هُوَ الحَکیم

4th INTERNATIONAL & 35th ANNUAL CONGRESS OF IRANIAN PHYSIOTHERAPY ASSOCIATION

25-27 SEPTEMBER 2024

Olympic Hotel- Tehran

چهارمین کنگره بین المللی و سی و پنجمین کنگره سالیانه انجمن فیزیوتراپی ایران

۶-۴ مهرماه ۱۴۰۳

هتل المپیک - تهران

همراه با امتیاز بازآموزی

کارگاه‌های آموزشی

نمایشگاه تجهیزات فیزیوتراپی و توانبخشی

فیزیوتراپی:

بهبود سلامت حرکتی

ارتقای کیفیت زندگی

سرشناسه: کنگره بین‌المللی و کنگره سالیانه انجمن فیزیوتراپی ایران (چهارمین و سی و پنجمین : ۱۴۰۳ : تهران)
عنوان و نام پدیدآور: چهارمین کنگره بین‌المللی و سی و پنجمین کنگره سالیانه انجمن فیزیوتراپی ایران: ۴ - ۶ مهرماه ۱۴۰۳ هتل المپیک تهران= 4th International & 34th Annual Iranian physiotherapy Congress 25-27 September 2024 Teheran - Olympic Hotel - Tehran/به کوشش محمدرضا آشتیانی؛ [برگزارکننده: انجمن فیزیوتراپی ایران].
مشخصات نشر: تهران : انتشارات رسانه تخصصی، ۱۴۰۳.
مشخصات ظاهری: ۱۶۸ ص.: جدول.
شابک: ۵-۶۵۸-۲۹۳-۶۰۰-۹۷۸
وضعیت فهرست نویسی: فیپا
موضوع: فیزیوتراپی -- ایران -- کنگره‌ها
Physical therapy -- Iran -- Congresses
شناسه افزوده: انجمن فیزیوتراپی ایران
شناسه افزوده: هتل المپیک (تهران)
شناسه افزوده: دانشکده توانبخشی دانشگاه علوم پزشکی و خدمات بهداشتی درمانی ایران
اطلاعات رکورد کتابشناسی: فیپا

چهارمین کنگره بین‌المللی
و سی و پنجمین کنگره سالیانه انجمن فیزیوتراپی ایران

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نوبت چاپ: اول/ ۱۴۰۳

شابک: ۵-۶۵۸-۲۹۳-۶۰۰-۹۷۸

نشانی: خیابان انقلاب، نرسیده به میدان فردوسی، خیابان کندوان، پلاک ۸، طبقه همکف
تلفن: ۶۶۷۳۷۱۳۳ - ۶۶۷۳۷۳۳۲ - ۶۶۷۳۷۳۰۸ - ۶۶۷۳۷۰۷۴ - ۰۹۱۲۳۰۴۹۱۰۹
سامانه پیامکی: ۳۰۰۰۲۱۶۶۷۳۷۳۳۲
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انتشارات رسانه تخصصی

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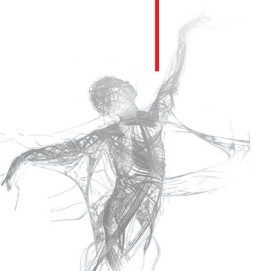

پیام رییس کنگره

دکتر ایرج عبداللهی

رئیس انجمن فیزیوتراپی ایران

اول دفتر به نام ایزد دانا صانع پروردگار حی توانا

چهارمین کنگره بین المللی و سی و پنجمین کنگره سالیانه انجمن فیزیوتراپی ایران را در شرایطی برگزار می‌کنیم که اجرای فراگیر دکترای حرفه‌ای فیزیوتراپی شرایطی امیدبخش را در دفتر پرافتخار جامعه فیزیوتراپی ایران رقم زده است و بدون شک با اتحاد و همدلی بین ارکان مختلف جامعه بزرگ فیزیوتراپی کشور شاهد توسعه علمی و حرفه ای و تثبیت جایگاه آن را در حوزه پیشگیری، درمان و توانبخشی در نظام سلامت خواهیم بود.

انجمن فیزیوتراپی ایران که از پیشگامان برگزاری کنگره‌های علمی در بین تمام گروه‌های پزشکی است در این دوره میزبان تعداد کثیری از همکاران فیزیوتراپیست و متخصصین رشته‌های مرتبط می‌باشد که در قالب پنل‌های تخصصی، مقالات علمی به صورت سخنرانی و پوستر، کارگاه‌های تخصصی و نمایشگاه بزرگ تجهیزات فیزیوتراپی و توانبخشی می‌باشد.

با رویکرد جدیدی که از دوره پیش با تاکید بر جنبه‌های بالینی و کاربردی در عرصه دانش افزایی علمی آغاز شده است این دوره نیز تاکید اصلی بر پانل های بالینی تخصصی و سخنرانی‌های علمی در این حوزه است.

از کلیه عزیزانی که در برگزاری این برنامه فاخر علمی نهایت همکاری را داشته‌اند از جمله دبیران محترم علمی و اجرایی و تیم پرتلاش علمی و اجرایی و دانشجویی نهایت تشکر به عمل می‌آید. ضمن تشکر از اعضای محترم هیئت مدیره و مسئولین انجمن، اعضای محترم بورد فیزیوتراپی، دپارتمان‌های فیزیوتراپی و پیشکسوتان عزیز، مقدم مهمانان ارجمند، اساتید، پیشکسوتان، مدعوین گرامی، همکاران فیزیوتراپیست و دانشجویان سرفراز را به این همایش بزرگ علمی گرامی می‌داریم.

اتحاد و تعامل، نکوداشت بزرگان، همت جوانان و مجهز شدن به دانش روز، رمز موفقیت و توسعه رشته فیزیوتراپی در کشور است که فایده آن بی‌شک نصیب آحاد مردم عزیز خواهد شد.

پیام دبیر علمی کنگره

دکتر محمّدرضا پوراحمدی

به نام خدا

همکاران و دانشمندان گرامی،

به یاری خداوند متعال و با حمایت همگی شما بزرگواران، "چهارمین کنگره بین‌المللی و سی و پنجمین کنگره سالیانه انجمن فیزیوتراپی ایران" از تاریخ ۴ تا ۶ مهرماه سال ۱۴۰۳ در هتل المپیک تهران برگزار خواهد شد. کنگره امسال با پذیرش فراگیر دانشجو در مقطع دکترای حرفه‌ای فیزیوتراپی (DPT) همزمان شده است؛ مقطعی که پس از سال‌ها تلاش و پیگیری فعالانه اعضای محترم بورد فیزیوتراپی، هیئت مدیره انجمن علمی فیزیوتراپی ایران و یکایک فیزیوتراپیست‌های سراسر کشور عزیزمان به ثمر نشسته است.

با توجه به پیشرفت چشمگیر رشته فیزیوتراپی در حوزه‌های مختلف، به‌ویژه در دو دهه اخیر و همچنین اجرایی شدن مقطع DPT در کشور، ضروری است تا همکاران عزیز فیزیوتراپیست با حیطه‌های جدید و مهم فیزیوتراپی در دنیا بیشتر آشنا شوند تا بتوانند نقش پررنگ‌تری در راستای پیشگیری و درمان مشکلات عصبی-عضلانی-اسکلتی، قلبی-ریوی و... افراد جامعه داشته باشند. لازم به ذکر است که با توجّه به روند سالمندی در کشور، نقش همکاران عزیزمان به عنوان متخصصین بهبود سلامت حرکتی در ارتقای کیفیت زندگی، استقلال و حتی افزایش طول عمر افراد سالمند، غیرقابل انکار و بسیار با اهمیت است. بر این اساس، شعار امسال کنگره بین‌المللی "فیزیوتراپی: بهبود سلامت حرکتی، ارتقای کیفیت زندگی" نامگذاری شده است.

در کنگره سی و پنجم، تلاش کرده‌ایم ترکیبی متنوع از پنل‌های تخصصی چندرشته‌ای و سخنرانی‌های جذاب را برنامه‌ریزی کنیم تا فیزیوتراپیست‌های محترم سراسر کشور بتوانند با آخرین تحولات در حوزه فیزیوتراپی و دیدگاه‌های تخصصی آشنا شوند و ان‌شاءالله گام‌های مؤثرتری در پیشگیری از انواع آسیب‌های جسمانی بردارند و در نهایت بار اقتصادی سنگین تحمیل‌شده به جامعه در حوزه درمان را کاهش دهند. همچنین، در محورهای کنگره امسال، حوزه‌های مهم نوظهور و یا کمتر پرداخته شده نظیر فیزیوتراپی در پیشگیری از آسیب‌های عصبی-عضلانی-اسکلتی، آشنایی با فیزیوتراپی در اختلالات وستیبولار، فیزیوتراپی در حیوانات و فیزیوتراپی در ضایعات ناحیه دست قرار داده شده است تا اهمیت نقش فیزیوتراپی بیش از پیش برای همگان مشخص گردد.

اطمینان داریم که تمامی اعضای علمی و اجرایی کنگره نهایت تلاش خود را به کار بسته‌اند تا حاصل تلاش چندین ماهه آن‌ها، اندوخته‌ای علمی درخور و شایسته برای کلیه شرکت‌کنندگان باشد. امیدوارم کنگره سی و پنجم، خاطره‌ای علمی و به یاد ماندنی در ذهن تمامی همکاران عزیز فیزیوتراپیست به یادگار بگذارد. منتظر حضور همه شما همکاران و سروران گرامی در این کنگره فاخر هستیم.

پیام دبیر اجرایی کنگره

فیزیوتراپیست همایون آبایی

بنام خداوند ایران زمین

مرا عهدی است با جانان که تا جان دربدن دارم　　هـواداران کویش را چـو جـان خویشتـن دارم

چهارمین کنگره بین المللی وسی وپنجمین کنگره سالیانه انجمن فیزیوتراپی ایران را در حالی در آغازین روزهای فصل زیبای پاییز از تاریخ چهارم لغایت ششم مهرماه ۱۴۰۳ در محل هتل المپیک تهران در خدمت همکاران فرهیخته سراسر کشور خواهیم بود که پس از سال‌ها تلاش بی وقفه و مستمر بزرگان و ارکان رشته فیزیوتراپی اعم از؛ اساتید محترم بورد؛ هیات مدیره های محترم ادوار گذشته وحال انجمن فیزیوتراپی ایران، با اتحادی مثال زدنی و به پشتوانه حمایت‌های همه جانبه همکاران و دانشجویان عزیز در اقصی نقاط کشور عزیزمان شاهد اجرای فراگیر دکترای حرفه ای فیزیوتراپی (DPT) از کلیه مقاطع تحصیلی هستیم. ضمن تبریک این رخداد علمی بسیار مبارک به همکاران گرانقدرم و تقدیم آن به روح بلند همکاران جاوید نامی که بین ما نیستند ازجمله همکاران عزیز شهدای سلامت و به‌ویژه همکار بزرگوارمان مرحوم فیزیوتراپیست دکتر حمیدرضا اشراقی، مقدم یکایک همکاران محترم را گرامی داشته و امیدوارم بزرگترین رخداد علمی فیزیوتراپی در سطح کشور و آشنایی همکاران با جدیدترین دستاورد های علمی که همراه با حداکثر امتیاز بازآموزی می‌باشد و در کنار آن وسیع‌ترین نمایشگاه تجهیزات فیزیوتراپی و پزشکی و توانبخشی و ورزشی در ۶ سالن، مورد عنایت و استقبال شما خوبان قرار گیرد.

در خاتمه شایسته است از کلیه عزیزان و دست اندرکاران برگزاری کنگره به‌ویژه هیات مدیره محترم انجمن فیزیوتراپی ایران، دبیر و اعضای محترم کادر علمی کنگره و صدالبته همکاران بسیار گرانقدرم در کادر اجرایی کنگره متشکل از همکاران عزیز دفتر انجمن فیزیوتراپی ایران، همکاران محترم فیزیوتراپیست و دانشجویان پرتلاش و آینده‌ساز رشته صمیمانه سپاسگزاری نموده و پیشاپیش از شما بزرگواران جهت هرگونه کاستی احتمالی پوزش بطلبم.

با آرزوی بهترینها برای یکایک همکاران گرانقدرم

خدایا چنان کن سرانجام کار　　تو خشنود باشی و ما رستگار

ارکان

دکتر ایرج عبداللهی

رئیس کنگره و رئیس انجمن فیزیوتراپی ایران
استاد گروه آموزش فیزیوتراپی
دانشگاه علوم توانبخشی و سلامت اجتماعی

دکتر محمّدرضا پوراحمدی

دبیر علمی کنگره
استادیار گروه آموزشی فیزیوتراپی
دانشگاه علوم پزشکی ایران

فیزیوتراپیست همایون آبایی

دبیر اجرایی کنگره
عضو هیات مدیره
انجمن فیزیوتراپی ایران

اعضای کمیته علمی

به ترتیب حروف الفبا

فیزیوتراپیست دکتر اسماعیل ابراهیمی تکامجانی	فیزیوتراپیست دکتر سهیلا عباسی
فیزیوتراپیست دکتر فاطمه احسانی	فیزیوتراپیست دکتر ایرج عبداللهی
فیزیوتراپیست دکتر محمد اکبری	فیزیوتراپیست دکتر امیر مسعود عرب
فیزیوتراپیست دکتر بهرام امیرشاکری	فیزیوتراپیست دکتر کامران عزتی
فیزیوتراپیست دکتر سمیه امیری آریمی	فیزیوتراپیست دکتر مسعود غفرانی
فیزیوتراپیست دکتر محمد حسن آذرسا	فیزیوتراپیست دکتر فاطمه غیاثی
فیزیوتراپیست دکتر سمیه آذرنیا	فیزیوتراپیست دکتر احسان قاسمی
فیزیوتراپیست دکتر زینت آشناگر	فیزیوتراپیست دکتر صدیقه کهریزی
فیزیوتراپیست دکتر محمد تقی‌پور	فیزیوتراپیست دکتر لیلا گودرزی
فیزیوتراپیست دکتر معصومه حسام	فیزیوتراپیست دکتر محمدعلی محسنی بندپی
فیزیوتراپیست دکتر سید مجید حسینی	فیزیوتراپیست دکتر نرگس مفتاحی
فیزیوتراپیست دکتر حجت رادین مهر	فیزیوتراپیست دکتر سهیل منصور سوهانی
فیزیوتراپیست دکتر مهدی زمانلو	فیزیوتراپیست دکتر سلمان نظری مقدم
فیزیوتراپیست دکتر جواد صراف‌زاده	فیزیوتراپیست دکتر شهره نوری‌زاده دهکردی

اعضای کمیته اجرایی

رئیس کنگره: فیزیوتراپیست دکتر ایرج عبداللهی

دبیرعلمی کنگره: فیزیوتراپیست دکتر محمدرضا پوراحمدی

دبیر اجرایی کنگره: فیزیوتراپیست همایون آبایی

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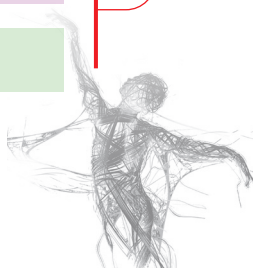

مسئول کمیته دانشجویی: فیزیوتراپیست دکتر ناهید رحمانی

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مسئول دبیرخانه کنگره: سرکار خانم الهه کرامتی

مسئول غرفه انجمن : سرکار خانم رها قربانی

مسئول پذیرایی میان وعده و ناهار: فیزیوتراپیست دکتر حمید زمانی، فیزیوتراپیست محمد مسعودی

مسئول میهمانان ویژه : فیزیوتراپیست نیلوفر رضایی

مجری افتتاحیه کنگره : دکتر زهرا شاهین فر

مجری کنگره : فیزیوتراپیست مرضیه کردی

مسئول طراحی لوگو و پوستر کنگره : شرکت میرماه

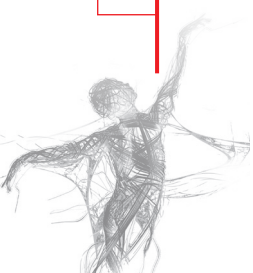
رابط مطبوعاتی : سمیرا محمد علی

مسئول پرتال کنگره و امور ثبت‌نام و گواهی‌ها: شرکت همایش برنا،مهندس قاضی عسگر، مهندس گوران

مسئول عکس و فیلمبرداری: محمد فراهانی

ناشر کتاب کنگره : رسانه تخصصی

خدمات : صمدحسین زاده، محسن شریفی



کادر دانشجویان اجرایی

فیزیوتراپیست حمید شاملو راد	فیزیوتراپیست اشکان صادقی
فیزیوتراپیست مبینا احمدی	فیزیوتراپیست موسی الرضا باقری
فیزیوتراپیست محمد مهدی قربانی	امیر حسین رحیمی
فیزیوتراپیست علیرضا یاثری گوهری	علی آشیانی
فیزیوتراپیست فرخ ناز دهقانی	سونیا الماسی
فیزیوتراپیست جواد حدادی	امیر عباس خضرپور
فیزیوتراپیست مجید رجبیان	مبینا قاسمی
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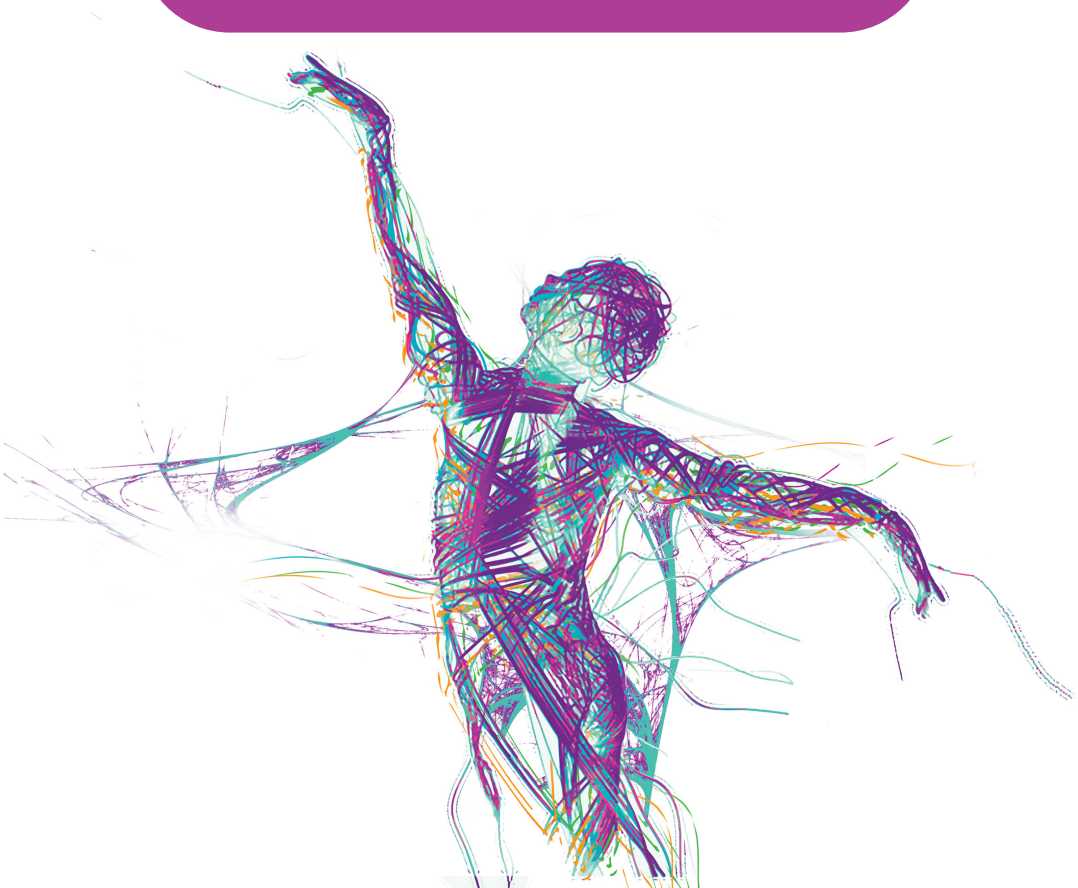
فیزیوتراپیست پیام زرگران	مهدی موجی
فیزیوتراپیست مریم مهدی زاده	عابدین ستایش
فیزیوتراپیست امین فروهی	ماردین رحیمی

چهارمین کنگره بین المللی
و سی و پنجمین کنگره سالیانه
انجمن فیزیوتراپی ایران

برنامه روزانه کنگره



روز اول

چهارشنبه ۱۴۰۳/۰۷/۰۴

سالن اصلی

زمان	مشروح برنامه
۸:۰۰-۸:۴۵	افتتاحیه
	قرائت قرآن و پخش سرود جمهوری اسلامی ایران
	خیر مقدم رئیس انجمن فیزیوتراپی ایران: فیزیوتراپیست دکتر ایرج عبداللهی
	سخنرانی وزیر بهداشت، درمان و آموزش پزشکی: دکتر محمّدرضا ظفرقندی
	سخنرانی معاون آموزشی وزیر بهداشت، درمان و آموزش پزشکی: دکتر ابوالفضل باقری‌فرد
	سخنرانی ریاست نظام پزشکی جمهوری اسلامی: دکتر محمد رئیس‌زاده
	سخنرانی دبیر بورد فیزیوتراپی: فیزیوتراپیست دکتر اسماعیل ابراهیمی تکامجانی
	گزارش دبیر علمی کنگره فیزیوتراپی: فیزیوتراپیست دکتر محمدرضا پوراحمدی

عنوان پنل: Spinopelvic Alignment and Dislocation after Total Hip Arthroplasty

گرداننده پنل: دکتر سیّد جواد مرتضوی

زمان	عنوان	سخنران
۸:۴۵ – ۸:۵۳	Femoroacetabular impingement	**دکتر سیّد جواد مرتضوی** استاد گروه ارتوپدی، دانشگاه علوم پزشکی تهران
۸:۵۳-۸:۵۵	پرسش و پاسخ	
۸:۵۵ – ۹:۰۳	Relationship between pelvis and lumbar spine kinematics	**فیزیوتراپیست دکتر اسماعیل ابراهیمی تکامجانی** استاد گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی ایران
۹:۰۳ – ۹:۰۵	پرسش و پاسخ	
۹:۰۵ – ۹:۱۳	Spinopelvic alignment and low back pain after total hip arthroplasty	**فیزیوتراپیست دکتر محمّدرضا پوراحمدی** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی ایران
۹:۱۳-۹:۱۵	پرسش و پاسخ	
۹:۱۵-۹:۲۳	Total knee arthroplasty and low back pain	**دکتر هومن یحیی‌زاده** استادیار گروه ارتوپدی، دانشگاه علوم پزشکی ایران
۹:۲۳-۹:۲۵	پرسش و پاسخ	
۹:۲۵-۹:۳۳	Total knee arthroplasty and lumbar spine kinematics changes	**فیزیوتراپیست دکتر خسرو خادمی کلانتری** استاد گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی شهید بهشتی
۹:۳۳-۹:۳۵	پرسش و پاسخ	
۹:۳۵-۱۰:۳۰	Case Discussion	

عنوان پنل: فیزیوتراپی در سردرد گرداننده پنل: فیزیوتراپیست دکتر لیلا گودرزی		
زمان	**عنوان**	**سخنران**
۱۰:۳۰-۱۰:۴۵	تعریف انواع سردرد و red flags و تشخیص افتراقی در انواع سردردها	**دکتر گیو شریفی** استاد گروه جراحی مغز و اعصاب، دانشگاه علوم پزشکی شهید بهشتی
۱۰:۴۵-۱۱:۰۰	ساختارهای دخیل در سردردهای سرویکوژنیک	**فیزیوتراپیست دکتر امیر مسعود عرب** استادگروه آموزشی فیزیوتراپی، دانشگاه علوم توانبخشی و سلامت اجتماعی
۱۱:۰۰-۱۱:۱۵	اثرات تحریکات الکتریکی مغز در سردردها	**فیزیوتراپیست دکتر ایرج عبداللّهی** استاد گروه آموزشی فیزیوتراپی، دانشگاه علوم توانبخشی و سلامت اجتماعی
۱۱:۱۵-۱۱:۳۰	کاربردهای تکنیکهای مولیگان در انواع سردردها	**فیزیوتراپیست دکتر آزاده شادمهر** استاد گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی تهران
۱۱:۳۰-۱۱:۴۵	مروری بر جدیدترین گایدلاین‌ها در فیزیوتراپی سردرد	**فیزیوتراپیست دکتر لیلا گودرزی** استادیارگروه آموزشی فیزیوتراپی، دانشگاه علوم توانبخشی و سلامت اجتماعی
۱۱:۴۵-۱۲:۱۵	جمع‌بندی و پرسش و پاسخ	
۱۲:۱۵-۱۲:۴۵	Vestibular Physical Therapy	**فیزیوتراپیست کیارش نمیرانیان** دانشجوی کارشناسی ارشد فیزیوتراپی، دانشگاه علوم پزشکی تهران
۱۲:۴۵-۱۴:۰۰	نماز و ناهار	

