic dysmenorrhea;
- the therapy also helped reduce or eliminate the use of pain relievers;
- study participants noted regulatory effects of soft tissue interventions on menstrual bleeding and the duration of their menstrual cycle;
- patient's age had an impact on therapy outcomes.

Adres do korespondencji / Corresponding author

Łukasz Skibiński

e-mail: lukasskibinski@gmail.com

Piśmiennictwo/ References

1. C. X. Chen, D. Groves, W. R. Miller, J. S. Carpenter. Big data and dysmenorrhea: what questions do women and men ask about menstrual pain? *Journal of Women's Health*. 2018. 27 (10), 1233-1241.
2. W. Zenan, Y. Yi, X. Jun, et al. Which acupuncture and moxibustion technique is more effective for primary dysmenorrhea. A protocol for a network meta-analysis of randomized controlled trials. *Medicine*. 2020. 99 (35).
3. A. Xholli, G. Simoncini, S. Vujosevic, et al. Menstrual Pain and Elasticity of Uterine Cervix. *Journal of Clinical Medicine*. 2021. 10 (5).
4. F. A. Oladosu, F. F. Tu, S. Farhan, et al., Abdominal skeletal muscle activity precedes spontaneous menstrual cramping pain in primary dysmenorrhea. *Am. J. Obstet. Gynecol.* 2018. 07; 219(1).
5. A. Dobrzycka, I. Wilk. Ocena efektywności automasażu w redukcji bólu menstruacyjnego kobiet. *Medical Science Pulse* 2017. 11.26-31.
6. K. Yum, S. Kang, H. Han, The effect of balance taping for prevention of menstrual pain in female middle school students. *The Journal of Physical Therapy Science*. 2017.29 (5). 813-818.
7. G. Mrugacz, C. Grygoruk, P. Sieczyński, M. Grusza, I. Bołkun, P. Pietrewicz, Etiopatogeneza zespołu bolesnego miesiączkowania. *Developmental Period Medicine*. 2013. 1 (XVII).
8. R. M. Sapolsky. Dlaczego zebry nie mają wrzodów? *Psychofizjologia stresu*. Wydawnictwo naukowe PWN, Warszawa, 2012.
9. W. Jiang, X. G. Hua, C. Y. Hu, et al. The prevalence and risk factors of menstrual pain of married women in Anhui Province, China. *Eur. J. Obstet. Gynecol. Reprod. Biol.* 2018. 229. 190-194.
10. E. R. MacRae, T. Clasen, M. Dasgupta, B. A. Caruso. 'It's like a burden on the head': Redefining adequate menstrual hygiene management throughout women's varied life stages in Odisha. *PLOS ONE*, 2019.
11. M. Armour, T. Ferfolja, C. Curry et al., The Prevalence and Educational Impact of Pelvic and Menstrual Pain in Australia: A National Online Survey of 4202 Young Women Aged 13-25 Years. *Journal of Pediatric and Adolescent Gynecology*. 2020. 33 (5). 511-518.
12. M. Schunke, E. Schulte, U. Schumacher, *PROMETEUSZ Atlas anatomii człowieka*. MedPharm Polska. 2009. 3. 332-333.
13. S. Iacovides, I. Avidon, F. Baker. What we know about primary dysmenorrhea today: a critical review. *Hum. Reprod. Update*. 2015. 21 (6). 762-78.
14. H. Lee, T. Choi, C. Myung, M. Lee, Herbal medicine Shaofu Zhuyu decoction for primary dysmenorrhea: a systematic review protocol. *Systematic reviews*. 2016. 5 (1).
15. K. Yamada, T. Adachi, Y. Kubota et al., Developing a Japanese version of the Injustice Experience Questionnaire – chronic and the contribution of perceived injustice to severity of menstrual pain: a web-based cross-sectional study. *Bio Psycho Social Medicine*. 2019.
16. M. D. Głowacka. *Pielęgniarstwo Polskie*. Uniwersytet Medyczny im. Karola Marcinkowskiego w Poznaniu, 2011. 42. 199-203.
17. N. Najafi, H. Khalkhali, F. M. Tabrizi, R. Zarrin., Major dietary patterns in relation to menstrual pain: a nested case control study. *BMC Women's Health*. 2018.
18. M. Hajduk. Wpływ wybranych składników pokarmowych na funkcjonowanie układu rozrodczego u kobiet. *Healthy Lifestyle*. 2013.
19. R. Uryzaj. *Anatomia masażu tkanek głębokich*, Wydawnictwo Centrum Szkoleniowego Rafała Uryzaja. 2020. 17.
20. W. Krawczyk, E. Rudnicka-Drożak. *Zespół napięcia przedmiesiączkowego*. Medycyna Ogólna i Nauki o Zdrowiu, 2011.
21. P. Kozłowski, Ocena częstości występowania objawów zespołu napięcia przedmiesiączkowego u młodych kobiet, *Journal of Education, Health and Sport*. 2017.
22. J. Wang, A. A. Rogge, M. Armour, C. A. Smith, International Research Kit App for Women with Menstrual Pain: Development, Access, and Engagement. *JMIR Mhealth Uhealth*, 2020.
23. S. Blödt, D. Pach, S. Eisenhart-Rothe et al., Effectiveness of app-based self-acupressure for women with menstrual pain compared to usual care: A randomized pragmatic trial. *Elsevier*. 2018. 218 (2). 227.
24. N. Wenbo, X. Ping, H. Chunyan, et al. Efficacy and safety of over-the-counter analgesics for primary dysmenorrhea: A network meta-analysis. *School of Nursing, Jilin University*. 2020.
25. A. Popiela, J. Kasiak, T. Heimrath, B. Palczynski. Dysmenorrhoea primaria u pacjentek młodocianych. *Ginekologia Polska*. 1993. 64(5):250-2.
26. H. Taylor, L. Pal, E. Sell, *Speroff's clinical gynecologic endocrinology and infertility*. Philadelphia: Lippincott Williams & Wilkins. 2019.
27. C. Wong, C. Farquhar, H. Roberts, M. Proctor. Oral contraceptive pill as treatment for primary dysmenorrhoea. *Cochrane Database Syst. Rev.* 2009. 2 (4).
28. W. Kasprzak, *Fizjoterapia Kliniczna*. Wydawnictwo Lekarskie PZWL. 2010. 266 -267.
29. T. Liem, T.K. Dobler, *Techniki osteopatyczne, t. 2*, Elsevier Urban & Partner. 2011. 199-223.