ارائه مقالات سخنرانی هیئت رئیسه: فیزیوتراپیست دکتر علی الستی، فیزیوتراپیست محمّد زعیم‌زاده، فیزیوتراپیست حسن پرکار، فیزیوتراپیست دکتر رویا خانمحمدی، فیزیوتراپیست دکتر مهرناز کجباف والا		
زمان	**عنوان**	**سخنران**
۱۴:۰۰-۱۴:۴۰	External focus exercise	**Dr. Jan Dommerholt** Myopain Seminars, Bethesda, MD, USA
۱۴:۴۰-۱۴:۵۵	The Impact of Enhanced Neuromuscular Training on Muscle Morphology and Function in Individuals with Chronic Ankle Instability: A Randomized Controlled Trial	**فیزیوتراپیست دکتر خدیجه کاظمی** استادیار دانشگاه علوم پزشکی مازندران
۱۴:۵۵-۱۵:۱۰	Association between Spatiotemporal Gait Variability and Falls Self-Efficacy with Considering the Effect of Some Known Potential Confounders in Individuals with Chronic Stroke	**فیزیوتراپیست دکتر حسین اصغر حسینی** استادیار گروه فیزیوتراپی، دانشگاه علوم پزشکی مشهد
۱۵:۱۰-۱۵:۲۵	Additional effect of neuromuscular electrical stimulation in a conservative intervention on morphology and strength of abductor hallucis muscle and correction of hallux valgus deformity: a randomized controlled trial	**دکتر نسرین مولودی** دکترای تخصصی ارتز و پروتز
۱۵:۲۵-۱۵:۴۰	Road map for cervicogenic headache decision making	**فیزیوتراپیست دکتر مهرداد بهرامیان** Department of Physical Therapy, College of Health Science & Professions, University of North Georgia, Dahlonega, USA
۱۵:۴۰-۱۵:۵۵	The effect of cognitive exercises on foot tactile sensation of the diabetic patients with peripheral neuropathy symptoms	**فیزیوتراپیست مریم نیاءجلیلی** دانشجوی دکترای تخصصی فیزیوتراپی، دانشگاه علوم پزشکی شهید بهشتی

ارائه مقالات سخنرانی

هیئت رئیسه: فیزیوتراپیست دکتر امیر جنتی، فیزیوتراپیست احمد مؤذن‌زاده، فیزیوتراپیست دکتر احمدرضا عسگری آشتیانی،فیزیوتراپیست محسن صحرانورد، فیزیوتراپیست مهدی سرافراز

زمان	عنوان	سخنران
۱۶:۰۰-۱۶:۱۵	Total Hip Atrthroplasty Following Failed Internal Fixation of the Proximal Femoral Fractures	**دکتر افشین طاهری اعظم** عضو هیات علمی بیمارستان فرهیختگان دانشگاه آزاد اسلامی
۱۶:۱۵-۱۶:۳۰	Does adding neurodynamic techniques to a multimodal rehabilitation program affect neuropathy severity, nerve conduction parameters, quality of life, range of motion, and mechanosensitivity in patients with diabetic peripheral neuropathy? A randomized placebo-controlled trial	**فیزیوتراپیست مهدی آشوری** کارشناسی‌ارشد فیزیوتراپی
۱۶:۳۰-۱۶:۴۵	Virtual Reality Application in Spinal Cord Assessment and Rehabilitation	**فیزیوتراپیست دکتر غزال هاشمی زنوز** کاندیدای دکترای تخصصی فیزیوتراپی دانشگاه علوم توانبخشی و سلامت اجتماعی
۱۶:۴۵-۱۷:۰۰	The Effect of 12-week Aerobic and Lower Extremity Resistance Exercises on Healing of Foot Ulcers in Type 2 Diabetic Patients	**فیزیوتراپیست محمّدعلی شکوریان‌فرد** کارشناسی‌ارشد فیزیوتراپی
۱۷:۰۵-۱۷:۲۰	To compare the effects of mobilization and mobilization with movement on pain, function, range of motion and acromiohumeral distance in patients with chronic shoulder impingement syndrome	**فیزیوتراپیست دکتر احمدرضا عسگری آشتیانی** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی زاهدان
۱۷:۲۰-۱۷:۳۵	Breaking the Mold: the Cheneau Brace-Revolutionizing Scoliosis Treatment with Asymmetry	**زهرا هدایتی** دانشجوی دکترای تخصصی ارتز و پروتز دانشگاه علوم پزشکی ایران
۱۷:۳۵-۱۷:۵۰	Ultrasound Assessment of Gastrocnemius and Vastus Lateralis Muscle in Osteoporotic and Osteosarcopenic Women: A relation of muscle structure with FES	**فیزیوتراپیست الهام باقری یکتا** کارشناسی‌ارشد فیزیوتراپی
۱۷:۵۰-۱۸:۰۵	مقایسه اثر ۸ هفته تمرینات اصلاحی در آب و خشکی بر سندروم متقاطع فوقانی در دختران ۹ تا ۱۵ ساله	**فیزیوتراپیست دکتر عارف سعیدی** دکترای تخصصی آسیب‌شناسی ورزشی و حرکات اصلاحی

روز دوم

پنج‌شنبه ۱۴۰۳/۰۷/۰۵

سالن اصلی

عنوان پنل: Multidisciplinary Approach to AIS Treatment
گرداننده پنل: دکتر حسن قندهاری

زمان	عنوان	سخنران
۸:۰۰-۸:۱۲	SOSORT-based scoliosis treatment: update	**فیزیوتراپیست علیرضا درودیان** کارشناسی‌ارشد فیزیوتراپی
۸:۱۲-۸:۲۴	Psychological management and treatment (brace, surgery)	**دکتر آرزو صمدی** متخصص روانپزشکی
۸:۲۴-۸:۳۹	Physiotherapy, is technique important?	**فیزیوتراپیست گلناز صدریا** دانشجوی دکترای تخصصی فیزیوتراپی، دانشگاه علوم توانبخشی و سلامت اجتماعی
۸:۳۹-۸:۵۱	Chiropractic and scoliosis treatment	**دکتر محمّدعلی عموکرمی** دکترای حرفه‌ای کایروپراکتیک
۸:۵۱-۹:۰۶	Which brace is the best? Is there any preferences?	**دکتر طاهر بابایی** استادیار گروه آموزشی ارتز و پروتز، دانشگاه علوم پزشکی ایران
۹:۰۶-۹:۲۱	Surgical treatments update	**دکتر جواد معینی** فلوشیپ جراحی ستون‌فقرات
۹:۲۱-۹:۳۰	پرسش و پاسخ	
۹:۳۰-۹:۵۰	Case discussion	**دکتر حسن قندهاری** استاد گروه ارتوپدی، دانشگاه علوم پزشکی ایران
۹:۵۰-۱۰:۰۰	جمع‌بندی و پرسش و پاسخ	

زمان	عنوان	سخنران
عنوان پنل: Cartilage Injuries **گرداننده پنل: فیزیوتراپیست دکتر علیرضا شهاب**		
۱۰:۰۰–۱۰:۱۵	مقدمه‌ای بر آسیب‌های غضروف	**فیزیوتراپیست دکتر علیرضا شهاب** مسئول شاخه ورزشی انجمن فیزیوتراپی ایران، فیزیوتراپیست تیم ملی فوتبال ایران
۱۰:۱۵–۱۰:۳۰	Pathophysiology of cartilage injury and repair	**فیزیوتراپیست دکتر فرید زرّیه** فیزیوتراپیست تیم فوتبال پرسپولیس
۱۰:۳۰–۱۰:۴۵	Para-clinical aspect in cartilage in sport	**فیزیوتراپیست دکتر شاهین گوهرپی** دانشیار گروه آموزشی فیزیوتراپی دانشگاه علوم پزشکی جندی شاپور اهواز
۱۰:۴۵–۱۱:۰۰	Cartilage surgery: from simple to complex	**دکتر حمیدرضا یزدی** استادیار گروه ارتوپدی، دانشگاه علوم پزشکی ایران
۱۱:۰۰-۱۱:۱۵	Basic steps in rehabilitation of cartilage injury in sport	**فیزیوتراپیست دکتر سید محسن میر** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی تهران
۱۱:۱۵-۱۱:۳۰	Return to play after cartilage injury in sport	**فیزیوتراپیست دکتر سعید فیاض** دکترای تخصصی فیزیوتراپی Senior Lecturer in Sports Medicine at University of Sunderland, UK
عنوان پنل: Triangular fibrocartilage Complex Injuries **گرداننده پنل: فیزیوتراپیست دکتر سهیل منصور سوهانی**		
۱۱:۳۰-۱۱:۴۵	Differential Diagnosis of TFCC Injuries	**دکتر فرید نجد مظهر** استاد گروه ارتوپدی دانشگاه علوم پزشکی ایران
۱۱:۴۵-۱۲:۰۰	MRI in TFCC Injuries	**دکتر میثم ولایتی** متخصص رادیولوژی، بیمارستان اختر
۱۲:۰۰-۱۲:۱۵	تکنیک‌های جراحی در آسیب‌های TFCC	**دکتر محمود فتاحی بافقی** متخصص ارتوپدی، فوق تخصص جراحی دست و اعصاب محیطی
۱۲:۱۵-۱۲:۳۰	الکتروتراپی در آسیب‌های TFCC	**فیزیوتراپیست همایون ستوده** پیشکسوت فیزیوتراپی
۱۲:۳۰-۱۲:۴۵	درمان‌های دستی و تمرین درمانی در آسیب‌های TFCC	**فیزیوتراپیست دکتر سهیل منصور سوهانی** دانشیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی ایران
۱۲:۴۵-۱۳:۰۰	جمع‌بندی و پرسش و پاسخ	
۱۳:۰۰-۱۴:۰۰	نماز و ناهار	

ارائه مقالات سخنرانی هیئت رئیسه: فیزیوتراپیست دکتر محمّد اکبری، فیزیوتراپیست آراز توماج نسب، فیزیوتراپیست دکتر لاله آبادی مرند، فیزیوتراپیست محمّد محمّدنیا		
زمان	**عنوان**	**سخنران**
۱۴:۰۰-۱۴:۳۰	Fascial distortion model: the unification of manual therapy abilities	**Dr. Thorsten Fischer** Naturopath
۱۴:۳۰-۱۴:۴۵	The linear intra-articular motions of the temporomandibular joint in individuals with severe forward head posture: A cross-sectional study	**فیزیوتراپیست دکتر سیروس تقی‌زاده دلخوش** دانشیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی سمنان
۱۴:۴۵-۱۵:۰۰	The effect of dry needling on pain and central sensitization in women with chronic pelvic pain: a randomized controlled clinical trial with parallel groups	**فیزیوتراپیست نجمه صدقی‌مهر** دانشجوی دکترای تخصصی فیزیوتراپی، دانشگاه علوم پزشکی شیراز
۱۵:۰۰-۱۸:۰۰	**مجمع عمومی سالیانه انجمن فیزیوتراپی ایران**	

روز سوم

جمعه ۱۴۰۳/۰۷/۰۶

سالن اصلی

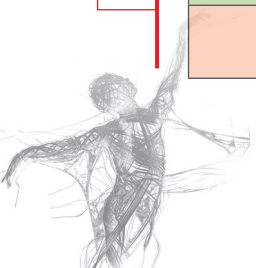
عنوان پنل: Premature Ejaculation
گرداننده پنل: فیزیوتراپیست ایلیا خواجه

زمان	عنوان	سخنران
۸:۰۰-۸:۱۵	Ejaculatory Dysfunctions: Physiology and Pathophysiology	**فیزیوتراپیست ایلیا خواجه** دانشجوی دکترای تخصصی فیزیوتراپی، دانشگاه علوم پزشکی ایران
۸:۱۵-۸:۳۰	Ejaculatory Dysfunctions: Medical Diagnosis and Management	**دکتر نیما نریمانی** استادیار گروه اورولوژی، دانشگاه علوم پزشکی ایران
۸:۳۰-۸:۴۵	Electrotherapy in Ejaculatory Dysfunctions	**فیزیوتراپیست دکتر سیده سعیده بابازاده زاویه** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی ایران
۸:۴۵-۹:۰۰	Exercise Therapy in Ejaculatory Dysfunctions	**فیزیوتراپیست دکتر هدا نیک‌نام** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی شهید بهشتی
۹:۰۰-۹:۳۰	جمع‌بندی و پرسش و پاسخ	

عنوان پنل: Rotator Cuff Tendinopathies
گرداننده پنل: فیزیوتراپیست دکتر هلاکو محسنی‌فر

زمان	عنوان	سخنران
۹:۳۰-۹:۴۵	Rotator Cuff Tendinopathies	**دکتر امیر سبحانی** دانشیار گروه ارتوپدی، دانشگاه علوم پزشکی ایران
۹:۴۵-۱۰:۰۰	MRI of Rotator Cuff Tear	**دکتر رضا صادقی** متخصص رادیولوژی، بیمارستان آتیه
۱۰:۰۰-۱۰:۱۵	درمان‌های دستی و اختلال حرکتی اسکاپولا در تندینوپاتی روتاتورکاف شانه	**دکتر هلاکو محسنی‌فر** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی ایران
۱۰:۱۵-۱۰:۳۰	تمرین درمانی در ضایعات تندینوپاتی روتاتور کاف شانه	**دکتر سلمان نظری‌مقدم** دانشیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی مشهد
۱۰:۳۰-۱۰:۴۵	بازگشت به ورزش بعد از آسیب‌ها و جراحی‌های شانه در ورزشکاران	**دکتر کسری کاظمی** دکترای تخصصی فیزیوتراپی
۱۰:۴۵-۱۱:۳۰	جمع‌بندی و پرسش و پاسخ	

عنوان پنل: فیزیوتراپی در عصر جدید: سیاست‌ها، راهبردها، راهکارها و اقدامات گرداننده پنل: فیزیوتراپیست دکتر محمّدجعفر شاطرزاده یزدی		
زمان	**عنوان**	**سخنران**
۱۱:۳۰-۱۱:۴۵	تشخیص-تجویز: کلیدواژگان ورود به عصر جدید فیزیوتراپی	**فیزیوتراپیست دکتر محمّدجعفر شاطرزاده یزدی** دانشیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی جندی‌شاپور اهواز
۱۱:۴۵-۱۲:۰۰	دیدگاه McGill در ارزیابی، تشخیص درمان سندروم‌های اختلال مکانیکی ستون‌فقرات کمری	**فیزیوتراپیست دکتر حسین نگهبان سیوکی** استاد گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی مشهد
۱۲:۰۰-۱۲:۱۵	Physiotherapy in Transition: Trends, Challenges, and Future Directions	**فیزیوتراپیست دکتر شاپور جابرزاده** Director of Non-invasive Brain Stimulation & Neuroplasticity Laboratory, Department of Physiotherapy, School of Primary and Allied Health Care (SPAHC), Monash University, Melbourne, Australia.
۱۲:۱۵-۱۲:۳۰	فیزیوتراپی در خط اول درمان	**فیزیوتراپیست اشکان آذرکیش** دانشجوی دکترای تخصصی فیزیوتراپی، دانشگاه علوم پزشکی شیراز
۱۲:۳۰-۱۲:۴۵	دیدگاه Delitto در مواجهه با کمردرد: اهمیت گروه‌بندی و همگن‌سازی بیماران در تشخیص و درمان	**فیزیوتراپیست دکتر فرشاد ملهمی** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی جندی‌شاپور اهواز
۱۲:۴۵-۱۳:۰۰	جمع‌بندی و پرسش و پاسخ	
۱۳:۰۰-۱۴:۰۰	نماز و ناهار	



ارائه مقالات سخنرانی

هیئت رئیسه: فیزیوتراپیست دکتر هلاکو محسنی‌فر، فیزیوتراپیست دکتر کامران عزّتی، فیزیوتراپیست دکتر احمدرضا نعمت‌الهی، فیزیوتراپیست دکتر حمید زمانی، فیزیوتراپیست عباس پیری

زمان	عنوان	سخنران
۱۴:۰۰-۱۴:۳۰	Myofascial Pain Syndrome	**Dr. Cesar Fernandez-de-las-Peñas** Professor, King Juan Carlos University, Spain
۱۴:۳۰-۱۴:۴۵	Evaluation of UT and SCM muscles Size reliability in migraine patients and healthy subjects using ultrasonography	**فیزیوتراپیست دکتر طاهره رضائیان کوچی** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی کرمان
۱۴:۴۵-۱۵:۰۰	Among the two interventions, McKenzie exercises and Kinesio taping, which one is a better choice for preventing neck musculo-skeletal disorders of smartphone users?	**فیزیوتراپیست دکتر احسان نعیمی** دکترای تخصصی فیزیوتراپی
۱۵:۰۰-۱۵:۱۵	Comparison of shoulder proprioception, upper extremity dynamic stability, and hand grip strength in overhead athletes with and without scapular dyskinesis	**فیزیوتراپیست فاطمه ریحانی** کارشناسی‌ارشد فیزیوتراپی
۱۵:۱۵-۱۵:۳۰	Cervical Multifidus and Longus Colli Ultrasound Differences among Patients with Cervical Disc Bulging, Protrusion and Extrusion and Asymp-tomatic Controls: A Cross-Sectional Study	**فیزیوتراپیست پیام غفوری روزبهانی** کارشناسی‌ارشد فیزیوتراپی
۱۵:۳۰-۱۵:۴۵	The Effect of Dry Needling on Main Risk Factors of Neuroischemic Diabetic Foot Ulcers	**فیزیوتراپیست فاطمه‌سادات حسن‌نیا** دانشجوی دکترای تخصصی فیزیوتراپی، دانشگاه علوم پزشکی تهران
۱۵:۴۵-۱۶:۰۰	The effect of high intensity interval training on mitochondrial expression of Mir-133 and MiR15 gene in the heart tissue of rats with myocardial infarction	**فیزیوتراپیست دکتر فاطمه بهشتی‌زاده** دکترای تخصصی فیزیولوژی

ارائه مقالات سخنرانی

هیئت رئیسه: فیزیوتراپیست دکتر افسانه زینل‌زاده قوچانی، فیزیوتراپیست دکتر مسعود غفرانی، فیزیوتراپیست دکتر کسری کاظمی، فیزیوتراپیست محمد صاحب علم

زمان	عنوان	سخنران
۱۶:۰۰-۱۶:۱۵	Effectiveness of Gait Training Using Dynamic Body weight Support System on Locomotor Abilities of Ambulatory Children With Different Neural Disorders	**فیزیوتراپیست دکتر افسانه زینل زاده قوچانی** دانشیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی مشهد
۱۶:۱۵-۱۶:۳۰	Approximate entropy as the complementary parameter for understanding the static stability concept in postmenopausal women with and without osteoporosis	**فیزیوتراپیست ساناز محبی** کارشناسی‌ارشد فیزیوتراپی
۱۶:۳۰-۱۶:۴۵	Shear-Wave Elastography of Sternocleido-mastoid Muscle during Craniocervical Flexion Movement under Different functional Positions in Individuals with and without Chronic Non-Specific Neck Pain	**فیزیوتراپیست ابراهیم رمضانی** دانشجوی دکترای تخصصی فیزیوتراپی، دانشگاه علوم پزشکی ایران
۱۶:۴۵-۱۷:۰۰	Comparison of Lumbar Segmental Stabilization and General Exercises on Clinical and Radiologic Criteria in Grade-I Spondylolisthesis Patients: A Double-Blind Randomized Controlled Tria	**فیزیوتراپیست الهه محمدی مجد** کارشناسی‌ارشد فیزیوتراپی
۱۷:۰۰-۱۷:۱۵	The effect of high power laser therapy on pain, functional disability, range of motion and pressure pain threshold in subjects with radicular low back pain due to intervertebral disc herniation	**فیزیوتراپیست سیدمصطفی تیموری** کارشناسی‌ارشد فیزیوتراپی
۱۷:۱۵-۱۷:۳۰	Assessing the Reliability of the Strength-Index: A Dynamic Indicator of Inspiratory Muscle Strength in Preoperative Cardiac Surgery Candidates	**فیزیوتراپیست بهاره مهرگان‌فر** دانشجوی دکترای تخصصی فیزیوتراپی، دانشگاه علوم پزشکی شهید بهشتی
۱۷:۳۰-۱۸:۰۰	**اختتامیه**	

روز اول

چهارشنبه ۱۴۰۳/۰۷/۰۴

سالن هگمتانه

عنوان پنل: نقش فیزیوتراپی در پیشگیری از آسیب‌های عصبی–عضلانی–اسکلتی
گرداننده پنل: فیزیوتراپیست دکتر رسول باقری

زمان	عنوان	سخنران
۹:۰۰ – ۹:۱۵	نقش فیزیوتراپی در پیشگیری از آسیب‌های شغلی	**فیزیوتراپیست دکتر حمیدرضا مختاری‌نیا** دانشیار گروه آموزشی ارگونومی، دانشگاه علوم توانبخشی و سلامت اجتماعی
۹:۱۵ – ۹:۳۰	نقش فیزیوتراپی در پیشگیری از اختلالات عضلانی-اسکلتی مرتبط با بیماری دیابت	**فیزیوتراپیست دکتر محمّدرضا اسدی** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی همدان
۹:۳۰ – ۹:۴۵	نقش فیزیوتراپی در fitness (شامل تمرین درمانی و نقش آن در سالمندی و قلبی-عروقی)	**فیزیوتراپیست دکتر پریسا ارزانی** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی سمنان
۹:۴۵ – ۱۰:۰۰	نقش فیزیوتراپی در پیشگیری از آسیب‌ها و دردهای عضلانی-اسکلتی	**فیزیوتراپیست دکتر ارسلان قربانپور** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی تهران
۱۰:۱۵-۱۰:۳۰	نقش فیزیوتراپی در پیشگیری از آسیب‌های ورزشی	**فیزیوتراپیست دکتر رسول باقری** دانشیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی سمنان
۱۰:۳۰-۱۱:۰۰	جمع‌بندی و پرسش و پاسخ	

عنوان پنل: فیزیوتراپی تنفسی در اطفال و کودکان

گرداننده پنل: فیزیوتراپیست دکتر ناهید رحمانی

زمان	عنوان	سخنران
۱۱:۱۵-۱۱:۳۵	نگاهی به ریه اطفال و مشکلات آسپیریشن در آنها	**دکتر صدیقه یوسف‌زادگان** استادیار گروه کودکان و ریه کودکان، دانشگاه علوم پزشکی ایران
۱۱:۳۵-۱۱:۵۰	اهمیت فیزیوتراپی تنفسی در اطفال و کودکان	**فیزیوتراپیست دکتر ناهید رحمانی** استادیار گروه آموزشی فیزیوتراپی دانشگاه، علوم توانبخشی و سلامت اجتماعی
۱۱:۵۰-۱۲:۰۵	فیزیوتراپی تنفسی در NICU	**فیزیوتراپیست ام‌البنین علیرضایی** فیزیوتراپیست بیمارستان مرکز طبی کودکان
۱۲:۰۵-۱۲:۲۰	نقش ورزش و حرکت‌درمانی و تمرینات کششی و پوسچرال بدن در بهبود تهویه ریه و کیفیت زندگی در کودکان مبتلا به COPD	**فیزیوتراپیست دکتر محسن عابدی** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی شهید بهشتی
۱۲:۲۰-۱۲:۳۵	فیزیوتراپی ریوی در کودکان مبتلا به CF	**فیزیوتراپیست ملیحه حاتمی‌نیا** فیزیوتراپیست بیمارستان کودکان مفید
۱۲:۳۵-۱۳:۰۰	جمع‌بندی و پرسش و پاسخ	
۱۳:۰۰-۱۴:۰۰	نماز و ناهار	

زمان	عنوان	سخنران	انجمن فیزیوتراپی ایران با همکاری شرکت
۱۴:۰۰-۱۶:۰۰	کاربردهای مدالیتی‌های درمانی در فیزیوتراپی	**فیزیوتراپیست دکتر محمّد پوراعتضاد** دکترای تخصصی فیزیوتراپی	اکسون
۱۶:۰۰-۱۸:۰۰	آخرین یافته‌ها از میزان اثربخشی تمرین‌های توانبخشی با دستگاه تعلیق وزن دینامیک	**دکتر رضا لطفی** دکترای تخصصی مهندسی برق **فیزیوتراپیست دکتر افسانه زینل‌زاده قوچانی** دکترای تخصصی فیزیوتراپی	پیام‌آوران هنر و فناوری شرق

روز دوم

پنج‌شنبه ۱۴۰۳/۰۷/۰۵

سالن هگمتانه

عنوان پنل: فیزیوتراپی در مالتیپل اسکلروزیس
گرداننده پنل: فیزیوتراپیست دکتر مهدی دادگو

زمان	عنوان سخنرانی	سخنران
۸:۰۰-۸:۱۵	علائم و نشانه‌های بروز مالتیپل اسکلروزیس و اهمیت تشخیص زودرس براساس بروز اولین علائم	**دکتر مجتبی عظیمیان** دانشیار دانشگاه علوم توانبخشی و سلامت اجتماعی
۸:۱۵-۸:۲۵	Holistic approach in the management of Multiple Scoliosis	**دکتر سید منصور رایگانی** استاد گروه طب فیزیکی و توانبخشی، دانشگاه علوم پزشکی شهید بهشتی
۸:۲۵-۸:۴۰	تمرین درمانی در بیماران مبتلا به مالتیپل اسکلروزیس	**فیزیوتراپیست دکتر مهدی دادگو** دانشیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی ایران
۸:۴۰-۸:۵۵	An update on recent strategies of physical therapy in multiple sclerosis	**فیزیوتراپیست دکتر محمّدحسن آذرسا** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم توانبخشی و سلامت اجتماعی
۸:۵۵-۹:۱۰	Transcranial electrical stimulation in patients with multiple sclerosis	**فیزیوتراپیست دکتر حمزه بهارلوئی** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی اصفهان
۹:۱۰-۱۰:۰۰	جمع‌بندی و پرسش و پاسخ	

عنوان پنل: مدیریت زخم
گرداننده پنل: فیزیوتراپیست دکتر جواد صراف‌زاده

زمان	عنوان	سخنران
۱۰:۰۰-۱۰:۱۵	Wound dressing and characteristic in wound management	**عباس مقیمی** کارشناسی‌ارشد پرستاری، بیمارستان سوانح سوختگی شهید مطهری
۱۰:۱۵-۱۰:۳۰	راهکارهای کنترل درد و کیفیت زندگی در بیماران	**فیزیوتراپیست دکتر سیامک بشردوست** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی تهران
۱۰:۳۰-۱۰:۴۵	کاربرد لیزردرمانی در مدیریت زخم	**دکتر جعفر بایرامی** فوق تخصص روماتولوژی، عضو انجمن پزشکی لیزری ایران
۱۰:۴۵-۱۱:۰۰	The effect of electrical stimulation on wound healing	**فیزیوتراپیست دکتر منیژه سلیمانی‌فر** استادیار جهاد دانشگاهی علوم پزشکی تهران، پژوهشکده زخم و ترمیم بافت
۱۱:۰۰-۱۱:۱۵	Burn wound healing considerations and physiotherapy interventions in the hospital	**فیزیوتراپیست دکتر رقیه محمّدی** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم توانبخشی و سلامت اجتماعی
۱۱:۱۵-۱۲:۰۰	جمع‌بندی و پرسش و پاسخ	

ارائه مقالات سخنرانی
هیئت رئیسه: فیزیوتراپیست دکتر سید مجید حسینی ، فیزیوتراپیست دکتر احسان قاسمی، فیزیوتراپیست دکتر سمیه محمّدی

زمان	عنوان	سخنران
۱۲:۰۰-۱۲:۳۰	Oncology Rehabilitation	**فیزیوتراپیست دکتر سام اسلامی** دکترای حرفه‌ای فیزیوتراپی
۱۲:۳۰-۱۲:۴۵	Investigating the effect of Nintendo Wii on Clinical and Neural Properties of ankle spasticity in patients with stroke: a randomized clinical trial	**فیزیوتراپیست دکتر احسان قاسمی** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی اصفهان
۱۲:۴۵-۱۳:۰۰	Effect of shockwave therapy on Peyronie's disease (Houshang Emami Mahtaj)	**فیزیوتراپیست هوشنگ امامی** کارشناسی‌ارشد فیزیوتراپی
۱۳:۰۰-۱۴:۰۰	نماز و ناهار	

ارائه مقالات سخنرانی

هیئت رئیسه: فیزیوتراپیست دکتر زینت آشناگر، فیزیوتراپیست دکتر سیده سعیده بابازاده زاویه، فیزیوتراپیست زینب واشقانی، فیزیوتراپیست دکتر ندا مصطفایی، فیزیوتراپیست دکتر عارف سعیدی

زمان	عنوان سخنرانی	سخنران
۱۵:۰۰-۱۵:۱۵	The added value of performing cognitive tasks while applying whole body vibration on balance indices and cognition in patients with multiple sclerosis	**فیزیوتراپیست مهسا بادپا** کارشناسی‌ارشد فیزیوتراپی، دانشگاه علوم پزشکی شیراز
۱۵:۱۵-۱۵:۳۰	A study on the effects of dry needling on the intrinsic and functional characteristics of spastic hand muscles: A randomized clinical trial	**فیزیوتراپیست دکتر فاطمه پناهی** دکترای تخصصی فیزیوتراپی
۱۵:۳۰-۱۵:۴۵	The Impact of Sacroiliac Belt Application on Lumbopelvic Muscle Activation in Patients with Unilateral Sacroiliac Joint Instability During Various Loading Conditions	**فیزیوتراپیست دکتر سروناز کریمی** استادیار گروه آموزشی فیزیوتراپی دانشگاه علوم پزشکی گیلان
۱۵:۴۵-۱۶:۰۰	Comparison the effect of dual task balance training with single task balance training in patients with anterior cruciate ligament reconstruction: A randomized clinical trial	**فیزیوتراپیست دکتر ندا مصطفایی** دانشیار گروه آموزشی فیزیوتراپی دانشگاه علوم پزشکی مشهد

ارائه مقالات سخنرانی

هیئت رئیسه: فیزیوتراپیست دکتر لیلا گودرزی، فیزیوتراپیست دکتر اکبر همتی، فیزیوتراپیست دکتر رقیه محمدی، فیزیوتراپیست دکتر بهرام امیرشاکری

زمان	عنوان سخنرانی	سخنران
۱۶:۰۰-۱۶:۱۵	بررسی دردهای میوفاشیال در اختلالات ستون‌فقرات: مطالعات توصیفی-تحلیلی در گردن، کمر و بعد از جراحی‌های ستون فقرات	**فیزیوتراپیست دکتر کامران عزّتی** دانشیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی گیلان
۱۶:۱۵-۱۶:۳۰	Comparison of the effects of transcranial direct current stimulation (tDCS) plus exercises with exercises alone on pain, function and balance in patellofemoral pain	**فیزیوتراپیست زهرا محتشم‌زاده** کارشناسی‌ارشد فیزیوتراپی
۱۶:۳۰-۱۶:۴۵	Comparison of the clinical and sonographic effects of Kinesio tape, Counterforce brace and Corticosteroid injection in lateral epicondylitis	**فیزیوتراپیست سید محمّدرضا حسینی** کارشناسی‌ارشد فیزیوتراپی
۱۶:۴۵-۱۷:۰۰	The effect of trunk-stabilizing muscles training in women with stress urinary incontinence: A Randomized Controlled Trial	**فیزیوتراپیست مائده فانی** دکترای تخصصی فیزیوتراپی
۱۷:۰۰-۱۷:۱۵	Comparing the effect of physiotherapy combined with manual lymphatic drainage massage with physiotherapy alone and manual lymphatic drainage alone on pain and volume of upper limb on breast cancer patients with lymphedema: A randomized controlled trial study	**فیزیوتراپیست شیما افتخار** کارشناسی‌ارشد فیزیوتراپی
۱۷:۱۵-۱۷:۳۰	Strategies for the Development pf Physiotherapy in Iran from the Point of View of Physiotherapy Graduates: A Qualitative Study of the Content Analysis Type	**فیزیوتراپیست پریسا ناصریان خیابانی** دانشجوی کارشناسی‌ارشد فیزیوتراپی
۱۷:۳۰-۱۷:۴۵	Infrared Thermography in Physiotherapy	**فیزیوتراپیست دکتر هادی سرافراز** استادیار دانشگاه علوم پزشکی هرمزگان
۱۷:۴۵-۱۸:۰۰	Comparison of the effect of stabilization exercises in water with general exercises in water on the cross-sectional area and thickness of the Multifidus muscle and the thickness of the Transversus Abdominis muscle in women with non-specific chronic low back pain	**فیزیوتراپیست مائده جراحی** کارشناس فیزیوتراپی

روز سوم

جمعه ۱۴۰۳/۰۷/۰۶

سالن هگمتانه

عنوان پنل: نقش مدالیته‌های الکتروتراپی در مشکلات کف لگن خانم‌ها و آقایان
گرداننده پنل: فیزیوتراپیست شقایق فولادوندی

زمان	عنوان	سخنران
۸:۰۰-۸:۱۵	بایوفیدبک و تحریک الکتریکی درمشکلات کف لگن	**فیزیوتراپیست دکتر فریبا قادری** استاد گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی تبریز
۸:۱۵-۸:۲۵	لیزر در کف لگن	**فیزیوتراپیست دکتر سمیّه محمّدی** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم توانبخشی و سلامت اجتماعی
۸:۲۵-۸:۴۰	پلاسما و شاک‌ویو در کف لگن آقایان	**فیزیوتراپیست دکتر بصیر مجدالاسلامی** دکترای تخصصی فیزیوتراپی
۸:۴۰-۸:۵۵	تکارتراپی در مشکلات کف لگن	**فیزیوتراپیست زهرا چاکری** کارشناسی‌ارشد فیزیوتراپی
۸:۵۵-۹:۱۰	مگنت‌تراپی در مشکلات کف لگن	**فیزیوتراپیست شقایق فولاوندی** کارشناسی‌ارشد فیزیوتراپی، مسئول شاخه الکتروتراپی انجمن فیزیوتراپی ایران
۹:۱۰-۹:۳۰	جمع‌بندی و پرسش و پاسخ	

عنوان پنل: رویکردهای نوین فیزیوتراپی تنفسی در بیماری‌های ریوی و بخش‌های ویژه گرداننده پنل: فیزیوتراپیست دکتر مجید روانبخش		
زمان	**عنوان**	**سخنران**
۹:۳۰ – ۹:۴۵	انتخاب صحیح بیماران برای مداخلات فیزیوتراپی و تعیین سطح انتظار از درمان‌های فیزیوتراپی در بخش‌های بحرانی	**دکتر سید محمّدرضا هاشمیان** فوق تخصص ICU
۹:۴۵ – ۱۰:۰۰	بیماری‌های ریوی و تأثیر درمان‌های فیزیوتراپی در درمان آنها	**دکتر مریم السادات میرعنایت** دانشیار گروه بیماری‌های ریه، دانشگاه علوم پزشکی شهید بهشتی
۱۰:۰۰-۱۰:۱۵	اصول و روش‌های درمان فیزیوتراپی در بخش‌های بحرانی و بستری	**فیزیوتراپیست دکتر محسن عابدی** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی شهید بهشتی
۱۰:۱۵-۱۰:۳۰	شیوه‌های نوین در فیزیوتراپی تنفسی: با نگاهی به آینده	**فیزیوتراپیست دکتر مجید روانبخش** استادیار گروه آموزشی فیزیوتراپی دانشگاه علوم پزشکی جندی شاپور اهواز
۱۰:۳۰-۱۱:۰۰	جمع‌بندی و پرسش و پاسخ	

ارائه مقالات سخنرانی

هیئت رئیسه: فیزیوتراپیست یوسف شیخانی، فیزیوتراپیست موسی طیبی‌فر، فیزیوتراپیست نوشین افتخاری، فیزیوتراپیست دکتر سحر بوذری، فیزیوتراپیست دکتر تورج رحمانی

زمان	عنوان	سخنران
۱۱:۰۰-۱۱:۱۵	Beyond the obvious: A case presentation on the misdiagnosis of posterior femoral cutaneous nerve entrapment as semitendinosus muscle tear	**فیزیوتراپیست علیرضا یاثری گوهری** دانشجوی کارشناسی ارشد فیزیوتراپی ورزشی، دانشگاه علوم پزشکی ایران
۱۱:۱۵-۱۱:۳۰	Evaluation of comprehensive physiotherapy on pain, functionality, strength and joint space in military men with dynamic knee valgus	**فیزیوتراپیست دکتر سعید میکائیلی** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی شهید بهشتی
۱۱:۳۰-۱۱:۴۵	Non-specific chronic Low back pain subject's exhibit distinct pelvic and lower limb kinematic strategies during Stand-to-sit task: A cross-sectional study	**فیزیوتراپیست دکتر فاطمه قاسمی ده‌چشمه** دکترای تخصصی فیزیوتراپی
۱۱:۴۵-۱۲:۰۰	Effect of multidimensional physiotherapy on non-specific chronic low back pain: a randomized controlled trial	**فیزیوتراپیست دکتر ساناز بمانی** دکترای تخصصی فیزیوتراپی
۱۲:۰۰-۱۲:۱۵	The effect of expiratory volume techniques to oxygenation and expiratory volume in premature infants with respiratoy distress syndrome	**فیزیوتراپیست ندا مددی‌زاده** کارشناسی ارشد فیزیوتراپی
۱۲:۱۵-۱۲:۳۰	Comparing the effects of multi-session anodal trans-cranial direct current stimulation of primary motor and dorsolateral prefrontal cortices on fatigue and quality of life in patients with multiple sclerosis: a double-blind, randomized, sham-controlled trial	**فیزیوتراپیست دکتر فاطمه احسانی** دانشیار گروه آموزشی فیزیوتراپی دانشگاه علوم پزشکی سمنان
۱۲:۳۰-۱۲:۴۰	Introduction to animal physiotherapy	**فیزیوتراپیست زینب واشقانی** کارشناسی ارشد فیزیوتراپی ورزشی
۱۲:۴۰-۱۲:۵۰	Surgery to physiotherapy intervertebral disk disease in canines	**دکتر مازیار منشئی** دامپزشک، بورد تخصصی جراحی دامپزشکی **فیزیوتراپیست علی برومند** دانشجوی دکترای تخصصی فیزیوتراپی دانشگاه علوم توانبخشی و سلامت اجتماعی
۱۲:۵۰-۱۳:۰۰	Physiotherapy in equine	**فیزیوتراپیست مجید رجبیان** دانشجوی کارشناسی‌ارشد فیزیوتراپی، دانشگاه علوم پزشکی تهران
۱۳:۱۵-۱۴:۰۰	نماز و ناهار	

روز دوم

پنج‌شنبه ۱۴۰۳/۰۷/۰۵

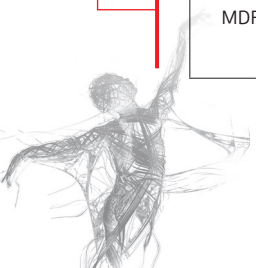
سالن مولوی

عنوان پنل: خطاها و قصورات فیزیوتراپی
گرداننده پنل: فیزیوتراپیست دکتر علی امیری

زمان	عنوان	سخنران
۹:۰۰ – ۹:۱۵	خطاها و قصورات فیزیوتراپی	**فیزیوتراپیست اشکان آذرکیش** دانشجوی دکترای تخصصی فیزیوتراپی، دانشگاه علوم پزشکی شیراز
۹:۱۵ – ۹:۳۰	خطاها و قصورات فیزیوتراپی	**فیزیوتراپیست دکتر علی الستی** دکترای حرفه‌ای فیزیوتراپی
۹:۳۰ – ۹:۴۵	خطاها و قصورات فیزیوتراپی	**فیزیوتراپیست حمیدرضا رستمی** عضو هیئت مدیره نظام پزشکی استان همدان
۹:۴۵ – ۱۰:۰۰	خطاها و قصورات فیزیوتراپی	**فیزیوتراپیست دکتر زینت آشناگر** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی تهران
۱۰:۰۰-۱۰:۱۵	خطاها و قصورات فیزیوتراپی	**فیزیوتراپیست دکتر علی امیری** دانشیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی ایران
۱۰:۱۵-۱۰:۳۰	جمع‌بندی و پرسش و پاسخ	

زمان	عنوان	سخنران
۱۰:۳۰-۱۳:۰۰	استرین-کانتراسترین	**فیزیوتراپیست دکتر زینت آشناگر** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی تهران
۱۳:۰۰-۱۴:۰۰	نماز و ناهار	

زمان	عنوان	سخنران	انجمن فیزیوتراپی ایران با همکاری شرکت
۱۴:۰۰-۱۶:۰۰	کاربردهای high tesla در آسیب‌های عضلانی-اسکلتی-عصبی	**فیزیوتراپیست دکتر سهیل منصور سوهانی** دانشیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی ایران	تجهیزات پزشکی MDF



روز سوم

جمعه ۱۴۰۳/۰۷/۰۶

سالن مولوی

عنوان پنل:
The role of physiotherapy in the inpatient management of complicated cardiac patients
گرداننده پنل: فیزیوتراپیست دکتر بهروز عطارباشی مقّدم

زمان	عنوان	سخنران
۸:۰۰-۸:۱۵	Diagnostic Approach for Heart Failure	**دکتر آتوسا مصطفوی** دانشیار گروه قلب و عروق، دانشگاه علوم پزشکی تهران
۸:۱۵-۸:۳۰	Physiotherapy Management of the Patients with Heart Failure	**فیزیوتراپیست دکتر بهروز عطارباشی مقّدم** استاد گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی تهران
۸:۳۰-۸:۴۵	Physiotherapy in Patients with Left Ventricular Assist Device (LVAD)	**فیزیوتراپیست دکتر مسعود غفرانی** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی تهران
۸:۴۵-۹:۰۰	Physiotherapy in Pulmonary Complications after Cardiac Surgery	**فیزیوتراپیست دکتر مریم‌السادات صبا** استادیار گروه آموزشی فیزیوتراپی، دانشگاه علوم پزشکی تهران
۹:۰۰-۹:۱۵	Understanding the psychosomatic effects of noise on cardiovascular system for physiotherapists	**فیزیوتراپیست دکتر بهنوش وثاقی قراملکی** دانشیار گروه آموزشی علوم‌پایه، دانشگاه علوم پزشکی ایران
۹:۱۵-۹:۳۰	جمع‌بندی و پرسش و پاسخ	

عنوان پنل: چالش‌های صنفی موجود در مراکز فیزیوتراپی گرداننده پنل: فیزیوتراپیست احمد موذن‌زاده		
زمان	**عنوان**	**سخنران**
۹:۳۰-۹:۴۵	ایمنی موسسات فیزیوتراپی از منظر معاونت درمان و اداره کار	**فیزیوتراپیست محمّد اکرم میرصادقی** کارشناس فیزیوتراپی **فیزیوتراپیست محمّدعلی مفتح** کارشناسی‌ارشد فیزیوتراپی
۹:۴۵-۱۰:۰۰	موسسه فیزیوتراپی یا دفتر کار؟	**فیزیوتراپیست احمد موذن‌زاده** کارشناسی‌ارشد فیزیوتراپی و نائب رئیس انجمن علمی فیزیوتراپی ایران
۱۰:۰۰-۱۰:۱۵	قانونمندسازی دستمزد فیزیوتراپیستها و چالش‌های موجود	**فیزیوتراپیست مرتضی احمدی** کارشناسی‌ارشد فیزیوتراپی **فیزیوتراپیست امین مرید مشتاق** کارشناس فیزیوتراپی
۱۰:۱۵-۱۰:۳۰	چالش‌های موجود در مراکز فیزیوتراپی از منظر روابط فی ما بین همکاران از جمله دامپینگ و بررسی نحوه برخود با آن	**فیزیوتراپیست یوسف شیخانی** کارشناس فیزیوتراپی **فیزیوتراپیست همایون آبایی** کارشناس فیزیوتراپی
۱۰:۳۰-۱۱:۰۰	جمع‌بندی و پرسش و پاسخ	

برنامه کارگاه‌ها

روز اول

چهارشنبه ۱۴۰۳/۰۷/۰۴

سالن هگمتانه

عنوان	مدرس	با همکاری شرکت	ساعت
کاربردهای مدالیتی های درمانی در فیزیوتراپی	**فیزیوتراپیست دکتر محمدپور اعتضاد** دکترای تخصصی فیزیوتراپی	EXON	۱۴:۰۰ – ۱۶:۰۰
آخرین یافته‌ها از میزان اثربخشی تمرین‌های توانبخشی با دستگاه تعلیق وزن دینامیک	**دکتر رضا لطفی** **فیزیوتراپیست دکتر افسانه زینل‌زاده قوچانی** دکترای تخصصی فیزیوتراپی	پیام‌آوران هنر و فناوری شرق	۱۶:۰۰ – ۱۸:۰۰

روز دوم

پنج‌شنبه ۱۴۰۳/۰۷/۰۵

سالن	عنوان	مدرس	با همکاری شرکت	ساعت
سالن۱	پلاسمای سرد در فیزیوتراپی	**فیزیوتراپیست دکتر بصیر مجدالاسلامی** دکترای تخصصی فیزیوتراپی	آویژه درمان	۱۰:۰۰ – ۱۲:۰۰
سالن۱	تحریکات الکتریکی	**فیزیوتراپیست دکتر جواد صراف زاده** دکترای تخصصی فیزیوتراپی **فیزیوتراپیست دکتر سیامک بشردوست** دکترای تخصصی فیزیوتراپی	ایران سپتا	۱۴:۰۰ – ۱۶:۰۰
سالن۱	تحوّل در فیزیوتراپی با هوش مصنوعی	**فیزیوتراپیست دکتر حسن شمسی** دکترای تخصصی فیزیوتراپی	مهندسی پزشکی نوین	۱۶:۰۰ – ۱۸:۰۰
سالن۲	ترموکول و مایوفاشیال ریلیز	**فیزیوتراپیست دکتر ارسلان قربانپور** دکترای تخصصی فیزیوتراپی	مهندسی پزشکی دنیز	۱۰:۰۰ – ۱۲:۰۰
سالن۲	تکارتراپی	**فیزیوتراپیست دکتر میلاد زرّین** دکترای تخصصی فیزیوتراپی	نگارپژوهان طب	۱۴:۰۰ – ۱۶:۰۰
سالن۲	آشنایی با اصول الکترواکوپانکچر	**فیزیوتراپیست دکتر وحید مظلوم** دکترای تخصصی آسیب‌شناسی ورزشی و حرکات اصلاحی	توسعه فناوری های نیازمحور	۱۶:۰۰ – ۱۸:۰۰
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چهارمین کنگره بین المللی
و سی و پنجمین کنگره سالیانه
انجمن فیزیوتراپی ایران

خلاصه مقالات

خلاصه مقالات
سخنرانی

Evaluation of comprehensive physiotherapy on pain, functionality, strength and joint space in military men with dynamic knee valgus

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Introduction: This study was designed to diagnose and treat Dynamic knee valgus (DKV) based on movement system impairment classification.t5r

Materials and Methods: Eighty men with DKV were randomly divided into experimental (n: 40, mean age: 20.07) and control groups (n: 40, mean age: 20.22). The control group received knee and hip strengthening exercises, and experimental group, in addition to strengthening exercises, received specific instructions in functional activities and posterior X taping. Clinical outcomes including pain intensity, physical function, strength of quadriceps, hip abductor, and hip external rotator muscles, and a sonographic parameter consisting of patellar condylar distance (PCD), were measured before and after six weeks of interventions.

Results: Significant improvements in all variables were observed in experimental group after intervention compared to control group ($P<0.05$). In within-group comparison, a significant improvement of pain intensity and strength of three muscle groups was observed in both groups after treatment compared to before treatment ($P<0.05$). The PCD and physical function had significant changes only in experimental group ($P<0.05$) but not in control group ($P>0.05$).

Conclusion: Comprehensive physiotherapy could lead to further improvement of clinical outcomes and joint space in military individuals with DKV. It seems that this therapeutic program may be an effective factor in reducing incidence of knee overuse injuries.

Keywords: Comprehensive physiotherapy Dynamic knee valgus

Beyond the obvious: A case presentation on the misdiagnosis of posterior femoral cutaneous nerve entrapment as semitendinosus muscle tear

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Introduction: A 42-year-old male dentist, initially diagnosed with a semitendinosus muscle tear and persistent pain and tingling in the posterior thigh, sought treatment at our outpatient clinic. Despite unsuccessful physiotherapy, a comprehensive evaluation revealed an unusual entrapment of the PFCN between the sacrotuberous ligament and the semitendinosus muscle stump. The patient was subjected to a series of specialized therapeutic interventions, including soft tissue release, kinesiology taping, and lifestyle modifications. The patient's symptoms, including pain and tingling, were completely resolved, enabling him to sit on a stool for extended periods without discomfort. This case presentation emphasizes the need for physical therapists to consider the possibility of PFCN entrapment in patients experiencing pain and tingling in the posterior thigh. These symptoms can be easily mistaken for conditions such as sciatica or a hamstring muscle tear.t5r

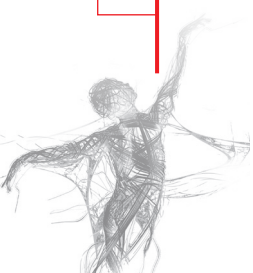
Materials and Methods: The patient exhibited a normal gait pattern, aligned posture, and symmetrical weight distribution on both legs. No signs of ecchymosis, edema, or muscle atrophy were observed at the site of symptoms. A scar tissue was observed below the patellar bone on the front of the right knee, attributed to ACL reconstruction surgery performed 5 years ago. It was clarified that the observed muscle asymmetry between the right and left thigh was a result of the surgical procedure rather than an acute traumatic high-grade tear of the semitendinosus muscle. During the examination, the right hip joint showed a full range of active and passive movements without associated pain. The isometric resistance test of the semitendinosus muscle in the affected leg showed reduced strength compared to the unaffected side but did not cause discomfort. To rule out lumbar spine, sacroiliac joint, and piriformis muscle disorders, several special tests were conducted. In order to assess the PFCN near the sacrotuberous ligament, the examiner exerted pressure on the nerve situated between the sacrotuberous ligament and the stump of the semitendinosus muscle using his thumbs. The patient's symptoms were triggered in a way that matched his initial complaints. However, applying pressure along the path of the nerve branch in the thigh did not elicit these symptoms. The primary goal of the procedure was to relieve tension in the sacrotuberous ligament. The physical therapist employed a two-handed technique, with one hand positioned on the ischial tuberosity side of the ligament and the other hand performing small, back-and-forth sliding motions. This method was employed to initially relax

and subsequently stretch the sacrotuberous ligament. In addition, kinesiology taping was applied to reduce soft tissue tension near the PFCN. Furthermore, the patient was advised to use a small cushion when sitting on a stool to provide support.

Results:

Conclusion: This case presentation describes an interesting scenario involving a male dentist who was referred to our physical therapy clinic with complaints of pain and tingling in the posterior portion of the thigh. Initially, he was misdiagnosed with a torn semitendinosus muscle. However, upon detailed examination, it was discovered that the pain and symptoms were actually caused by entrapment of the PFCN between the sacrotuberous ligament and the stump of the semitendinosus muscle. To address this issue, a manual technique was used to release the entrapped ligament, followed by the application of kinesiology taping on the sacrotuberous ligament and the semitendinosus muscle. Remarkably, these interventions led to a complete resolution of the patient's symptoms.

Keywords: hamstring, nerve, PFCN, sacrotuberous ligament



Non-specific chronic Low back pain subject's exhibit distinct pelvic and lower limb kinematic strategies during Stand-to-sit task: A cross sectional study

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Introduction: Objectives: It is crucial to investigate the daily activities commonly performed by individuals with low back pain (LBP) due to their impact on recurrence and chronicity. The stand-to-sit (StandTS) task is one of the most frequently repeated actions in daily life. This study aims to compare the pelvic and lower limb joint kinematics on both sides during the 'StandTS' task in individuals with non-specific chronic low back pain (NSCLBP) with those in a healthy control group through Functional data analysis statistical approach.t5r

Materials and Methods: Methods: During the StandTS task, pelvic and lower limb joint kinematic data in all three planes were recorded from both sides in 20 individuals with NSCLBP and 20 healthy individuals using a seven-camera Qualisys motion capture system. A Functional data analysis statistical approach was used to compare the kinematic data between the two groups. In the current study with the aim of a more detailed investigation, the 'StandTS' task was divided into two phases: (A) the Pre-Buttocks Contact (Pre-BC) phase and (B) the Post-Buttocks Contact (Post-BC) phase

Results: Results: In the initial phase of the movement, we observed a greater anterior pelvic tilt (P= 0.028) and an altered pelvic frontal plane motion pattern (P= 0.029) in the LBP compared to the healthy group. The only significant difference between the lower limb joint kinematics of the two groups were a less hip external rotation position (P= 0.025) and a more knee adduction pattern (P= 0.002) on the right (dominant) side in the LBP subjects compared to healthy group. Overally the findings of this study revealed distinct kinematic patterns in the pelvic region, especially in the sagittal and frontal planes, between the two groups. There was no significant difference in the kinematic patterns of the non-dominant lower limbs between the NSCLBP and healthy groups during the 'StandTS' task. However, notable differences were observed in the kinematic patterns of the hip and knee regions on the dominant side.

Conclusion: Conclusion: Based on the findings of this study, analyzing the kinematics of one side in individuals with NSCLBP does not provide an accurate assessment of joint kinematics on both sides. It appears that changes in kinematic patterns among individuals with LBP occur more prominently in proximal areas rather than in distal joints of the lower limb during the execution of this task. The pelvis exhibits a distinct kinematic pattern between the two groups of individuals with LBP during the performance of this task, serving as a crucial link between the lumbar region and the lower limb joints. Therefore, during this task among these patients, therapists should focus not only on changes in the movement pattern in the sagittal plane but also in all three movement planes. It appears that during the execution of this task, the motion control system prioritizes maintaining stability, focusing primarily on preventing falls in the direction of gravity.

Keywords: stand-to-sit kinematics 3D-motion-analysis lower-limbs low-back-pain

Effect of multidimensional physiotherapy on non-specific chronic low back pain: a randomized controlled trial

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Introduction: Background: Many people with non-specific chronic low back pain (NSCLBP) do not recover with current conventional management. Systematic reviews show multidimensional treatment improves pain better than usual active interventions. It is unclear whether multidimensional physiotherapy improves pain better than usual physiotherapy. This study determines the effectiveness of this treatment to reduce pain and disability and improve quality of life, pain cognitions, and electroencephalographic pattern in individuals with NSCLBP.t5r

Materials and Methods: 70 eligible participants aged 18 to 50 years with NSCLBP were randomized into either the experimental group (multidimensional physiotherapy) or the active control group (usual physiotherapy). Pain intensity was measured as the primary outcome. Disability, quality of life, pain Catastrophizing, kinesiophobia, fear Avoidance Beliefs, active lumbar range of motion, and brain function were measured as secondary outcomes. The outcomes were measured at pre-treatment, post-treatment, 10, and 22 weeks. Data were analyzed using intention-to-treat approaches.

Results: There were 17 men and 18 women in the experimental group (mean [SD] age, 34.57 [6.98] years) and 18 men and 17 women in the active control group (mean [SD] age, 35.94 [7.51] years). Multidimensional physiotherapy was not more effective than usual physiotherapy at reducing pain intensity at the end of treatment. At the 10 weeks and 22 weeks follow-up, there were statistically significant differences between multidimensional physiotherapy and usual physiotherapy (mean difference at 10 weeks, -1.54; 95% CI, -2.59 to -0.49 and mean difference at 22 weeks, -2.20; 95% CI, - 3.25 to - 1.15). The standardized mean difference and their 95% confidence intervals (Cohen's d) revealed a large effect of pain at 22 weeks: (Cohen's d, -0.89; 95% CI (-1.38 to-0.39)). There were no statistically significant differences in secondary outcomes.

Conclusion: In this randomized controlled trial, multidimensional physiotherapy resulted in statistically and clinically significant improvements in pain compared to usual physiotherapy in individuals with NSCLBP at 10 and 22 weeks.

Keywords: Biopsychosocial Electroencephalography Pain

The effect of expiratory volume techniques to oxygenation and expiratory volume in premature infants with respiratoy distress syndrome

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Introduction: Chest physiotherapy in premature infants reduces respiratory work, improving oxygenation, and increasing expiration volume. Therefore, this study aimed to determine the effect of expiratory volume techniques to oxygenation and expiratory volume in premature infants with respiratory distress syndrome. t5r

Materials and Methods: In this randomized clinical trial, 32 premature infants with respiratory distress syndrome were included. The subjects were randomly divided into a routine chest physiotherapy group, and expiratory volume techniques group. Intervention was conducted two times per day for five days. Overall, FiO2, PEEP, PIP, MAP, respiratory rate, O2sat, and expiratory volume were evaluated before and after intervention with the ventilator system. Data were analyzed with the paired sample and independent t-tests ($p<0.05$).

Results: In the expiratory volume techniques group, the overall expiratory volume changed from 8.05± 3.1 to17.50±7.3, the FiO2 significantly changed from 71.7±22.0 to 42.0±11.8, the PEEP significantly changed from 6.20±0.5 to 5.80±0.4, the PIP significantly changed from 15.40±3.03 to 11.60±2.9, and the MAP significantly changed from 8.6±1.4 to 7.7±0.9 ($p<0.05$). There is no significant difference in the expiratory volume and FiO2 between routine chest physiotherapy and expiratory volume techniques groups ($p>0.05$).

Conclusion: According to the results of the study, the positive effects of expiratory volume techniques to oxygenation were shown, so we suggest that in addition to routine chest physiotherapy, expiratory volume techniques should also be considered in infants with respiratory distress syndrome.

Keywords: Chest physiothetapy, expiratory volume techniques

Comparing the effects of multi-session anodal trans-cranial direct current stimulation of primary motor and dorsolateral prefrontal cortices on fatigue and quality of life in patients with multiple sclerosis: a double-blind, randomized, sham-controlled tr

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Introduction: Some studies have shown that dorsolateral prefrontal cortex is a key brain region in the activity of fronto-frontal and fronto-parietal regions and also in the function of cortico-striato-thalamo-cortical network, which changes during fatigue in patients with multiple sclerosis. However, some neurophysiological studies indicated a significant association between increasing fatigue scores and decreasing rest functional connectivity of the supplementary motor area and primary motor cortex. The main aim of this study was to compare the effects of anodal trans-cranial direct current stimulation (a-tDCS) over primary motor and dorsolateral prefrontal cortices on Fatigue Severity Scale and its lasting effect on fatigue reduction and improvement in quality of life in patients with multiple sclerosis.t5r

Materials and Methods: A randomized, double-blinded, sham-controlled parallel clinical trial was design in this study. Thirty-nine participants were randomly assigned to three groups: dorsolateral prefrontal cortex a-tDCS, primary motor a-tDCS (experimental groups) and sham a-tDCS. Finally, 36 participants completed the whole study (n=12 in each group). Participants in the experimental groups received six-session a-tDCS (1.5mA, 20minutes) during two weeks (three sessions per week). The sham group received six sessions of 20-minute sham stimulation. The Fatigue Severity Scale and quality of life were assessed before, immediately and four weeks after the intervention.

Results: Findings indicated a significant reduction in the Fatigue Severity Scale and a significant increase in the quality of life in both experimental groups, immediately after the intervention ($P<0.001$), while Fatigue Severity Scale and quality of life changes were not significant in the sham a-tDCS group ($P>0.05$). In addition, improvement of the variables remained four weeks after the intervention in dorsolateral prefrontal cortex a-tDCS (mean differences (95% confidence interval): 0.03 (−0.63 to 0.68) as compared to primary motor (−0.62 (−0.11 to −1.14) and sham a-tDCS groups (−0.47 (−1.37 to 0.43)).

Conclusion: Both primary motor and dorsolateral prefrontal cortex a-tDCS as compared to sham intervention can immediately improve fatigue and quality of life. However, the effects last up to four weeks only by the dorsolateral prefrontal cortex a-tDCS.

Keywords: MS, tDCS, DLPFC, M1, fatigue

Does adding neurodynamic techniques to a multimodal rehabilitation program affect neuropathy severity, nerve conduction parameters, quality of life, range of motion, and mechanosensitivity in patients with diabetic peripheral neuropathy? A randomized plac

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Introduction: Diabetic Peripheral Neuropathy (DPN), affects 30% of type 2 diabetics, leading to severe foot problems. Existing treatments offer limited efficacy. This randomized controlled trial explores Neurodynamic Techniques (NDTs) for their impact on neuropathy severity, quality of life (QoL), nerve function, range of motion (ROM), and nerve mechanosensitivity in DPN patients.t5r

Materials and Methods: Forty DPN patients, confirmed by electrodiagnostic and laboratory tests, were randomized into real and sham tibial NDT groups. Both groups received standard treatments plus their respective NDTs. Outcome measurements included Michigan Diabetic Neuropathy Score (MDNS), QoL, tibial nerve conduction velocity, distal latency, amplitude of compound muscle action potential, F-wave latency, plantarflexion straight leg raise (PFSLR) ROM and dorsiflexion SLR (DFSLR) ROM tested to the first onset of symptoms (P1) and maximally tolerated symptoms (P2), and nerve mechanosensitivity.

Results: MDNS showed a significant mean difference (MD) of 4.59, Cohen's d: -0.92, MCID: 0.67, P-value < 0.05. QoL improved significantly (MD: 13.25, Cohen's d: -0.72, MCID: 5.10, P-value < 0.05). Nerve conduction parameters remained unchanged. Significant improvements were seen in PFSLRP1 ROM for both limbs (right limb MD: 3.35, Cohen's d: 0.37, MCID: 0.48; left limb MD: 4.40, Cohen's d: 0.56, MCID: 1.22, P-values < 0.05), and both limbs' PFSLRP2 ROM (right limb MD: 2.1, Cohen's d: 0.21, MCID: 0.94; left limb MD: 4.80, Cohen's d: 0.57, MCID: 0.58, P-values < 0.05). Left DFSLRP1 ROM also improved (MD: 2.35, Cohen's d: 0.28, MCID: 0.26, P-value < 0.05). Left tibial mechanosensitivity to P1 improved significantly (MD: 2.05, Cohen's d: -0.63, MCID: 0.72, P-value < 0.05).

Conclusion: While NDTs did not enhance nerve conduction parameters, they significantly reduced neuropathy severity and improved QoL and PFSLR ROM in DPN patients. These techniques could also improve nerve mechanosensitivity clinically.

Keywords: Diabetic neuropathy, nerve conduction studies

The effect of cognitive exercises on foot tactile sensation of the diabetic patients with peripheral neuropathy symptoms

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Introduction: The inactivity of people in today's societies has increased the disability of patients due to the complications of diabetic neuropathy. Physiotherapy is one of the treatment methods for this condition that helps to control diabetic neuropathy symptoms through infrared radiation, electrical stimulation, electromagnetic fields and exercise therapy .Cognitive exercises are one of the interventions that improve memory and cognition by affecting the frontal and prefrontal cortex. In addition, these exercises have been able to improve the balance and posture of the elderly. Meanwhile, the effect of cognitive exercises on the sensory symptoms of patients with diabetic neuropathy has not been investigated. Therefore, due to the lack of careful examination of the central part of treatment in controlling the tactile sensation in diabetics, the effect of cognitive exercises on this sense is investigated in this study.t5r

Materials and Methods: In this clinical trial, 24 diabetic patients with moderate symptoms of peripheral neuropathy were randomly divided into two treatment and control groups. In addition to common treatment including balance exercises and electrical stimulation, patients in the treatment group also received memory-activating cognitive exercises, while patients in the control group only benefited from common treatment. The measurement of the foot tactile sensation was done before and after 10 intervention sessions and after 6 weeks of follow-up.

Results: At the beginning of the study, there was no difference in the demographic indicators of the patients in the two groups($P>0.05$). After 10 treatment sessions, tactile sensation of feet improved significantly in both treatment and control groups. During the 6 weeks of follow-up, the improvement continued in both groups compared to the beginning of the study. This improvement was more in the treatment group than in the control to the end of the study period.

Conclusion: Cognitive exercises along with common treatment significantly improve the tactile sensation of the feet in patients with diabetic neuropathy. Therefore, due to its beneficial effects, it can be used in the rehabilitation programs of diabetic patients.

Keywords: neuropathy cognitive exercise tactile foot

Ultrasound Assessment of Gastrocnemius and Vastus Lateralis Muscle in Osteoporotic and Osteosarcopenic Women: A relation of muscle structure with FES

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Introduction: Objective: Osteoporosis (OP) and osteosarcopenia (OS) are prevalent conditions in elderly women, posing a significant risk for falls, fractures, and functional decline. This study investigates sonographic characteristics of the gastrocnemius medialis (GM) and vastus lateralis (VL) muscles and their association with the Fall Efficacy Scale (FES).t5r

Materials and Methods: Methods: Forty-two women aged over 60 volunteered for this study. Participants were categorized into Osteosarcopenic (T-score ≤ −2.5, appendicular muscle mass < 5.5 kg/m^2, and hand grip strength < 20 kg) and osteoporotic (T-score ≤ −2.5) groups. Musculoskeletal sonography assessed muscle thickness (MT) and echogenicity (EI) during rest and isometric activity, while FES was self-reported.

Results: Results: MT of GM and VL was significantly lower in the OS group compared to the OP group during rest and activation(P < 0.05). OS group exhibited higher EI during rest (P = 0.001) and isometric activity (P < 0.001) than the OP group. Positive correlations were observed between MT/EI of GM and VL and FES (P < 0.05). In addition there was a positive correlation between the appendicular muscle mass and FES (P=0.000).

Conclusion: Conclusion: Osteosarcopenic women, characterized by low MT and high EI, constitute a high-risk population for falls and functional decline. Screening muscle structure, muscle mass, and strength in osteoporotic women may be crucial, as sarcopenia exacerbates fall risk in this group.

Keywords: Osteosarcopenia, osteoporosis, musculoskeletal sonography, FES

The effect of high power laser therapy on pain, functional disability, range of motion and pressure pain threshold in subjects with radicular low back pain due to intervertebral disc herniation

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Introduction: Back pain is a prevalent musculoskeletal disorder. This complication is a primary cause of mandatory work leave, functional disability, and premature retirement. Despite the existence of numerous clinical trials studying the efficacy of high-power lasers, none have proposed a standardized protocol for their use. The aim of this study is to establish a comprehensive protocol for treating radicular back pain with high-power lasers, based on existing evidence.t5r

Materials and Methods: The study included 36 patients, aged between 20 and 60 years, diagnosed with radicular back pain due to intervertebral disc herniation by a specialist. The treatment regimen for this study comprised MCE exercises, for both groups, and active high-power laser treatment for the intervention group, with the control group receiving silent high-power laser treatment. The primary outcome of this study was the Visual Analogue Scale (VAS) of the lower back and lower limbs. Secondary outcomes included functional disability, as measured by the Oswestry Disability Index, range of motion of forward bending as assessed by the Modified-Modified Schober Test, and the painful pressure threshold of points in the lumbar region and points of the sciatic, tibial, and fibular nerves.

Results: 18 women and 18 men, with an average age of 41.33 (SD=11.19) years in the intervention group and 41.11 (SD=8.53) years in the control group. Statistical analyses revealed that HILT had a substantial effect (effect size = -1.278) on the lumbar VAS (LVAS) (mean difference = -2.046, 95% confidence interval = -3.223 to -0.869, P-value=0.002). The effectiveness on the ROM during SLR at the end of the treatment (effect size=0.978) and one month post-treatment (effect size=1.898) was reported to be significantly different from the control group (P-value<0.001). Moreover, the high-power laser treatment had a large effect size on ODI (effect size=-1.037) and MMST (effect size=0.844) and tibial PPT (tPPT) (effect size= 1.024) in the long term, with a significant difference (P-value<0.05). However, the photobiomodulation treatment did not yield any statistically significant difference (p-value > 0.05) on other outcomes of this study, and the effect size ranged from insignificant to small.

Conclusion: The statistical findings of this study suggest that high-power laser treatment can improve the severity of back pain, radicular lower limb pain, functional disability, range of motion of lumbar and lower limb, and the painful pressure threshold of the tibial nerve in patients with radicular back pain. However, adding this treatment to the standard basic treatment did not enhance the results of the pressure pain threshold in the lumbar region.

Keywords: sciatica lasertherapy pain functionalDisability ROM

Association between Spatiotemporal Gait Variability and Falls Self-Efficacy with Considering the Effect of Some Known Potential Confounders in Individuals with Chronic Stroke

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Introduction: To investigate the relationship between spatiotemporal gait variability and falls self-efficacy after chronic stroke while taking into account the effect of some known potential confounders including fall numbers and gait velocity.t5r

Materials and Methods: Participants with chronic stroke (n=62) who were able to walk 10m without assistive device walked at their preferred speed to calculate gait variability for stride time, stride length, swing time and double-support percent. The Falls Efficacy Scale-International (FES-I) assessed falls self-efficacy. Sequential multiple regression analyses were performed to determine how much of the variance in each gait variability measure (dependent variables) can be explained by falls self-efficacy adjusted on age, sex, time since stroke, paretic side, motor impairment, fall numbers and gait velocity (independent variables).

Results: Increased FES-I score was related to higher stride time variability ($R2 = .65$, $F(8,53) = 15.44$, $P < .05$). Increased FES-I was associated with higher stride length variability ($R2 = .42$, $F(6,55) = 8.44$, $P < .05$). However, further adjustment on gait velocity and fall numbers made the association non-significant ($R2 = .41$, $F(8,53) = 6.4$, $P > .05$). No significant relationship was identified between FES-I and swing time ($R2 = .08$, $F(8,53) = .39$, $P > .05$), and, FES-I and double-support percent variability ($R2 = .04$, $F(8,53) = .67$, $P > .05$).

Conclusion: The results indicate that increased FES-I score may be related to increased stride variability post-stroke even after adjustment for some known potential confounders including gait velocity and fall history. Hence, the evaluation of falls self-efficacy among individuals with stroke might be helpful for better understanding of stroke-related changes in gait control.

Keywords: Fear, Accidental falls, Gait, Stroke

Comparison of Lumbar Segmental Stabilization and General Exercises on Clinical and Radiologic Criteria in Grade-I Spondylolisthesis Patients: A Double-Blind Randomized Controlled Trial

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Introduction: The effects of different physiotherapy protocols on patients suffering from grade-I spondylolisthesis have been thus far examined in a limited number of clinical trials. Therefore, the main purpose of this study was to compare the effects of lumbar segmental stabilization and general exercises on clinical and radiologic criteria in grade-I spondylolisthesis patients.t5r

Materials and Methods: This study was a double-blind randomized controlled trial (RCT) with a test-retest design and parallel groups. A total of 26 patients with grade-I spondylolisthesis were thus randomly assigned to experimental group (13 patients, lumbar segmental stabilization exercises) and control group (13 patients, general exercises). Subsequently, pain, functional disability, kinesiophobia, translational motion, angular motion, and slip percentage of the vertebra were investigated.

Results: Of the 120 people recruited in this study, only 26 patients were eligible. According to pre/post-intervention comparison, a statistically significant decrease was observed in the experimental group in terms of pain (P=0.000), functional disability (P=0.004), kinesiophobia (P=0.002), translational motion (P=0.043), and angular motion (P=0.011), but not for slip percentage (P=0.122). Considering the control group, a statistically significant decline was reported for pain (P=0.043) and functional disability (P=0.002). However, no significant differences were found for other variables in the control group. With regard to inter-group comparison, there was no statistically significant difference between the two groups regarding the given variables except for kinesiophobia (P=0.040).

Conclusion: Both lumbar segmental stabilization and general exercises led to reduction in pain and functional disability of patients with grade-I spondylolisthesis. Therefore, lumbar segmental stabilization exercises seemed to be better than general ones with reference to improving kinesiophobia and intervertebral movements.

Keywords: Exercise Therapy, Radiology, Spondylolisthesis

To compare the effects of mobilization and mobilization with movement on pain, function, range of motion and acromiohumeral distance in patients with chronic shoulder impingement syndrome

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Introduction: Shoulder impingement syndrome is the most common disorder among patients with shoulder pain, and the third prevalent musculoskeletal disorder. Manual therapy is one the most crucial part of it's treatment. The aim of this study was to compare the effects of mobilization and mobilization with movement in patients with chronic shoulder impingement syndrome.t5r

Materials and Methods: Thirty patients with chronic shoulder impingent syndrome were randomly divided into two groups of mobilization and mobilization with movement. After doing routine physiotherapy for 2 groups manual therapy techniques were applied for each group within 4 sessions in two weeks. The outcome measures were shoulder range of motion and acromiohumeral distance. Independent T-test and dependant T-test were applied for data analysing.

Results: : In the mobilization with movement group, the range of flexion, abduction, internal and external rotation significantly changed from 118.6±15.30 to 140.6±19.21, 103.0±18.47 to 104.2±20.0, 57.73±20.87 to 93.80±17.82 and 55.6±15.69 to 85.80±11.04 respectively. The average of acromiohumeral distance with arms in neutral position changed from 9.18±1.93 to 11.29±1.54 and the acromiohumeral distance with the arm in 90° abduction changed from 7.36±1.56 to 9.12±1.57 that was not statistically significant.

Conclusion: Based on the results, mobilization with movement was more effective in improving shoulder ranges of motion, and it is preferable to mobilization technique.

Keywords: Shoulder impinement syndrome,

Shear-Wave Elastography of Sternocleidomastoid Muscle during Craniocervical Flexion Movement under Different functional Positions in Individuals with and without Chronic Non-Specific Neck Pain

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Introduction: The primary objective of the present study was to examine changes in the stiffness of the sternocleidomastoid (SCM) muscle during the craniocervical flexion (CCF) task under functional positions in individuals suffering from chronic non-specific neck pain (CNSNP) in comparison to asymptomatic controls.t5r

Materials and Methods: In the current case-control study, 25 participants with CNSNP and 25 controls with matched age, height, and weight were recruited. The absolute and normalized muscle stiffness of the SCM was measured at supine resting, sitting resting, and during CCF tasks in seated positions using ultrasound shear wave elastography (SWE).

Results: The findings revealed a significant main effect of position on the absolute and normalized muscle stiffness of SCM ($P < 0.05$), indicating an increase in muscle stiffness as the level of position changed from supine resting to sitting contracted. Participants with CNSNP demonstrated a higher absolute muscle stiffness of SCM muscle compared to healthy controls, with a significant main effect of the group ($p = 0.04$). However, the main effect of the group on the normalized muscle stiffness of the SCM muscle was not significant ($p = 0.33$). Furthermore, there was no significant group-by- position interaction effect on the absolute and normalized stiffness of SCM muscle ($P > 0.05$), indicating a similar pattern of stiffness changes in both groups.

Conclusion: The current study found that CCF and postural positions have a significant impact on the stiffness of SCM muscle. Moreover, individuals with CNSNP exhibited greater absolute SCM muscle stiffness than the asymptomatic group. Furthermore, SWE is a reliable tool for assessing SCM muscle stiffness in clinical practice.

Keywords: Neck-pain, Muscle-stiffness, SWE, Sternocleidomastoid-muscle, Elastic-modulus

The Effect of 12-week Aerobic and Lower Extremity Resistance Exercises on Healing of Foot Ulcers in Type 2 Diabetic Patients

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Introduction: Diabetic foot ulcers represent a significant burden for the patients, their families and the society at large. This study evaluated the effect of a 12-week combined aerobic and resistance exercise on diabetic foot ulcer healing as well as Ankle-Brachial Index and quality of life.t5r

Materials and Methods: Twenty-six subjects with diabetic foot ulcers were recruited to the study and were randomized to either receive a combined exercise program (Group One) or not (Group Two) but placed on standard treatment alone. Subjects reported to the clinic 2 times a week and both groups were assessed for baseline data. The follow up evaluations were done on a 4-week basis for ulcer size and depth. ABI and quality of life were measured before and after the study period (12 weeks).

Results: Subjects in the intervention group had a significant decrease in wound size after the 8th week (P = 0.03) and borderline significant decrease after 4th week (P = 0.059) compared to the control group. There was also a significant decrease in wound depth after 8th week (P = 0.02) and 12th week (P < 0.01) in the first group compared to no significant change in second groups` wound depth. The intervention group also experienced a significant increase in SF-36 compared to the control group (P = 0.01). Right ABI was increased significantly in the intervention group when compared to the baseline (P = 0.02).

Conclusion: This study shows that supervised combined exercise program is capable of improving DFU healing in terms of both ulcer size and depth. Exercise also shows positive effects on peripheral circulation (ABI) and quality of life and should be an essential part of the treatment plan for patients with diabetic foot ulcer.

Keywords: Diabetes Diabeticfootulcer ABI Qualityoflife Therapeuticexercise

Effectiveness of Gait Training Using Dynamic Body weight Support System on Locomotor Abilities of Ambulatory Children With Different Neural Disorders

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Introduction: Background: In this study, we evaluated the efficacy of dynamic body weight-supported training on the gait quality of children with different neural disorders.t5r

Materials and Methods: Seventeen ambulatory children, aged 3 to 11 years, experiencing gait limitations, were selected to participate in the designed gait training program. Each child participated in 10 practice sessions held three days a week, with each training session using the dynamic body weight support system, comprising three stages, and lasting 20 minutes. Clinical assessments were conducted using four functional tests: 'Five Time Sit to Stand Test (FSST)', 'Modified Time Up and Go (MTUG)', 'Time Up and Down Stairs (TUDS)', and 'Pediatric Berg Balance Scale' (BBS).

Results: Statistical tests demonstrated a significant increase in the post-values of the BBS after gait training. Notably, children with higher relative cognitive abilities showed more improvement. Additionally, there was a significant enhancement in the assigned score for the level of independence. As all participants had received conventional physical therapies for more than three years, reaching their maximum obtainable improvements with conventional training methods, the observed improvements could be attributed to the designed training protocol even without a control group.

Conclusion: Designed gait training protocol using a dynamic weight support system proved effective in enhancing balance, improving gait quality, and increasing the level of independence during performing functional tests in ambulatory children suffering from different locomotor disabilities.

Keywords: Gait; Child; Walk; Rehabilitation.

The Effect of Dry Needling on Main Risk Factors of Neuroischemic Diabetic Foot Ulcers

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Introduction: Diabetic foot ulcers can be classified into different types. Neuroischemic ulcers is one of the most severe and resistant forms. These ulcers affect patients with both peripheral neuropathy and ischemia caused by peripheral artery disease. Approximately 50-60% of diabetic foot ulcers are neuroischemic, posing a significant risk of amputation due to the complex pathophysiological mechanisms underlying this condition.

Study Design:

Case series.

Objective: To evaluate the effect of dry needling (DN) on neuropathy and blood circulation in ten patients with neuroischemic diabetic foot ulcers.

t5r

Materials and Methods: Case Description:

A sample of ten patients (age range = 40—70 years) with neuroischemic ulcers were recruited and provided informed consent. These patients showed poor recovery after conventional wound care treatment. The target muscles were needled for 1 minute and needles were left in each point for 10 minutes. The patients received 8 sessions of DN treatment with a frequency of two sessions per week with 48 hours interval between sessions in 4 weeks. The main outcome measures were Michigan Neuropathy Screening Instrument (MNSI) and neurothesiometer to evaluate neuropathy and Ankle Brachial Index (ABI) for the assessment of vascular status and blood flow. The assessments were conducted before the first session and after the eighth session of DN.

Results: Following dry needling, blood circulation and neuropathy showed significant improvements. ABI scores improved from 0.7 to 1.02 ($p = 0.004$), representing a 45.71% improvement. Michigan Neuropathy Scores decreased by 3.4 ($p = 0.019$), representing a 30.36% improvement from the baseline of 11.2. Neurothesiometer scores improved by 7 ($p = 0.013$), representing a 25.18% improvement from the baseline of 27.8.

Conclusion: This study demonstrates the potential of dry needling as an adjunctive therapy for neuroischemic or ischemic diabetic foot ulcers. Dry needling showed significant improvement in PVD-related outcomes, such as blood circulation and neuropathy. This novel approach could be a complementary treatment option, augmenting conventional treatment strategies, particularly for those who are not suitable for interventions like angioplasty due to comorbidities.

Keywords: Dry needling, neuroischemic ulcer, diabetes

Cervical Multifidus and Longus Colli Ultrasound Differences among Patients with Cervical Disc Bulging, Protrusion and Extrusion and Asymptomatic Controls: A Cross-Sectional Study

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Introduction: The aim of this study was to analyze differences in morphological and histological features of cervical multifidus (CM) and longus colli (LC) muscles among patients with cervical disc bulging, protrusion, or extrusiont5r

Materials and Methods: Fifteen patients with cervical disc bulging (20% male, mean age: 48.5, SD 7.5 years), fifteen with cervical disc protrusion (6% male, mean age: 43, SD 7.8 years), and fifteen with cervical disc extrusion (40% male, mean age: 44, SD 8 years) diagnosed by clinical and imaging findings participated in this study. Additionally, fifteen asymptomatic controls (40% male, mean age: 40.4, SD 9.7 years) were also included. The following ultrasound measurements, cross-sectional area (CSA), anterior-posterior distance (APD), lateral dimension (LD) and mean echo-intensity (EI) of the CM and LC at C5-C6 level were examined by an assessor blinded to the subject's condition

Results: The results revealed no group * side significant differences among the groups ($p>0.00625$). However, group effects were found for APD and MEI of the CM ($P=0.006$ and $P<0.001$, respectively) and CSA, APD and MEI of the LC (all, $P<0.001$). LD of the LC muscle and the APD and LD of the CM were negatively associated with related-disability ($P<0.01$; $P<0.05$ and $P<0.01$, respectively) and pain intensity was negatively associated with LC APD and LD (both, $p<0.05$).

Conclusion: These results suggest that US can be used to detect bilateral morphological changes in deep cervical flexors and extensors to discriminate patients with cervical disc alterations.

Keywords: neck; ultrasound; cervical-multifidus; longus colli

The effect of high intensity interval training on mitochondrial expression of Mir-133 and MiR15 gene in the heart tissue of rats with myocardial infarction

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Introduction: The purpose of this study was to investigate the effect of HIIT on mitochondrial expression of Mir-133 and MiR15 gene in the heart tissue of rats with myocardial infarction.t5r

Materials and Methods: 24 male Wistar rats were divided into healthy and illness groups. Then 18 male rats after myocardial infarction with using intraperitoneal injection of isoproterenol randomly divided into HIIT and patient control groups to present study should be performed on three groups. The exercise group was exposed to HIIT for eight weeks. HIIT training was performed for eight weeks with an intensity of 85-90% VO2max for 5 days a week. Relative expression of Mir-133 and MiR15 gene was obtained by real-time PCR. Data were analyzed by one-way ANOVA and Tukey's post hoc test.

Results: The results of one-way ANOVA showed a significant difference between the means of the three groups in the expression of Mir-133 and MiR15 gene in the heart muscle of male rats ($p = 0.001$). The results of post hoc test showed an increase in Mir-133 gene expression and a decrease in MiR15 gene expression in rat heart muscle in the training group compared to the healthy and sick control group ($p = 0.001$).

Conclusion: Given the positive effect of HIIT on positive changes in the amount of genes associated with myocardial infarction, it seems that understanding the cellular and molecular processes affected by exercise can lead to the use of physical activity as a targeted and uncomplicated treatment in the future.

Keywords: HIIT, expression gene, myocardial infarction

Comparison of shoulder proprioception, upper extremity dynamic stability, and hand grip strength in overhead athletes with and without scapular dyskinesis

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Introduction: Introduction: Scapular dyskinesis is common in asymptomatic athletes, especially overhead athletes, impacting their neuromuscular control. These alterations can compromise upper extremity function and strength, increasing injury risk. Therefore, studying scapular dyskinesis' effects on shoulder proprioception, upper extremity dynamic stability, and hand grip strength in overhead athletes is crucial. This study aimed to compare shoulder proprioception, upper extremity dynamic stability, and hand grip strength between overhead athletes with and without scapular dyskinesis.t5r

Materials and Methods: 20 asymptomatic professional overhead athletes with scapular dyskinesis and 20 without scapular dyskinesis based on the lateral scapular slide test. In this cross-sectional study, shoulder active joint position sense as shoulder proprioception was evaluated by an isokinetic dynamometer, and the upper extremity dynamic stability and hand grip strength were assessed by an upper quarter modified star excursion balance test (UQ-mSEBT) and a handheld dynamometer, respectively.

Results: The shoulder active joint position sense was significantly less in the scapular dyskinesis group (PER = 0.003, PIR < 0.001, and PFlx = 0.002). There were no significant differences between the two groups in terms of the UQ-mSEBT and hand grip strength scores.

Conclusion: The results showed that scapular dyskinesis changes may affect the shoulder active joint position sense of asymptomatic overhead athletes, but it did not affect their upper extremity dynamic stability and hand grip strength.

Keywords: Scapular dyskinesis, proprioception, UQ-mSEBT, HGS

Approximate entropy as the complementary parameter for understanding the static stability concept in postmenopausal women with and without osteoporosis

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Introduction: The structural nature of the motor output variability and the temporal organization of postural sway have prompted a re-evaluation of the traditional posturography data in terms of balance control and risk of fall assessments, as the conventional approach may not fully capture the complexity of these phenomena, thus, this study aimed to consider both linear and non-linear Center of Pressure (CoP) sway parameters during double stance position in postmenopausal women with and without osteoporosis to provide information in terms of stability concepts in a population who are at risk of fractures.t5r

Materials and Methods: 34 postmenopausal women who participated in the study were divided into two groups, according to their lumbar T-Score (osteoporotic group, n = 17, with T-score ≤ -2.5 and nonosteoporotic group, n=17, with T-score>—1). The CoP trajectories were recorded by force plate during a comfortable double stance position. Linear and non-linear CoP-related parameters were assessed by standard deviation of the CoP displacement, velocity and approximate entropy (irregularity index). In addition, the fall efficacy scale (FES) was administered through an interview due to the significant role that fear of falling plays in the postural control system.

Results: There was no significant difference in age, BMI, and SD of the CoP displacement in the sagittal plane. The group with osteoporosis showed significantly, higher FES value (14.79±5.52 vs 11.57±2.17; P = 0.050), greater SD of the CoP displacement (4.22±1.62 mm vs 2.83±1.64mm; P = 0.046and lesser CoP irregularity (0.04±0.01 vs 0.11±0.09; P = 0.021) in the frontal plane compared to what was observed in the non-osteoporotic group. In the frontal plane, a significant and negative relationship was observed between the SD of the CoP displacement and CoP irregularity, dependent on the interactive effect of the FES value, in the group with osteoporosis (Partial Correlation =-0.748, P = 0.013).

Conclusion: It was concluded that lesser irregularity was associated with more CoP variability in the osteoporotic group. This pattern may indicate a less adaptive postural control system, which might be struggling to keep balance efficiently. Lesser CoP irregularity has been associated with a less automatic control system with more attentional demands to maintain balance[1], the confirmed interactive role of the FES value on the CoP signals and the higher fear of falling in osteoporotic participants may be associated with previous statements.

A precise understanding of postural control behaviors could provide valuable information for screening individuals at high risk for osteoporotic fractures, as well as for the development of preventive and rehabilitative programs.

Keywords: Osteoporosis, Posture, Stability, Entropy.

Evaluation of UT and SCM muscles Size reliability in migraine patients and healthy subjects using ultrasonography

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Introduction: Impairment in cervical muscles following neck pain or migraine headache causes impairment in motor control, including changes in the function, structure, and size of the muscles. Furthermore, it is well described that the presence of trigger points (TrPs) has been associated with motor disturbances, such as fatigue, altered coordination, and an altered pattern of muscular activity. Hence, the size of a muscle may be a good indicator of the muscle's strength and ability to perform its normal function. So, this study aimed to introduce a suitable method and position for UT and SCM muscles ultrasonography. Also, we evaluated the intraday and inter-day reliability of these muscle thickness measurements for diagnostic aims in migraine patients.t5r

Materials and Methods: This study was a cross-sectional study to measure bilateral ultrasound images of UT and SCM muscles in 15 patients with migraine headaches and 15 healthy controls. A linear array probe with a 50-mm footprint and frequency range of 7.5 MHz measured the thickness of UT and SCM, parallel to the orientation of the muscle fibers. The muscle thickness was evaluated three times, twice a day with 30-minute intervals (intraday reliability), and once a week later (inter-day reliability) by the same physiotherapist. Intraclass correlation coefficients (ICC) and standard error of measurement (SEM) were used for data analysis.

Results: The ICC and SEM for thickness measurement of left UT were 0.88 and 0.06 (excellent) and it was 0.87 and 0.07 (excellent) for right UT thickness. The ICC and SEM for left SCM muscle thickness were 0.88 and 0.06 (excellent) and it was 0.85 and 0.08 (excellent) for right SCM thickness. Muscle thickness of the right UT muscle was 13.38±0.92 mm and 11.12±1.00 mm, in migraine and healthy groups, respectively. Also, muscle thickness of the right SCM muscle was 7.24±0.70 mm and 9.16±0.67 mm in migraine and healthy groups, respectively.

Conclusion: The present study showed that ultrasonography can be a reliable tool to measure cervical muscle thickness in migraine patients. Additionally, the ultrasonography protocol of the current study, the position, and the measurement level can be used with high reliability in future studies.

Keywords: Migraine disorders; Ultrasonography; Thickness; Reliability

Comparison of the effect of stabilization exercises in water with general exercises in water on the cross-sectional area and thickness of the Multifidus muscle and the thickness of the Transversus Abdominis muscle in women with non-specific chronic low ba

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Introduction: Objective: The purpose of the present study was to compare the effect of stabilization exercises with general exercises in water on cross-sectional area and thickness of the multifidus and thickness of the transversus abdominis muscles in women with nonspecific chronic low back pain.t5r

Materials and Methods: Methods & Materials: Twenty-six women with non-specific chronic low back pain (aged 40.38 ± 3.2 years) were included according to the inclusion criteria. They were divided randomly into two equal groups: the experimental (stabilization exercise) and the control group (general exercises). The exercise plan of the two groups was 10 weeks, three sessions per week, 40 minutes of exercise each session, in the pool. Before and after the intervention in both groups, the thickness and cross-sectional area of the multifidus muscle and the thickness of the transversus abdominis muscle were measured using ultrasonography, pain using the Numeric Rating Scale, and functional disability using the Oswestry Questionnaire.

Results: Results: Paired t-test showed a significant difference for the thickness of the transversus abdominis, thickness and cross-sectional area of the multifidus muscle, and pain and functional disability in the experimental group after intervention ($p<0.05$). In control group, after intervention all variables showed no significant difference ($p>0.05$) exept for pain and functional disability ($p<0.05$). Thickness of transversus abdominis and thickness and cross sectional area of multifidus muscles increased significantly and pain decreased significantly in experimental group compaired to control group ($p<0.05$).

Conclusion: Conclusion: The present finding revealed that stabilization exercises in water were more effective than general exercises in water in increasing the thickness of the transverse abdominis muscle and the thickness and cross-sectional area of the multifidus muscle and decreased pain in women with nonspecific chronic low back pain.

Keywords: sonography , Stabilization , Hydrotherapy

Comparing the clinical tests of dynamic balance control between healthy controls and individuals with chronic low back pain with high and low pain catastrophizing

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Introduction: Pain catastrophizing (PC) is related to motor control changes in individuals with chronic low back pain (CLBP). However, differences in dynamic balance control based on the level of PC still remain unclear in these individuals. Therefore, the aim of this study was to compare the dynamic balance control between healthy controls and individuals with CLBP with high and low PC.

t5r

Materials and Methods: Forty individuals with CLBP and 20 healthy participants were enrolled in this cross-sectional study. Individuals with CLBP were classified into two groups of high and low PC. Dynamic balance control was assessed using the Modified Star Excursion Balance Test (MSEBT), Five-Times Sit-to-Stand Test (FTSST), and Timed Up and Go Test (TUGT).

Results: Statistical analyses showed that mean values of reach distances in anterior, posteromedial, and posterolateral directions of the MSEBT were significantly lower in individuals with CLBP with high PC compared to low PC ($p= 0.04$, $p= 0.01$, and $p= 0.04$, respectively) and healthy controls ($p< 0.001$, $p= 0.001$, and $p= 0.006$, respectively). In addition, for both the FTSS and TUG tests, the mean time was significantly greater in individuals with CLBP with high PC compared to low PC ($p< 0.001$ and $p= 0.004$, respectively) and healthy controls ($p< 0.001$).

Conclusion: Our results showed poor dynamic balance control in individuals with CLBP with high PC. This suggests that PC could contribute to the impaired dynamic balance control in individuals with CLBP. Combining balance exercises and cognitive-behavioral treatments targeting PC may be useful for the improvement of dynamic balance control in individuals with CLBP with high PC.

Keywords: Back pain Balance Pain catastrophizing

The Impact of Enhanced Neuromuscular Training on Muscle Morphology and Function in Individuals with Chronic Ankle Instability: A Randomized Controlled Trial

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Introduction: Background: Lateral ankle sprains are among the most prevalent musculoskeletal injuries encountered in sports and everyday activities.

Objectives: This study aimed to evaluate the effects of integrating neuromuscular training with conventional training—which includes strengthening, flexibility, and balance exercises—on muscle morphology, dynamic balance, perceived ankle instability, and functional capacity in individuals suffering from chronic ankle instability.

Hypothesis: It was hypothesized that the combination of neuromuscular and conventional training would provide additional benefits in muscle morphology, dynamic balance, and functional capacity for those with chronic ankle instability.

Study Design: This research was conducted as a single-blind, parallel-arm randomized controlled trial.

Level of Evidence: Level 2.

t5r

Materials and Methods: A total of 34 participants with chronic ankle instability were randomly assigned to either an experimental group or a control group. The experimental group received both conventional and neuromuscular training, while the control group engaged solely in conventional training. Muscle cross-sectional areas of the peroneus longus and tibialis anterior were assessed using ultrasonography. Evaluations included reaching direction distance, perceived ankle instability, and the Foot and Ankle Outcome Score, conducted before the intervention, immediately after 12 training sessions, and four weeks post-intervention.

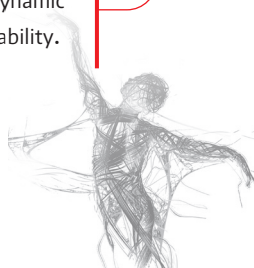
Results: Analysis using repeated-measures ANOVA indicated significant improvements in the experimental group, particularly in the cross-sectional area of the tibialis anterior muscle on the affected side and in the posteromedial reaching direction during the Y balance test. Additionally, the experimental group exhibited a notable increase in Foot and Ankle Outcome Scores compared to the control group ($p < 0.05$). However, the effect sizes for the group differences were classified as minor to moderate (Hedges g 0.40-0.73).

Conclusion: The integration of neuromuscular training with conventional exercise programs offers greater advantages than conventional training alone, particularly in enhancing the morphology of the tibialis anterior muscle, improving posteromedial dynamic balance, and boosting functional capacity in individuals with chronic ankle instability.

Clinical Relevance

Combining neuromuscular and conventional training may significantly improve muscle morphology, dynamic balance, perceived ankle instability, and overall functional capacity in patients with chronic ankle instability.

Keywords: Ankle Exercise Cross-sectional area Function



The linear intra-articular motions of the temporomandibular joint in individuals with severe forward head posture: A cross-sectional study

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Introduction: Introduction: The cervical vertebrae and the temporomandibular joint may be linked through their common muscles. The purpose of the present study was to compare the linear intra-articular motions of the temporomandibular joint between individuals with normal craniocervical posture and severe forward head posture.t5r

Materials and Methods: Methods: Volunteers were equally assigned to either severe forward head posture group or normal craniocervical posture group according to their craniovertebral angle. The craniovertebral angles greater than 49 degrees were considered as normal craniocervical posture while angles between 44 and 40 degrees were regarded as severe forward head posture. The temporomandibular joint was imaged at the closed, median, and maximum open positions of the mouth using an ultrasound machine with a 7.5 MHz linear transducer in the sitting position. The best-fitting curve in the contour registration method was employed to measure displacement of the mandibular condyle on the transverse and vertical axes.

Results: Results: The forward displacement of the mandibular condyle in severe forward head posture group was significantly (p-value=0.037) reduced compared to normal craniocervical posture group at the maximum open position of the mouth, while no significant difference was revealed at the closed (p-value=0.937) or median open (p-value=0.699) positions. The perpendicular displacement of the mandibular condyle exhibited no significant (p-value>0.107) difference between the groups at any mouth position.

Conclusion: Conclusion: The current study demonstrated, for the first time, that severe forward head posture may impact the intra-articular motion of the temporomandibular joint. This study presumed that individuals with severe forward head posture may encounter a force imbalance in the anterior-posterior direction.

Keywords: Temporomandibular-Joint Posture Kinematics Articular-Range-of-Motion

The effect of dry needling on pain and central sensitization in women with chronic pelvic pain: a randomized controlled clinical trial with parallel groups

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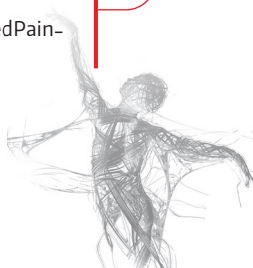
Introduction: Central sensitization (CS) plays an important role in the development and continuation of chronic pain syndromes. Chronic pelvic pain (CPP) is a debilitating problem for women that has clear evidence of myofascial dysfunction origin. It seems that myofascial trigger points contribute to development of CS by sending persisted noxious stimulus through the activation of muscle nociceptors. The aim of this study was to investigate the effect of dry needling (DN) on pain and CS parameters, including changes in brain functional activity, endogenous descending pain modulation system, and hypothalamic-pituitary-adrenal axis in women with CPP.t5r

Materials and Methods: In this randomized clinical trial study, 36 women with CPP were allocated into three groups of dry needling group (DNG), placebo needling group (PNG) and control group (CG) using a block randomization method. The examiner was blind to the allocation of participants in the groups. The DNG received 5 sessions of DN using the "static needling" method in the muscles of the abdominal wall, gluteal and pelvic floor. The PNG received the same needling procedure as DNG but using a non-penetrating method, and the CG did not receive any needling intervention. Evaluation of outcomes were conducted pre-intervention, post-intervention and 3 months post-intervention, on a certain day of the menstrual cycle (days 7-11 of the menstrual cycle). Outcome measures included central sensitization inventory (CSI), short-form McGill pain questionnaire (SF-MPQ), electroencephalography (EEG), conditioned pain modulation (CPM), salivary cortisol concentration.

Results: The result showed a significant group-by-time interaction for CSI and SF-MPQ. There was a significant decrease in CSI scores post-intervention and 3 months post-intervention compared to pre-intervention in DNG and PNG. The visual analogue scale score of SF-MPQ in CG increased significantly 3 months post-intervention compared to pre-intervention. The present pain intensity score of SF-MPQ in DNG decreased significantly post-intervention compared to pre-intervention. Group-by-time interaction in other variables were not statistically significant. The EEG analysis showed regional changes in the activity of frequency bands. In both eyes closed and eyes open conditions, DNG and PNG showed a decrease in the absolute power and relative power of the frequency bands post-intervention and an increase in 3 months post-intervention, which were statistically significant in some cases.

Conclusion: It seems that both DN and placebo needling in addition to pain reduction, can affect central pain processing through removing some sources of peripheral nociception, and subsequently affect supraspinal centers.

Keywords: ChronicPelvicPain DryNeedling CentralSensitization Electroencephalography ConditionedPain-Modulation



Comparison of the effects of transcranial direct current stimulation (tDCS) plus exercises with exercises alone on pain , function and balance in patellofemoral pain

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Introduction: Patellofemoral pain(PFP) is a one of the most common lower extremity impairments, especially among young people. This impairment affects many aspects of a person's activity daily living. Rehabilitation using tDCS is a new method in the field of musculoskeletal disorders. This new method has shown positive effects for rehabilitation of low back pain, neck pain, wrist fracture, and frozen shoulder. In addition, evidence suggests that Tdcs along with training has the potential to affect brain function and activity, among the elderly and patients with pfp disorderst5r

Materials and Methods: Patients with patellofemoral pain complaining of gradual anterior knee pain during the last 3 months and age between 18 to 40 years old will be included. The patients with any previous knee trauma or other pathologies such as meniscus and ligament injuries or a history of diseases that may be affected by tDCS such as epilepsy, brain tumor, or brain implants will be excluded. In this study, one group will receive real tDCS with the protocol of Anode on CZ and Cathode on the middle of the forehead according to the 10-20 system, and the second group will receive sham tDCS with the same method. Then both groups will perform stretching exercises related to the Hamstring, Gastrocnemius, and ilotibial band and strengthening exercises related to knee, hip, and trunk. The study will be conducted at Shiraz School of Rehabilitation Sciences and the study population (n = 24) will be randomly divided into control and intervention groups. the intervention group will receive tDCS plus exercise for 4 weeks. This is a double-blinded study. The assessor, analyzer, and patients will be blinded to the participant's group. outcome measures were VAS for analyzing pain intensity, stepping down test & and AKPS questionnaire for analyzing functional performance, modified star excursion test for analyzibg dynamic balance, single leg open test for static balance.

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Necessity of research: People with chronic PFP have some symptoms such as pain, balance and functional impairments,. In addition, there is evidence that chronic PFP is able to alter central nervous system. Althoght the impact of tDCS on some musculoskeletal disorders has been investigated but, its effect on PFP specially its effects on clinical variables and central nervous system function simultaneously, has not investigated so far. Therefore, if tDCS along with training is able to improve clinical indices, it will be an efficient, practical and cost-effective method

Results: The real tDCS group showed more effective improvement in VAS and dynamic balance (posteromedial) at the end of the session and follow-up, but functional performance only in the follow-up was different between groups. Static balance showed no differences between groups.

Conclusion: The real tDCS group showed more effective improvement in VAS and dynamic balance (posteromedial) at the end of the session and follow-up, but functional performance only in the follow-up was different between groups. Static balance showed no differences between groups.

Keywords: PFP, brain stimulation,tDCS, function, balance,

Among the two interventions, McKenzie exercises and Kinesio taping, which one is a better choice for preventing neck musculoskeletal disorders of smartphone users?

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Introduction: Using smartphones has increased exponentially, especially after the COVID-19 pandemic. However, it causes the occurrence of neck musculoskeletal disorders. But still there is no ergonomic guideline to prevent neck musculoskeletal disorders caused by using smartphones. Muscle fatigue, malfunction of motor control strategies and discomfort are the precursors of musculoskeletal disorders. Thus, this study aims to compare the effects of Kinesio taping of the upper trapezius and cervical erector spinae muscles and McKenzie exercises of retraction extension and retraction rotation on cervical muscles fatigue, head and neck movement pattern during texting and discomfort after texting with a smartphone.t5r

Materials and Methods: This was a randomized controlled crossover single-blinded clinical trial. A total of 24 smartphone users who their Neck Disability Index was equal or less than 4 points (8%) participated in this study. We compared the effects of the desired interventions under conditions similar to real conditions aiming to obtain more clinical results in this field by using interrupted time series design. All participants have been seated on a height adjustable chair with support during 30 min texting with a smartphone by both hands. A 90-s break was considered in the middle of the task. More precisely, we compared the effects of the desired interventions under conditions similar to real conditions aiming to obtain more clinical results in this field by using interrupted time series design. The electromyographic activity of the right and left upper trapezius, cervical erector spinae, and sternocleidomastoid muscles were recorded during 30 min of texting with a smartphone. Electromyography data was analyzed by joint analysis of spectrum and amplitude method. Also, markers have been placed on the three reflective landmarks: the eye's canthus, the ear's tragus, and the spinous process of the C7. Pictures were recorded by camera during the task, then head and neck flexion angles were measured by Kinova software. Moreover, subjects filled Numeric Rating Scale questionnaire before and after the task.

Results: The results of the joint analysis of spectrum and amplitude showed that before the break, fatigue was observed in most of the muscles in all 3 study groups; however, after the break, in contrast to the other two groups, no muscle fatigue was observed in any of the muscles in the Mackenzie group. In addition, in the McKenzie group, the median frequency R2 of all muscles except the left cervical erector spinae was significantly different from the control group ($P < 0.001$). Compatibly, the R2 of head and neck flexion angles of the

McKenzie group during the task was significantly different from the control group (P < 0.001). Moreover, in the McKenzie group, individuals felt significantly less discomfort after completing the task than the control group (P = 0.032).

Conclusion: Scheduled breaks solely cannot prevent neck musculoskeletal disorders caused by using smartphones. By maintaining normal motor control strategies, the McKenzie exercises can help improve neck muscle fatigue while texting with a smartphone as well as reduce the discomfort after texting with a smartphone. Thus, these exercises may be a better choice for preventing neck musculoskeletal disorders caused by working with a smartphone if the users do the exercises regularly during working with a smartphone.

Keywords: McKenzie taping electromyography neck smartphone.

Comparison the effect of dual task balance training with single task balance training in patients with anterior cruciate ligament reconstruction: A randomized clinical trial

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Introduction: Anterior cruciate ligament (ACL) injury accounts for 50% of all knee ligamentous injuries. People with anterior cruciate ligament injury have poorer postural stability and cognitive function than healthy people. These persistent deficits in postural stability may be due to changes in the neural control after injury, including altered processing of somatosensory feedback and compensation in visual or motor cognitive processing, potentially increasing ACL injury risk via cognitive saturation during a motor task. The evidence has shown people with ACL reconstruction have more activity in their frontal lobe than healthy people, which may be due to a greater need for cognitive resources and attention. Therefore, there is a need for treatment to pay focus to this deficit in the cognitive capacity of these people.t5r

Materials and Methods: This study employed a single-blinded, prospective randomized controlled trial design. When participants attained the physical requirements, they were randomly allocated, using a closed envelopes method, to either the balance exercise with cognitive task group (Group A) and balance exercise group (Group B). After the baseline testing session, patients in both groups received treatment for 4 weeks (3 sessions per week). First, both groups were treated with electrotherapy (FES) for 15 minutes, and then 15 minutes of strengthening exercises and stretching and ultrasound (1 MHz for 5 to 10 minutes) and mobilization the knee joints as common exercises. Then specific balance exercises were performed. In the intervention group, the balance exercises were accompanied by secondary cognitive tasks that were done simultaneously with the patient's movement.

Results: The results showed that there was no effect of group for the Tegner, KOOS and force platform parameters in individuals with ACLR (p value > 0.05). However, in three direction of the SEBT test (Posteromedial, posterior and lateral) the effect of group was significant with superiority of the intervention group (p value < 0.05). The functional performance and postural stability improved significantly in 2 groups which received either dual task balance training or single task balance training after treatment (p value < 0.05).

Conclusion: The results of this study support the improvement of postural stability in people with anterior cruciate ligament reconstruction, demonstrating balance exercises are effective in improving dynamic and static stability. It is suggested that these types of exercises are helpful for the treatment of people with an-

terior cruciate ligament reconstruction to improve postural stability. Balance exercises with secondary cognitive function in the SEBT balance test have been reported to have a significant difference between the two groups in three directions, with the superiority of the intervention group.

Keywords: ACLR, Dual-Task, Balance, Force-Plate

Comparing the effect of physiotherapy combined with manual lymphatic drainage massage with physiotherapy alone and manual lymphatic drainage alone on pain and volume of upper limb on breast cancer patients with lymph-edema: A randomized controlled trial st

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Introduction: Secondary lymphedema after breast cancer treatment is a swelling caused by the accumulation of fluid in the subcutaneous tissue of the surgical organ. Until now, there is no known definitive treatment for lymphedema. The aim of this study is to investigate the therapeutic effect of comprehensive upper limb and neck physiotherapy combined with manual lymphatic drainage (MLD) in comparison to upper limb and neck physiotherapy alone and MLD alone, in order to decrease the volume of lymphedema, reduce pain and keep it stable as The primary goals and increasing the movement range of the upper limb, increasing the function of the upper limb and improving the quality of life were considered among the secondary goals of this study. t5r

Materials and Methods: This research was conducted in the form of a project in the physiotherapy department of Mashhad University of Medical Sciences. In this study, 72 patients with lymphedema of the upper limbs were selected using a randomized clinical trial method and were divided into three groups: physiotherapy intervention group with PTMLD massage, PT physiotherapy intervention group 2 and intervention group with MLD massage. study, outcomes of affected limb volume, NRS pain outcome, Arm Flexion ROM, Arm Abduction ROM, Quick DASH, upper limb disability outcome, LLIS quality of life outcome for lymphedema patients, ULFI upper limb functional outcome before treatment, immediately It was checked for patients after treatment and three months after treatment.

Results: In the PTMLD group, the volume of limb lymphedema decreased significantly after treatment compared to before treatment and was stable for three months after treatment, but no significant difference was observed in PT and MLD groups. After treatment, arm ROM improved significantly in PTMLD and PT groups. Pain with NRS score, upper limb function with Quick DASH and ULFI significantly improved in all groups after treatment and was stable up to three months after treatment. The quality of life in lymphedema was improved in all groups but not significantly.

Conclusion: In general, the results of this study in the PTMLD group compared to the PT group and the MLD group showed a greater improvement in reducing the volume of lymphedema affected limbs, as well as in the

results of pain and range of motion.
Shoulders of both PTMLD and PT groups showed significant improvement compared to MLD group. Upper limb function and quality of life of patients with lymphedema significantly improved in all three intervention groups, and there was no difference between treatment groups. Therefore, it can be concluded that the combination of comprehensive physiotherapy treatment of the neck and upper limbs with lymphedema along with MLD massage has a significant effect in reducing the volume of the affected limb, and in general, the use of physiotherapy treatment can significantly improve pain. the function of upper limbs and quality of life in lymphedema patients are effective.

Keywords: Physiotherapy, MLD, Breast cancer lymphedema

The Impact of Sacroiliac Belt Application on Lumbopelvic Muscle Activation in Patients with Unilateral Sacroiliac Joint Instability During Various Loading Conditions

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Introduction: Dysfunction in the sacroiliac joint (SIJ) is considered a primary cause of low back pain and posterior pelvic pain. Substantial evidence supports the use of a sacroiliac belt as a common treatment for patients with unilateral SIJ instability. The application of a pelvic belt decreases SIJ laxity and enhances stability through additional force closure. Given the role of muscles in SIJ stability, further research is needed to determine the belt's effects during functional tasks.t5r

Materials and Methods: Thirteen patients with unilateral SIJ instability volunteered for this study. Inclusion criteria included a positive Active Straight Leg Raise (ASLR) test and self-reported maximum pain over the SIJ. Exclusion criteria were previous orthopedic surgery and severe deformities in the spine or lower extremities. Surface electromyography (EMG) data were collected bilaterally from the latissimus dorsi, gluteus medius, transversus abdominis/oblique internus, and biceps femoris during different loading conditions (one-leg stance on the affected side, one-leg stance on the unaffected side, double stance; loading: on the same side, on the counter side) with and without the pelvic belt.

Results: The application of the pelvic belt resulted in a significant decrease in muscle activation of the latissimus dorsi, biceps femoris, and transversus abdominis on the affected side, with F-values of 11.358 ($p = 0.006$, $\eta^2 = 0.486$), 14.838 ($p = 0.002$, $\eta^2 = 0.553$), and 8.668 ($p = 0.012$, $\eta^2 = 0.419$), respectively. No significant changes were observed in the gluteus medius on the affected side. On the unaffected side, significant decreases in activation were observed in the latissimus dorsi and transversus abdominis/oblique internus, with F-values of 19.523 ($p = 0.001$, $\eta^2 = 0.619$) and 21.318 ($p = 0.001$, $\eta^2 = 0.640$), respectively. Interaction effects between belt application and conditions were significant for the biceps femoris and transversus abdominis/oblique internus on the affected side ($F = 7.06$, $p = 0.004$, $\eta^2 = 0.37$; $F = 5.092$, $p = 0.014$, $\eta^2 = 0.298$) .

Conclusion: The study indicates that the use of a sacroiliac belt can significantly decrease muscle activation in specific lumbopelvic muscles during different loading conditions, particularly in patients with unilateral SIJ instability. These findings support the therapeutic use of a pelvic belt to improve SIJ stability and potentially alleviate associated pain during functional activities.

Keywords: sacroiliac joint instability- pelvic belt

The effect of trunk-stabilizing muscles training in women with stress urinary incontinence: A Randomized Controlled Trial

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Introduction: There is little evidence regarding the effect of trunk-stabilizing muscles training on the improvement of stress urinary incontinence (SUI) symptoms. The objective of this study was to investigate the effect of trunk-stabilizing muscles training on trans-abdominal ultrasonography (TAUS) and clinical urological indices, and on the quality of life (QoL) in women with SUI.t5r

Materials and Methods: It was a randomized controlled trial study. Forty-six women with SUI, aged 20-55 years, were randomly assigned to experimental (n =23) and control group (n =23). The experimental group performed trunk stabilization exercises according to the Sapsford protocol, while the control group performed pelvic floor muscle (PFM) exercises for eight weeks.The primary outcome measure was bladder base displacement (BBD), assessed by TAUS during PFM contraction (PFMC), Valsalva, and abdominal curl. The secondary outcome measures were PFM strength, the severity of urinary incontinence (UI), voiding diary, and QOL, assessed by the Modified Oxford Grading System, the severity index, frequency chart, and lower urinary tract symptoms-QOL questionnaire respectively. All variables were assessed at baseline and after 8-weeks of interventions.

Results: The interaction of group and time wasn't significant for BBD during PFMC ($p=0.98$), Valsalva ($p=0.28$), abdominal curl ($p=0.34$), and secondary variables ($p>0.05$). The main effect of time was significant in both groups for BBD during PFMC, PFM strength, the severity of UI, voiding diary, and QoL ($p<0.001$), with effect size (d) of 0.30, 0.80, 2.05, 1.07, 1.03 in the control; and 0.49, 0.52, 1.75, 0.66, 0.88 in the experimental group respectively. The main effect of the group wasn't significant for BBD during PFMC ($p=0.68$), Valsalva ($p=0.22$), abdominal curl ($p=0.53$), and secondary variables ($p>0.05$).

Conclusion: Trunk-stabilizing muscles training and PFM exercise are equally effective in the improvement of PFM function, UI symptoms, and QOL in women with SUI. Both methods can be used interchangeably by physical therapists.

Keywords: Stress Urinary Incontinence, Ultrasonography

Additional effect of neuromuscular electrical stimulation in a conservative intervention on morphology and strength of abductor hallucis muscle and correction of hallux valgus deformity: a randomized controlled trial

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Introduction: In hallux valgus, morphological changes and functional weakness of intrinsic foot muscles occur, especially in the abductor hallucis muscle.This study aimed to investigate how a conservative treatment with the addition of neuromuscular electrical stimulation affects the volume and strength of the muscle, the correction of deformity, passive range of motion, pain, and disability.t5r

Materials and Methods: Twenty-eight female participants (48 feet) were randomly assigned to two groups. The interventions included orthoses and exercise (Ortho) in both groups. One group received additional neuromuscular electrical stimulation of abductor hallucis muscle to activate it. Each group received the treatments for one month and was assessed two times, at baseline before starting and after one month of treatment. Mixed within-between ANOVA, analysis of covariance, and nonparametric tests were used for data analysis.

Results: The muscle volume, abduction strength, goniometric angle, and passive hallux dorsi/plantar flexion showed significant changes in both groups ($p < .001$). Subscales of the foot and ankle ability questionnaire, significantly changed ($p \leq .05$). Pain decreased significantly in the two groups ($p < .001$ and $p = .02$). Intermetatarsal angle did not significantly differ between the two groups ($p = .86$, partial eta effect size = 0.001). But, the hallux valgus angle mean (on MRI) in the Ortho group was less than that of the orthoNMES group ($p = .007$, partial eta effect size = 0.15).

Conclusion: Both groups showed nearly identical treatment effects in the primary volume and hallux valgus correction outcome measures. In this study, adding neuromuscular electrical stimulation did not have an additional effect compared to conservative in the treatment of hallux valgus.

Keywords: NMES, Muscle volume, ROM

Comparison of the clinical and sonographic effects of Kinesio tape, Counterforce brace and Corticosteroid injection in lateral epicondylitis

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Introduction: Objective: The aim of the study was to compare the clinical and sonographic effects of corticosteroid injection, kinesio tape and counterforce brace in the treatment of lateral epicondylitis.
t5r

Materials and Methods: Design: A total number of 51 patients were randomized into three groups. Group 1 was given corticosteroid injection, group 2 received kinesio tape, and group 3 received counterforce brace. Pain was measured using a visual analog scale, Common Extensor Tendon thickness was measured with ultrasonography, functional status was measured using the Disabilities of Arm, Shoulder and Hand questionnaire and grip strength was measured using a dynamometer. All evaluations were performed before treatment and at the second and fourth weeks after the treatment.

Results: Results: No significant differences between the groups were observed for the VAS scores,common extensor tendon thicknesses, grip strength, and DASH questionnaire scale compared to baseline among the 3 groups ($P > 0.05$). A statistically significant difference was found between the pretreatment and posttreatment evaluations of pain intensity and Common extensor tendon thickness in all groups in the second and fourth weeks after treatment. According to the DASH questionnaire scale, the condition improved significantly in the brace group and corticosteroid group, whereas it had not improved in the kinesiotaping group compared to before treatment. none of the treatment methods increased the patients' grip strength.

Conclusion: Conclusion: The corticosteroid injection, kinesiotape, and specially counterforce brace are effective in reducing pain and tendon thickness. However, none of these treatment methods were found to be superior to others.

Keywords: Tennis Elbow, tape , Braces

A study on the effects of dry needling on the intrinsic and functional characteristics of spastic hand muscles: A randomized clinical trial

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Introduction: Stroke is one of the most common neurological disorders and is known as one of the common causes of death in the world. It can lead to many disabilities, especially if accompanied with spasticity. It has been found that spasticity is a very complex phenomenon, causing disturbances at different central and peripheral levels. Hence, finding the comprehensive treatment to manage it at different levels will provide more recovery. Therefore, the aim of this study is to investigate the effect of dry needling technique as a new and probably effective treatment in both central and peripheral levels on sonographic, biomechanical and functional parameters of spastic upper extremity muscles.t5r

Materials and Methods: Twenty-four patients (35-65 years), with spastic hand were allocated into 2 equal groups randomly: the intervention group, and sham-controlled group. The treatment protocol was 12-sessions of neurorehabilitation for both groups, and 4-sessions dry needling or sham-needling for the intervention group and sham-controlled group respectively on wrist and fingers flexor muscles. Muscle thickness by sonography, spasticity by modified Ashworth scale, upper extremity motor function by fugl-meyer, hand dexterity by box and block test as a primary outcome measures, and extensor peak torque and reflex torque by isokinetic and muscle compressibility by sonography as secondary outcome measures were assessed before, after the 12th session, and after 1-month follow-up by a blinded assessor.

Results: Data analysis showed that a significant reduction in muscle thickness, spasticity, peak extensor torque at the speed of 180°/s and reflex torque ($p<0.01$). There was also a significant increment in motor function and dexterity in both groups after treatment ($p<0.01$). These changes were significantly higher in the intervention group with large effect size ($p<0.01$) except for spasticity which had not a significant statistical difference among groups with moderate to large effect size ($p=0.064$). Moreover, a significant improvement was seen in all outcomes measured in 1-month after the end of the treatment in the intervention group ($p<0.05$) except for compressibility and there was a significant difference with a large effect size between groups in term of these variables ($P<0.05$). There was no improvement in compressibility one month after treatment and the behavior of the two groups was similar in terms of this variable with a small effect size.

Conclusion: Dry needling plus neurorehabilitation compared to neurorehabilitation treatment plus sham dry needling could provide more improvement in terms of reducing the muscle thickness, spasticity, peak extensor torque at a speed of 180°/s and reflex torque and also caused more increment in terms of motor function of the upper extremity and hand dexterity in chronic ischemic stroke patients with spastic upper extremity, therefore provide more effective and efficient treatment.

Keywords: Stroke, Spasticity, Dry-needling, Ultrasonography, Reflex-torque

The added value of performing cognitive tasks while applying whole body vibration on balance indices and cognition in patients with multiple sclerosis

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Introduction: Multiple sclerosis (MS) is the most common cause of progressive non-traumatic disability in people aged 20 to 50 years. Among the common disorders in these patients are balance and cognitive disorders. One of the therapeutic methods to improve balance is the use of cognitive-motor dual task balance training. The present study was designed with the aim of investigating the effect of the added value of performing cognitive tasks on the applying whole body vibration on balance indices and cognition of patients with multiple sclerosis.t5r

Materials and Methods: Forty patients with multiple sclerosis volunteered to participate and were randomly assigned to two intervention and control groups. Subjects in the intervention group were given a cognitive task while underwent whole body vibration 3 sessions per week for 6 weeks. Subjects in the control group were underwent only whole body vibration based on the same treatment protocol. Static and dynamic balance and the risk of fall were assessed by employing A Biodex Balance System. Functional balance and balance confidence were evaluated with Mini-BESTest and ABC questionnaire, respectively. MOCA and SDMT tests were employed to evaluate cognitive function. A quality of life-54 questionnaire was used to assess quality of life. All tests were measured before and after treatment.

Results: Between-groups comparison of all variables showed no statistically significant difference. In the within-groups analysis of variables in dynamic balance (level 3), functional balance and balance confidence, there were significant differences in both groups before and after treatment. In the within-groups analysis, dynamic balance variables (level 6) and the risk of falling were significantly different in the intervention group before and after treatment, however not significantly different in the control group.

Conclusion: Although statistical significance was not obtained in the comparison of results between groups, but in the comparison and analysis of the within-groups results, the findings of our study showed that in the cognitive-motor dual task training group, there were more sub-scales of balance and cognitive indicators after treatment. Compared to the single task group, an improvement was achieved, which can indicate an added positive value of doing cognitive tasks. It seems that performing cognitive-motor dual task training can generally improve balance and cognition in these patients.

Keywords: CMI, WBV, multiple sclerosis

Effect of shockwave therapy on Peyronie's disease

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Introduction: Peyronie's disease is one of the diseases that causes sexual dysfunction in men and there is still no cause-based therapeutic intervention for it. Patients with this disease often cannot have normal sexual activity due to pain during erection and deviation of the penis. Penile curvature is caused by the formation of fibrous tissue in the tunica albuginea. In this disease, between 2 and 5% of men suffer from it; Fibrous tissue causes deviation of the penis and erectile dysfunction, pain and shortness of the penis. It is mostly seen in men aged 40 to 60.t5r

Materials and Methods: Peyronie's disease has two phases, acute and chronic. In the acute stage, the disease is accompanied by pain in the penis. The chronic stage is the phase of the formation of fibrotic tissue in which connective tissue plaques are formed. Shock waves are sound waves with high pressure and low frequency that are applied to the damaged tissue in a special way. According to several clinical studies, penile pain in patients who underwent shockwave therapy decreased significantly faster than patients who did not undergo any treatment. Rapid reduction of penile pain significantly improves the patient's quality of life. Several clinical studies have shown that in men who have performed shock wave therapy, the curvature of the penis is significantly reduced or the progression of the curvature is clearly reduced. Studies show that shock wave therapy leads to the reduction of scar tissue (plaque). This problem can reduce the curvature of the penis to some extent. Reduction of scar tissue makes these men feel better about their penis and themselves.

Results: During three years of research and treatment, 50 people came to the physiotherapy clinic of Farmaniyeh Hospital for the treatment of sexual dysfunction, of which 23 people had Peyronie's disease, 7 people were treated between 1 and 3 sessions and did not continue. 16 people were treated for a period between 7 and 10 sessions. They were treated with Dornier shockwave focus made in Germany with intensity 7 to 9 and frequency 4. 2 people had 2 courses of 10 sessions with an interval of 4 months. The plaque detection method was examined both in terms of the number of plaques and the size of the plaques. Some had ultrasound. The evaluation scale of penile curvature angle and treatment was Visual Analogue Scale. The client's tilt range was between 15 degrees and 45 degrees. which had between 80% and 30% recovery based on the severity of the tilt angle. The criterion was the reduction of the angle of deviation and the improvement of self-image.

Conclusion: According to the obtained results, shockwave focus can be used to reduce pain and reduce penis deviation..

Keywords: Peyronie's disease - Shockwave therapy

Vestibular Physicaltherapy

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Introduction: Maintaining the balance of the body has a complex mechanism and different systems work together for this. The information of vestibular, somatosensory and visual receptors is analyzed and integrated in centers related to maintaining balance such as vestibular nucleus, cerebral cortex, cerebellum, etc. The vestibular part of the inner ear includes three semicircular canals (anterior, posterior, horizontal) and two otolith organs (utricle and saccule) that transmit messages related to the speed and acceleration of linear and angular movements of the head and body. Various diseases in the ear cause disorders in the vestibular system, which can cause vertigo for patients and disturb their balance. Vestibular physiotherapy is one of the fields of physiotherapy treatment which a trained physiotherapist treats the Vertigo and imbalance of these patients by vestibular exercise therapy and manual maneuvers.t5r

Materials and Methods: One of the common vestibular disorders is benign paroxysmal positional vertigo (BPPV), in which calcium carbonate crystals (otoconia) sensitive to gravity, which are placed on the otolithic membrane of the otolith organs, enter the semicircular canals and cause vertigo, nausea. , imbalance, etc. Vestibular Physiotherapists identify the involved semicircular canal by taking a detailed history, evaluating vestibular reflexes and diagnostic maneuvers such as Dix-Hallpike and then use crystal repositioning maneuvers related to each canal such as Semont to return the crystals to their original place (utricle otolithic membrane).

Results: Other ear diseases such as perilymphatic fistula, Meniere's disease (endolymphatic hydrops), vestibular migraine, etc. also cause disorders in the hearing and vestibular system of the patient, which the vestibular physiotherapist uses special vestibular exercises in the categories of Adaptation, Subsituation, Habituation, etc. That can relieve the patient's vertigo and improve the patient's balance.

Conclusion: Today, in some countries, in order to reduce the patient's cost and treatment time, vestibular physiotherapists are stationed in the emergency departments of hospitals to evaluate patients with vertigo and treat them if possible. In Iran, patients are referred to vestibular physiotherapists after examination and specialized evaluations by ENT specialists for the treatment of vertigo and instability. It is hoped that with the efforts of the physiotherapist colleagues, this field, which has been neglected, will be known more among related specialists, and the patients will not be deprived of this treatment method.

Keywords: vestibular physicaltherapy/ vestibular physiotherapy

Investigating the effect of Nintendo Wii on Clinical and Neural Properties of ankle spasticity in patients with stroke: a randomized clinical trial

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Introduction: Stroke is one of the most common causes of disability. Spasticity is a common clinical impairment that occurs after stroke. Spasticity occurs as a result of changes in the mechanical properties of the muscle and the neural properties following stroke. This study was designed to investigate the effect of Nintendo Wii games on the outcomes of ankle spasticity in patients with stroke.t5r

Materials and Methods: In this parallel single-blind clinical trial study, 30 patients with stroke were randomly assigned to one of the experimental and control groups. Subjects of both groups received conventional physiotherapy including stretching of ankle plantar flexor muscles and walking exercises on parallel bar. In addition, the experimental group also received Nintendo Wii games for 30 minutes, three times a week for a total of 12 sessions. The outcomes were clinical outcome of spasticity and neural properties that respectively evaluated using the Modified Modified Ashworth Scale and H-reflex latency and Hmax/Mmax ratio. All statistical analyzes were performed using SPSS version 20.

Results: The intragroup results showed that in the experimental group, clinical outcome of spasticity was significantly reduced ($p=0.001$). The comparison between two groups showed that there is no statistically significant difference in clinical outcome and neural properties between the experimental and control groups ($p>0.05$).

Conclusion: Considering that after the end of the treatment in the Nintendo Wii group, the clinical outcome of spasticity was significantly reduced. The use of Nintendo Wii can be suggested as a treatment modality alongside the usual treatments to achieve more and faster effectiveness in patients with stroke.

Keywords: stroke, spasticity, virtual reality

خلاصه مقالات

پوستر

The relationship between the psoas major muscle morphology characteristics with disability index and pain in patients with chronic nonspecific low back pain

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Introduction: Chronic nonspecific low back pain (CNLBP) is a common disorder in people of active ages and significantly affects their quality of life. Different structures in the lumbar area can cause LBP. The lumbar muscle disorders, including the psoas major (PM) muscles, have an essential role in LBP. Magnetic Resonance Imaging (MRI) has been introduced as a safe and useful instrument for investigating the morphological properties of skeletal muscle. In general, PM morphology changes may be one reason for the pain and disability experienced in CNLBP patients. Thus, this study aimed to assess the relationship among the PM's Cross-sectional area (CSA), medial-lateral (ML), and anterior-posterior (AP) diameters, with disability index and pain score in patients with CNLBP.t5r

Materials and Methods: One hundred twenty patients with CNLBP (60 men and 60 women) participated in this cross-sectional study. Axial MRIs were obtained from L3/L4 and L4/L5 disc levels. Then, patients filled out Rolland Morris Disability Questionnaires, demographic data forms, and the Numeric Pain Rating Scale (NPRS). Image J software was used to analyze the images. Using Linear Regression and the Pearson test, the correlation between muscle CSA and diameters, as well as data obtained from questionnaires and NPRS, was analyzed.

Results: Results from the statistical analysis showed no statistically significant relationship among morphological characteristics of the psoas major muscle in L3/L4 and L4/L5 disc levels with disability index and pain score ($p < 0.05$).

Conclusion: There is no significant relationship between the PM morphological characteristics and disability index and pain score. Therefore, muscle CSA and diameters are insufficient to determine the cause of CNLBP.

Keywords: Low-back-pain MRI Psoas-major Cross-sectional-area

The effectiveness of telerehabilitation for patients with Severe multiple sclerosis

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Introduction: Background: Research in telerehabilitation (TR) in neurology focuses on patients with low to moderate disability. For neurology patients with severe mobility limitations, TR can help to enable rehabilitation for people whose mobility limitations make it difficult for them to access rehabilitation facilities.
Objective: To evaluate the effectiveness of telerehabilitation of patients with severe multiple sclerosis
t5r

Materials and Methods: The study included 40 patients with multiple sclerosis who underwent a course of telerehabilitation. This survey targeted individuals with multiple sclerosis, specifically those with a higher level of disability (EDSS between 4 to 7). The course included 12 weeks, 2 sessions per week, and 60 minutes for each session. Various questionnaires and scales were used to assess the effectiveness, as well as an assessment of the neurological status.

Results: After the patients used the physical telerehabilitation system for 12 weeks, a statistically significant improvement was shown in Fatigue Impact Scale (from 69.4 +/- 3.8 to 40.8 +/- 9.3), Multiple Sclerosis Spasticity Scale 88 (286.5 +/- 34.6 to 188.7 +/- 5.7), and Berg Balance Scale scores (from 38.8 +/—11.1 to 43.1 +/— 9.9) trunk impairment scale (15.5 +/- 8.3 to 18.3 +/- 7.9) as compared with the baseline. Patients were highly satisfied with the service. We found a higher interest in upper limb exercises and balance training among people with higher disability.

Conclusion: The results of this study may help to improve the planning and targeting of TR interventions, where a different focus of intervention is appropriate for patients with different levels of disability. This may enable TR to be maximally tailored to patient capabilities and current greatest limitations. For example, for people with severe disabilities, it is appropriate to focus on training the upper limb function to maintain self-sufficiency and implement interventions to prevent falls. TR in patients can be an effective way to correct existing disorders. Further research is required to establish the effectiveness of TR. Home-based physical telerehabilitation can improve functional outcomes significantly in patients with multiple sclerosis.

Keywords: multiple sclerosis, telerehabilitation, exercise.

A comparative study of the effects of dry needling and hydrocortisone phonophoresis in people with non-specific chronic neck pain

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Introduction: One of the most common musculoskeletal pains is neck pain. Among the main reasons for its occurrence, we can mention the existence of trigger points, shortness and weakness of muscle adaptation due to unprincipled posture or repetitive movements. Among its treatment methods are dry needling and phonophoresis (i.e., the use of ultrasound waves to increase the absorption rate of the drug through the skin).

Hydrocortisone is one of the corticosteroid drugs used for phonophoresis. Therefore, the aim of this study is to investigate: dry needling and phonophoresis of hydrocortisone gel on pain level (VAS), pressure pain threshold (PPT) and the range of motion of bending to the same side (ILF) and to the opposite side (CLF) of the neck. People suffering from non-specific chronic neck pain.t5r

Materials and Methods: This study is a double-blind randomized clinical trial on 60 people with an age range of 18-25 years. People were randomly divided into 3 groups and 10 sessions of treatment were performed using dry needling and 1% hydrocortisone gel phenophoresis. The variables of this study were evaluated before the treatment, at the end of the 10th session, and two weeks after the last treatment session in order to follow the stability of the treatment effects.

Results: The effect of both treatment methods on all pain variables, pressure pain threshold and range of motion of the neck after the end of the sessions was significant ($p<0.001$, but no significant difference was seen between the treatment interventions.

Conclusion: The results show that although the dry needling method is not superior to hydrocortisone phenopherosis in terms of effectiveness on pain, pressure pain threshold and range of motion of the neck in people with non-specific chronic neck pain, it is durable. It is more effective.

Keywords: pain, phonophoresis, dry needling, neck

Investigating the effect of friction massage on the amount of pain and range of motion of the neck in people with active trigger points of the upper trapezius muscle

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Introduction: Trigger points are one of the most common causes of musculoskeletal pain, especially in the neck area, and subsequently have a great effect on reducing the range of motion. One of the methods of treating trigger points is, friction massage. Therefore, the purpose of this study is to investigate the effect of friction massage on the pain level (VAS), the range of motion of bending the neck to the same side (ILF) and also to the opposite side (CLF) in people with active trigger points in upper trapezius muscle.t5r

Materials and Methods: This study is a double-blind randomized clinical trial on 40 people with an age range of 18-25 years. People were randomly divided into 2 groups and 10 treatment sessions were performed using friction massage. The variables of this study were evaluated before the treatment and at the end of the tenth session.

Results: Findings: The effect of friction massage therapy on all variables of pain and range of motion of the neck in people with active trigger points in the upper trapezius muscle was significant after the end of the sessions ($p<0.001$).

Conclusion: The results show that friction massage therapy is effective on neck pain and range of motion in people with active trigger points in the upper trapezius muscle.

Keywords: pain, trigger points, friction massage

Coordination of the Lower Limbs of Soccer Players after Anterior Cruciate Ligament Reconstruction with Allograft and Autograft during Landing

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Introduction: Quantitative biomechanical tests, along with physical assessment, may be useful to understand kinematics associated with graft types in anterior cruciate ligament surgery, particularly in individuals aiming for a safe return to sport.t5r

Materials and Methods: Sixty male soccer players in three groups participated in this study. Three equal groups of healthy, auto

transplanted and allotransplanted participants, matched for age, gender, activity level and functional status, landed with one foot on a force plate. Their kinematic information was recorded by the motion analyzer and used to describe coordination the variability by measuring coupling angles using vector coding.

Results: The coordination variability of the allograft group in the surgical limb was significantly greater than that of

the healthy group at least 9 months after the reconstructive surgery of the ACL and at the stage of return to sports, ($F(6, 35) = 2.79$, $p = 0.025$; Wilk's $\Lambda = 0.676$, partial $\eta 2 = 0.32$). The coordination pattern in the surgical and healthy limbs of the surgical groups also differed from that of the healthy people, which was more pronounced in the allograft group, ($F(6, 35) = 2.61$, $p = 0.034$; Wilk's $\Lambda = 0.690$, partial $\eta 2 = 0.31$).

Conclusion: These results show that the allograft group has a different coordination variability at return to sport

than the healthy group, so they may need more time for excessive training and competition.

Keywords: Allograft, ACL, Autograft, Coordination variability

The Effects of Dry Needling on Healing Process of Diabetic Foot Ulcers

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Introduction: Peripheral Neuropathy and arterial diseases are a common complication of diabetes, affecting approximately 60% of patients with type 2 diabetes mellitus. They are a major contributor to diabetic foot ulcers (DFUs), which can lead to amputation and significantly reduce quality of life. Despite the high prevalence of these complications, there is no satisfactory disease-modifying therapy, and current therapeutic strategies for diabetic foot ulcers have limited success. To evaluate the effect of dry needling (DN) on neuropathy intensity, blood circulation and ulcer size in two patients with DFU.t5r

Materials and Methods: Two cases of DFUs showed poor recovery after conventional wound care treatment. A 62-year-old man with an 18-year history of type 2 diabetes mellitus and a 58- year- old man with a 22-year history were treated. The medial and lateral head of the gastrocnemius, distal medial and lateral soleus, flexor hallucis longus, flexor digitorum longus, tibialis anterior, fibularis longus and extensor hallucis longus muscles were needled for 1 minute and needles were left in each point for 10 minutes. The patients received 8 sessions of DN treatment with a frequency of two sessions per week with 48 hours interval between sessions in 4 weeks. The main outcome measures were Michigan Neuropathy Screening Instrument (MNSI) and neurothesiometer to evaluate neuropathy, Ankle Brachial Index (ABI) for the assessment of vascular status and blood flow, and Image j software to precisely measure the ulcer area. The assessments were conducted before the first session and after the eighth session of DN.

Results: Case 1 completely healed from a 1.21 cm2 plantar ulcer on the right foot after eight sessions of dry needling. In this patient neuropathy symptoms improved as the MNSI score decreased (11 to 6) and neurothesiometer score decreased from 28 to 21 volts. Blood flow improved as the ABI score increased (0.8 to 1.0) after DN treatment.

The ulcer area of the left foot in case 2 decreased from 3 to 1.3 cm2. Two months of follow-up revealed full wound closure. As in the above case, neuropathy symptoms improved as the MNSI score decreased (10 to 7) and neurothesiometer score decreased from 25 to 18 volts. Blood flow improved as the ABI score increased (0.5 to 1.1) after DN treatment.

Conclusion: Eight sessions of DN targeting the leg muscles significantly reduced neuropathy symptoms and improved blood circulation. These findings suggest that DN is an effective treatment for enhancing ulcer healing, and can be used as an adjunctive therapy for patients with DFUs.

Keywords: Diabetic foot ulcers, dry needling

Effects of static stretching on spasticity, active range of motion and function in chronic stroke patients, a systematic review

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Introduction: Background: Stroke is a leading cause of disability worldwide, often accompanied by complications such as spasticity. Static stretching is a common physiotherapy intervention for reducing spasticity. Given the pivotal role of spasticity in daily activities, mitigating spasticity can significantly contribute to restoring the patient's independence. There is a need to conduct a systematic review to examine the effects of this treatment method in clinical trial studies.t5r

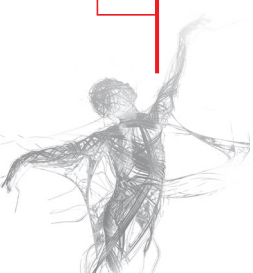
Materials and Methods: Objective: This study aims to examine the effect of static stretching on spasticity, range of motion and function in patients with chronic stroke.

Methods: This systematic review was conducted for clinical trial studies with PEDro scale above 5 by using the MEDLINE, PEDro databases. Participants in clinical trial studies were chronic stroke patients with spasticity in plantar flexor muscles. Interventions included static stretching on plantar flexors. Outcome measures including spasticity, active range of motion and function were assessed to extract the results.

Results: Results: A total of 5 clinical trial studies with 164 participants were included in this review. All studies were of moderate to high quality. Spasticity was reduced significantly in static stretching compared with control groups. Active range of motion was examined in 3 studies, in 2 studies, static stretching increased active range of motion, and one study reported no significant difference. Function was examined in two studies where there was significant increase in quality of life and function after receiving static stretching.

Conclusion: Conclusion: Prolonged static stretching are superior and more effective than short duration one to reduce spasticity and increase quality of life in chronic stroke patients. This study also reveals that static stretching is more effective in plantar flexors than upper extremity muscles in reducing spasticity.

Keywords: Stroke spasticity strtching plantar flexor



Translation, Cross-Cultural Adaptation, and Validation of the Persian Version of the Harris Hip Score

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Introduction: The Harris hip score (HHS), a self-administered questionnaire, is widely used to evaluate hip pathology affecting health-related quality of life and physical function. This study's purpose was HHS translation to Persian (HHS-Pr) and validation in patients with different hip pathologies.t5r

Materials and Methods: Translation and cultural adaptation followed existing guidelines. Hip pathology patients (n ¼ 151) completed the HHS, 12-Item Health Survey, and the Western Ontario and McMaster Universities Arthritis Index (WOMAC). Criterion validity was determined from comparisons between the HHS measures and the different corresponding WOMAC domains. Internal consistency used Cronbach's alpha (a), content validity the "content validity index," and floor/ceiling effect the end-range 15%. Test-retest reliability used the intraclass correlation coefficient (subsample n ¼ 30) at 3-7 days that compared baseline with a repeated measure. Measurement precision and change sensitivity used longitudinal assessment (subgroup n ¼ 30) from the standard error of the measurement and minimal detectable change.

Results: Cross-cultural adaptation required minor wording changes. The mean HHS-Pr was 57.77 ± 19.69. Criterion validity was significant with the WOMAC (r ¼ 0.76) and 12-Item Health Survey Physical Component Summary (r ¼ 0.47). Internal consistency was high before (a ¼ 0.75) and after standardization (a ¼ 0.86). Content validity was satisfactory (content validity index ¼ 0.88). No floor/ceiling effects were found. Test-retest reliability (intraclass correlation coefficient ¼ 0.85) was excellent, as was standard error of the measurement (raw score ¼ 5.8) and minimal detectable change (raw score ¼ 11.4).

Conclusion: The HHS-Pr demonstrated adequate validity, reliability, and sensitivity to change. These psychometric properties sufficiently measure functional status in patients with hip pathologies in a Persian-speaking population.

Keywords: Osteoarthritis Harris Persian Validation Arthroplasty

TOTAL HIP ARTHROPLASTY: A SOLUTION FOR PREVIOUSLY FUSED HIP

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Introduction: Total hip arthroplasty in previously fused hip is a challenging procedure rarely performed. In our previous experience, the procedure was successful in limited number of patients. In current study, we investigated the outcomes of THA in more patients with a fused hip.t5r

Materials and Methods: There were 33 patients with previous hip fusion. The patients aged about 28 years at the time of arthrodesis and 52.3 years at the time of THA. The chief complaint was sever LBP in 9 patients, severe ipsilateral knee pain in 14 patients and both in 10 patients. All of the surgeries were performed by the same surgeon (A.T). The patients were followed for 2 years.

Results: At the final visit, 27 patients were pain free or experienced mild pain (84%). In these patients the pain intensity decreased from 7.3±2 to 1.4±1 using visual analogue scale (VAS). Harris hip score (65±14 Vs 82±6) and Oxford hip score (33±6 to 18±7) improved significantly after the operation ($p<0.001$). Four of the remaining patients had severe pain and two others needed assistive devices for ambulation. 2 patients developed heterotrophic ossification. Furthermore, common fibular nerve paresis developed in 4 patients which resolved after 3 months in all of them. Four patients ambulated with limping.

Conclusion: Considerable pain relief can be achieved in patients with fused hip using THA. In addition, the functional status significantly improved. However, the procedure is technically demanding and some complications are possible. Furthermore, THA may be not helpful for some cases as expected.

Keywords: Arthroplasty fused hip

TOTAL JOINT REPLACEMENT FOLLOWING FAILED HEMIARTHROPLASTY

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Introduction: There are some reports regarding the outcomes of conversion total hip arthroplasty (THA) following failure of hemiarthroplasty. However, it is necessary to perform more studies to assure the acceptable outcomes of previous studies. In current study, we continued our previous study on these patients with more number of patients and longer follow up period.t5r

Materials and Methods: A total of 165 patients from 2009 till 2020 had conversion of their failed hemiarthroplasties following a proximal femoral fracture to total hip arthroplasty (THA). We performed a prospective analysis of the outcome of conversion surgery in patients with failed hemiarthroplasty. The patients had clinical evaluations at 1 month, 6 months, 1 year, and annually thereafter. Harris Hip Score (HHS) was completed to evaluate the results of conversion procedure in terms of relief of groin pain and functional improvement.

Results: Dislocation occurred in 10 patients (6%). The mean period of follow-up was 61 months. HHS score improved from mean preoperative score of 49.2±11.2 to 91.3±7.7 at final follow-up. The survivorship analysis with revision of HHS score was 83.7%. Infection develoment (P=.038) and time of primary operation to being symptomatic (P=.009) can predict the postoperative pain and poor prognosis significantly.

Conclusion: We conclude that conversion of failed symptomatic hemiarthroplasty to THA is a safe option which can lead to good functional and short-term and mid-term outcomes; and patients should be informed of the possibility of incomplete relief of groin pain or other symptoms postoperatively. We also showed that time of primary operation to being symptomatic and infection in patients had poor prognosis in existence of pain postoperatively.

Keywords: arthroplasty Conversion hemiarthroplasty failure

IS ONE-STAGE BILATERAL TOTAL HIP ARTHROPLASTY A SAFE PROCEDURE FOR PATIENTS WITH AVASCULAR NECROSIS OF FEMORAL HEAD?

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Introduction: Total hip arthroplasty (THA) is one of the successful and cost-benefit surgical treatments. One-stage bilateral THA (BTHA) offers many benefits. However, there are concerns about the safety of the procedure and higher complications. We aimed to evaluate the complications and outcomes of one-stage BTHA with Hardinge approach for femoral head avascular necrosis patients.t5r

Materials and Methods: A total of 60 patients from April 2009 and May 2013, were underwent one-stage bilateral total hip arthroplasty (BTHA) in Milad and Erfan hospitals, Tehran, Iran. A prospective analysis of the functional outcomes and complications of one-stage BTHA through Hardinge approach in patients with femoral head avascular necrosis (AVN) performed. We evaluated all patients clinically and radiologically with serial follow-ups. A clinical hip score based upon the modified Harris Hip Score (MHHS) was performed pre-operatively and again postoperatively.

Results: During period of study 44 men (73.3%) and 16 women (26.6%) with a mean age of 31.40±4.08 years (range 25 to 36 years) at the time of presentation were entered. The mean surgical time was 2.6±0.38 hrs. The mean hospital stay was 3.50±0.72 days. Hemoglobin level decreased significantly after operation, the preoperative values of 15.2 ± 3mg/dL decreased to postoperative values of 12.2 ± 2.7 mg/dL (P= 0.046). There was no reported patient with perioperative death, deep venous thrombosis, pulmonary embolism, infection, dislocation, periprosthetic fracture or heterotrophic ossification. The mean preoperative MHHS score was 47.93±7.33 in patients. MHHS score improved to 95.06±3.47 in the last follow-up (P=0.0001)

Conclusion: Based the findings of current study, one-stage BTHA through Harding approach is a safe and useful treatment for patients with femoral head avascular necrosis. However, long term studies are necessary.

Keywords: bilateral arthroplasty outcome complication AVN

The association between lower limb joint position sense and different aspects of gait pattern in individuals with bilateral knee osteoarthritis

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Introduction: Knee osteoarthritis (KOA) can have more pronounced effects on joint position sense (JPS) accuracy and gait characteristics. The aim of this study was to investigate the association between lower limb JPS and different aspects of gait pattern including gait asymmetry, gait variability and spatiotemporal coordination in individuals with bilateral KOA.t5r

Materials and Methods: In this cross sectional study, lower limb JPS of forty-three individuals with bilateral KOA (mild and moderate) were measured. Additionally, participants´ gait patterns during treadmill walking with self-selected comfortable speed were assessed. The correlations between JPS errors and coefficient of variance (CV) of gait parameters, and also between JPS errors and walk ratio were analyzed using Spearman Correlation in limb with moderate affected KOA. Similar analysis was performed between JPS errors of limb with moderate affected KOA and symmetry index (SI) of spatiotemporal gait parameters.

Results: Positive relationships were found between stance time SI and JPS errors of hip abduction (r=0.46, P= 0.003), ankle plantar flexion (r=0.33, P=0.03) and ankle dorsiflexion (r=0.33, P=0.03). Also, positive relationship was found between single limb support time SI and hip abduction JPS error (r=0.41, P=0.008). In addition, significant negative associations were found between CV of step length and JPS errors of knee extension (r=0.47, P=0.002) and ankle plantar flexion (r=0.33, P=0.003). Results did not show any significant relationship between lower limb JPS errors and walk ratio.

Conclusion: The results of our study demonstrated significant relationships between the lower limb JPS and gait asymmetry and variability of some spatiotemporal parameters in individuals with bilateral KOA. Therefore, these findings highlighted the importance of concerning the proprioceptive exercises in rehabilitation of individuals with bilateral KOA.

Keywords: Knee Osteoarthritis, Gait disorder

The survey of prevalence of neuromusculoskeletal disorders among Mazandaran's physiotherapists: a cross-sectional study

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Introduction: Studies that have been done all over the world shows high percentage of physiotherapists after entering work, suffer from backache that the frequency of this disorder ranges from 29% to 68% in different countries. Therefore, it is necessary to conduct a study on this issue in order to sound an alarm for physiotherapists to draw more attention to this issue.t5r

Materials and Methods: In this cross-sectional study,110 physiotherapists of Mazandaran were selected by sampling method that the organizers of project provided them with questionnaires in person and virtually and 9 questionnaires were excluded from the study due to incomplete completion and the process of reviewing the finding continued with 101 questionnaires. Statistical analyzes in this study were performed using SPSS software version 24 and descriptive tests, chi-square, fisher exact test and t-test.

Results: Among the 101 participants, 64 were women and 37 were men that the average and age range of the women were 31.14 ± 8.38 and 23 to 56 respectively and the man were 36.92 ± 11.15 and 23 to 55. The highest prevalence of neuromusculoskeletal disorders in all physiotherapists is related to the neck area (60.4%) followed by the back (53.5%) and the lowest is related to the ankle area (4%). Based on the result, there is not significant relationship between the prevalence of neuromusculoskeletal disorders and gender, education level and hand dominance. The result of the T test showed that the prevalence of disorders in the wrist increases with age (p=0.014).

Conclusion: The prevalence of musculoskeletal disorders is high among physiotherapists. the prevalence of these disorders in the neck region is (60.4%), back (53.5%), thoracic (41.6%), shoulder (39.6%), knee (29.7%), wrist (28.7%), elbow and hip (18.7%) and ankle was (4%). This indicates the existence of problems in the spine and upper limbs of physiotherapists requires special attention so that in the future, with appropriate educational plans, the prevalence of these disorders among physiotherapists and their negative effect on the health of physiotherapists and the quality of their services can be reduced.

Keywords: neuromusculoskeletal disorders, physiotherapists, prevalence

Effects of core stability exercises on pain and disability in women with postpartum lumbopelvic pain

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Introduction: Background: Lumbopelvic pain (LPP) is a prevalent disabling compliant of pregnancy that affect nearly 50% of women during pregnancy and 25% in postpartum period. Core stability exercises (CSE) in women with postpartum LPP can help achieve a cost-effective treatment. There is a need to conduct a systematic review to examine the effects of this treatment method in clinical trial studies.

Objective: The aim of this study is to investigate the effectiveness of CSE on pain and disability in women with postpartum LPP.

t5r

Materials and Methods: This systematic review was conducted for clinical trial studies by using the PubMed, MEDLINE and PEDro databases. Participants in clinical trial studies were patients with postpartum LPP. Intervention included CSE. Outcome measures including pain and disability were assessed to extract the results.

Results: A total of 5 clinical trial studies with 280 participants were included in this review. All studies were of moderate to high quality. Pain was reduced significantly in all study. Disability was examined in 4 studies, in 4 studies, CSE improved disability. Pelvic floor muscle function was examined in 3 studies, in 3 studies, CSE improved Pelvic floor muscle function.

Conclusion: The CSE can remarkably improve pain and disability in women with postpartum LPP.

Keywords: Lumbopelvic pain, Postpartum, Stabilization exercise

Providing a caring guideline for Duchene dystrophy patients and their families: a literature review

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Introduction: Duchenne Muscular Dystrophy (DMD) is a devastating inherited disease of children with no effective therapies. Family members undergo emotional, social and economic strain while caring for a child with Duchene dystrophy. Therefore, the need for patient and family caring program is completely felt. Our objective was to produce a guideline that can be used as an excellence guide for their familiest5r

Materials and Methods: A 5-step review was undertaken as follows: defining the review question, setting the review objectives, searching databases to identify relevant studies, selecting studies according to set criteria, and extracting and analyzing the data. In the third stage we conducted our review of existing literature using PubMed, CINAL, Science Direct, Ovid, Embase, Pro Quest, Web of science and Google Scholar database between 1991 and 2024. Researchers used the MESH key words Muscular dystrophy, Duchenne, Comprehensive Health Care, caregiver separately or in combination

Results: In this section, the complications along with the interventions that the family can do are given. Pain management, help for promoting muscle strength, help for promoting activities of daily living, considerations for using drugs, cardiac management, respiratory considerations, gastrointestinal management, nutrition, psychosocial management and endocrine/metabolic function management are the most actions that the family can take.

Conclusion: Since Duchene dystrophy is chronic, like other chronic diseases, self-care and the role of the family in these patients is very important. Family can play an important role in preventing physical, psychological and social problems in these patients and improve their quality of life.

Keywords: Muscular dystrophy, Duchenne, Health Care

Investigating the relationship between psychological factors (fear of movement and pain catastrophizing) and the functional performance of athletes with patellofemoral pain syndrome: A cross-sectional study

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Introduction: Introduction: Patellofemoral pain syndrome (PFPS) is one of the most common musculoskeletal complaints in adults and active young people. Individuals with PFPS may suffer from anxiety, depression, pain catastrophizing, and fear-related pain. A deep understanding of the relationship between psychological factors and functional impairment in these people may improve the choice of treatment strategies and prevent this disorder from becoming a chronic condition.

Objective: This study aimed to investigate the relationship between psychological factors (fear of movement and pain catastrophizing) and the functional performance of athletes with PFPS.

t5r

Materials and Methods: Methods: Sixty-one male athletes with an average age of 18 to 45 years and a history of PFPS for more than 3 months voluntarily participated in this study. At first, the participants completed the Tampa Scale of Kinesiophobia (TSK) and the Pain Catastrophizing Scale (PCS). Then, their function was tested using the Kujala Patellofemoral Scale (KPS) and the functional tests of step down, bilateral squat, single-leg hop, modified star excursion balance test, and side hop test.

Results: Results: All examined functional tests had a weak to moderate correlation with the score of TSK and PCS. However, the score of KPS had a moderate to strong correlation with the scores of TSK and PCS.

Conclusion: Discussion: Psychological factors had a significant relationship with functional tests and the self-reported functional measure. Therefore, according to the results of this study, it is advised that therapists to adopt approaches that consider psychological factors, such as the biopsychosocial approach, in managing the treatment of people with PFPS.

Keywords: Kinesiophobia, Catastrophization, PatellofemoralPain Syndrome, Function

Responsiveness of a Persian Version Of The International Knee Documentation Committee And The Anterior Cruciate Ligament–Quality Of Life Questionnaires in Athletes With Anterior Cruciate Ligament Reconstruction Following Physiotherapy Intervention

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Introduction: Introduction: The International Knee Documentation Committee (IKDC) and Anterior Cruciate Ligament—Quality of Life Questionnaire (ACL-QOL) are frequently used patient-reported instruments designed for individuals with anterior cruciate ligament reconstruction (ACL-R).

Purpose: To evaluate responsiveness and determine minimal important change (MIC) for the Persian-version of IKDC and ACL-QOL in athletes with ACL-R following physiotherapy intervention.

t5r

Materials and Methods: Method: One hundred athletes with ACL-R, undergoing 16-week physiotherapy completed IKDC and ACL-QOL at weeks 4 and 20 post ACL-R. Participants also rated their overall changes on a 7-point global rating of change at follow-up. Responsiveness was evaluated using the receiver operating characteristics (ROC) curve and correlation analysis. In addition, the minimal important change (MIC) was determined on the ROC curve.

Results: Results: Acceptable responsiveness was reached by the IKDC and most of the subscales of ACL-QOL (area under the ROC curve (AUC) of 0.72-0.79). Also, the subscale of Lifestyle issues of ACL-QOL (AUC of 0.81 (95% CI = 0.72—0.89) and the overall of ACL-QOL (AUC of 0.87 (95% CI = 0.80—0.93) showed the good level of responsiveness. The MIC scores of IKDC and the Overall ACL-QOL were determined 25 and 26 points, respectively.

Conclusion: Conclusion: The IKDC and ACL-QOL questionnaires have adequate responsiveness and are able to measure the change in athletes with ACL-R following a 16-week physiotherapy intervention.

Keywords: Questionnaire; Responsiveness; MIC; ACLR; Rehabilitation

"Investigating the effect of TL-IMT with respiratory biofeedback on the dynamic strength of inspiratory muscles (S-index) in patients who are candidates for CABG in the hospitalization phase"

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Introduction: One of the effective ways to post-operative pulmonary complications and improvement the strength of the inspiratory muscles in heart patients is to use threshold loading inspiratory muscle training (TL-IMT), which is less used in the hospitalization and postoperative phase. In this study, we intend to evaluate the effect of using these exercises, along with respiratory biofeedback (which, to the knowledge of the authors of the present study, has not been investigated so far), to examine the dynamic strength of inspiratory muscles (S-index) and other respiratory parameters, in the CABG patients at the inpatient phase before and after surgery.t5r

Materials and Methods: This study was conducted on 38 patients who were candidates for heart surgery, in 2 study (IMT and respiratory biofeedback, 20 people) and placebo (IMT placebo,18 people) groups and for 2 days before the operation until the patient's discharge time, the measurements include dynamic strength of inspiratory muscles (S-index), peak inspiratory flow (PIF) and vital capacity (VC) were performed at three time points before surgery (T1), one day after surgery (T2) and at discharge time (T3).

Results: Based on the results of the repeated measurements test for intragroup measurement of the dependent variables, it showed significant changes in these variables in favor of a decrease in T2 compared to T1 and an increase in T3 compared to T2 in both groups, also in the study group the measurement values was unchanged at T3 compared to T1, while it showed a significant decrease in the control group. In examining the average changes of the variables by the independent T test, the higher significant changes were seen in the study group at T3-T2 and T3-T1 compared to the control group, while at T2-T1 there had not been created a significant difference between the two groups.

Conclusion: The results of this study showed that the use of TL-IMT exercises along with respiratory biofeedback compared to placebo IMT after surgery can maintain the dynamic strength of the inspiratory muscles (S-index) and other respiratory parameters (PIF and VC) at the time of discharge as before the operation. This is despite the fact that performing two days of interventions by any of the mentioned methods in the hospitalization phase before the operation does not prevent the loss of strength and respiratory parameters on the day after the operation.

Keywords: IMT-TL- CABG- respiratory biofeedback- S-index

Warm-up Effect on Dynamic Inspiratory Strength in Cardiac Surgery Candidates: Investigating Immediate Impacts on the S-Index and Lung Parameters

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Introduction: One of the new tools to safely measure the strength of the inspiratory muscles in heart patients, to prevent post-operative pulmonary complications, is the use of strength-index. The study aims to explore the immediate effects of a respiratory warm-up (RWU) session on the S-index test and other lung parameters in patients undergoing cardiac surgeries—a topic that remains underexplored in the literatures. t5r

Materials and Methods: This study was conducted as a randomized controlled trial. Forty patients scheduled for heart surgeries were randomly assigned to either the RWU (between two tests) or control (without RWU) groups. Lung parameters, including S-index, peak inspiratory flow (PIF), and vital capacity (VC), were assessed using the Power Breath K5 device. Patients in the study group performed one round of TL-IMT exercises at 30% of their S-index load between measurements at the same day.

Results: Covariance analysis showed no significant changes in S-index, PIF, or VC indices between the RWU and control groups. Independent T-tests also revealed no significant differences in changes between the groups. Intra-group changes pre- and post-warm-up were mostly non-significant, except for the Best-VC index.

Conclusion: Based on the results of the present study, and the fact that, the test values remained constant before and after the RWU, it seems that there is no need to perform a RWU before performing the S-index test with using the 3 breathing effort method.

Keywords: S-index- respiratory warm up-reliability, CABG

"Assessing the Reliability of the Strength-Index: A Dynamic Indicator of Inspiratory Muscle Strength in Preoperative Cardiac Surgery Candidates"

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Introduction: S-index or Strength-index is a new tool to measure the dynamic strength of inspiratory muscles. which can be used to determine the appropriate training load in inspiratory breathing exercises with threshold loading (TL-IMT). Since this measurement method is performed without holding the breath and is more similar to a person's physiological breathing, it can be used with less risk in patients who are candidates for heart surgeries. In this study, the aim is to determine the reproducibility of the S-index in this group of patients and in the hospitalization phase before surgery, which has not been investigated in any study so far. t5r

Materials and Methods: This study is a unidirectional blind and randomized study on 20 patients who are candidates for coronary artery bypass graft (CABG) surgery who were admitted to the hospital for pre-operative examinations (11 men, 9 women, average age 13 ± 56 years) and have The conditions for entering the study. It was calculated the inter-examiner reliability for dynamic inspiratory muscle strength (S-index) as well as other variables obtained from the electronic breathing device Power Breath K5, including peak inspiratory flow (PIF) and vital capacity (VC), in two average and best values, with using intragroup correlation coefficient (ICC), and at a time interval of one hour from each other.

Results: The results obtained from this study had indicated good intra-examiner reliability for S-index and PIF at their average values (ICC>0.86), and excellent intra-examiner reliability for S-index and PIF at their best values and VC at its best and average values(ICCs>0.9).

Conclusion: According to the results of intra-examiner reliabilities obtained from this study, for the breathing tests with the power breath K5 device, which was in the good and excellent range, it can be used to determine the dynamic strength of the inspiratory muscles (S-index) and also to determine the appropriate training load in Phase one of cardiopulmonary rehabilitation.

Keywords: TL-IMT-Sindex-CABG-cardiac rehabilitation

The effects of kinesio tape on knee preconception, pain, balance and quality of life in subjects with knee osteoarthritis

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Introduction: Osteoarthritis is the most common form of arthritis and the knee joint is the most commonly involved joint. Knee osteoarthritis is caused by aging and over time, it causes disability.This study investigated the effects of kinesio tape on various types of pain, knee proprioception, balance and quality of life (functional status) in patients with knee osteoarthritis.t5r

Materials and Methods: Fourty seven patients diagnosed with knee osteoarthritis were randomized to receive either kinesio tape or sham kinesio taping. Patients received the same exercise in both groups, in the treatment group, patients recived Quadriceps facilitation technique and ligament application technique, in control group, patients recived sham kinesio tape. The assessment was performed at baseline, 30 minute after the initial kinesio tape application, the fifth kinesio tape application and 1 week later. Pain level (during rest and activity) was measured using the visual analog scale (VAS). Proprioception accuracy was measured using digital inclinometer. Balance was measured using berg balance scale and The quality of life (functional status) of patient was evaluated using Western Ontario and MCmaster universities (WOMAC) osteoarthritis scale

Results: In both groups VAS for activity pain, VAS for rest pain and WOMAC score decreased and joint position sense error and balance improved significantly but no significant differences between groups for pain, balance and joint position sense error was seen. Exept balance, the lack of significant difference between groups, was also seen at the follow up assessment. WOMAC scores were significantly differ between groups

Conclusion: the study result the same effects of sham kinesio tape with kinesiotaping techniques used in this study on reducing pain, improving balance and joint position sense error. Our findings indicate inconclusive evidence of a beneficial effect of kinesio taping over sham taping in knee osteoarthritis

Keywords: kinesio tape, knee osteoarthritis,balance, proprioception.

Fear of Falling May Impair Dual-Task Performance in Older Adults

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Introduction: Fear of falling (FOF) is common in elderly and may influence on normal walking in this population. The study purpose was to define the effect of fear of falling on cognitive motor interference in older adults.t5r

Materials and Methods: Ninety older adults with the ability to walk 20m and also without cognitive disorder participated in this study. Three groups (n = 30) including high FOF, low FOF and no FOF were determined using Falls efficacy Scale-International (FES-I). The cognitive-motor interference was determined for the completion time of 3 functional movements including forward walking (FW), timed up & go (TUG), and obstacle crossing (OC) and also the correct answer rate in verbal fluency (VF) and mental tracking (MT) tasks. The difference in outcomes between the groups was defined using MANOVA. The association between FES-I and cognitive-motor interference in participants with FOF was determined using Pearson correlation coefficients.

Results: Dual task cognitive performance measures including MT + TUG, VF + OC, and MT + OC were different significantly between high FOF and no FOF groups ($P < 0.05$). MT + TUG, VF + OC, and MT + OC were also different significantly between high FOF and low FOF groups ($P < 0.05$). Other cognitive-motor interference measures were not different significantly between the groups. FES-I was positively related to MT + TUG ($r = 0.76$, $P < 0.001$), VF + OC ($r = 0.72$, $P < 0.001$), and MT + OC ($r = 0.65$, $P < 0.001$) in participants with FOF.

Conclusion: The results indicated that FOF may impair cognitive performance during dual tasks in older adults. Future studies may be needed to investigate whether reduced FOF lead to dual task improvement in older population.

Keywords: Fear, Walking, Dual task, Elderly

Deficits in Motor Imagery of Gait in Older Adults with Different Levels of Concerned about Falling

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Introduction: Fear of falling (FOF) is a psychological condition among older adults characterized by impaired balance, activity avoidance and future falls. The aim of the current study was to determine the effect of FOF on motor imagery, which is a valid methodology to evaluate the planning stage of motor execution, for better anderstanding of the underlying mechanisms of FOF could help expand potential treatments.t5r

Materials and Methods: The study design was cross-sectional. Ninety community-dwelling older adults were divided into three groups including no FOF, low FOF and high FOF according to Falls efficacy Scale-International (FES-I). Participants were evaluted for both imagery and execution tasks of a Timed Up and Go (TUG) test. TUG test requires participants to stand up from a chair, walk around a marker 3 m away, and return to and sit on the chair as fast as possible. The participants were first asked to imagine the task (iTUG) and estimate the time it would take, and then perform the actual task (aTUG). The difference between iTUG and aTUG (Δ TUG) was then calculated. The secondry outcome measure was the number of falls within a past year. Multivariate Analysis of Variance was used for comparing the outcome measures between the 3 groups.

Results: Δ TUG was significantly higher in high FOF group compared to the other two groups (tendency to overstimate) ($P < .05$). Δ TUG was not significantly different between no and low FOF groups. The number of falls was significantly different between the no and high FOF groups ($P < .05$).

Conclusion: Older adults with high FOF overstimate their TUG performance, indicating impairment in motor planning. Overstimation of physical capabilities may be an explanation of the high number of falls in this group.

Keywords: falling, Motor imagery, elderly

Investigation of the effect of high-power laser on supraspinatus tendon partial tear using musculoskeletal ultrasound

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Introduction: Background: Supraspinatus tendon injuries, often manifesting as partial tears, are common in shoulder tendinopathy. These injuries can lead to significant pain and functional impairment. There is growing interest in the efficacy of high-power laser (HPL) therapy, but the efficiency of HPL in supraspinatus tendon partial thickness tear is un-known.

Objectives: A single-blind randomized controlled clinical trial was conducted to investigate the clinical and ultrasonic effect of HPL on supraspinatus tendon partial tear.

t5r

Materials and Methods: Methods: Individuals with isolated partial thickness tear of the supraspinatus tendon tear (36 subjects) were randomly divided into two groups: HPL (18 subjects) and sham (18 subjects). HPL and sham treatment were performed in both groups for 10 sessions and 3 times a week, and both groups also received therapeutic exercises. Pain intensity was measured by visual analogue scale (VAS) (in three conditions of night, rest and activity), supraspinatus tendon thickness, and acromiohumeral distance (AHD) by musculoskeletal ultrasound before and 48 hours after the last treatment session in each group. A matched healthy group (18 subjects) was examined to compare supraspinatus tendon thickness, and AHD with those with supraspinatus tendon partial thickness tear.

Results: Results: There was a significant difference between the healthy group and the HPL and sham groups before treatment in supraspinatus tendon thickness in the short axis (P=0.035) and long axis (P=0.028). In the HPL group, there was a significant increase in tendon thickness in long axis (P=0.051, ES=0.102), and AHD (P=0.033, ES=0.127). The HPL group also showed a significant reduction in pain based on VAS criteria (pain at night (P=0.002, ES=0.259), at rest (P=0.007, ES=0.196) and with activity (P=0.012, ES=0.254)). The results of the sham group showed no significant improvement in any of the measured parameters.

Conclusion: Conclusion: The results of this study show that HPL combined with exercise therapy effectively reduces pain and improves sonographic findings in people with isolated supraspinatus tendon partial tear compared to exercise therapy alone.

Keywords: Suraspinatus , High-power laser, Sonography

Assessing the effectiveness of stretching exercises versus compression exercises to the improvement of balance among patients with deep gluteal syndrome: A randomized before and after trial

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Introduction: The symptoms of deep gluteal syndrome as a musculoskeletal disorder are related to the hip joint position and may affect postural balance. Different rehabilitation interventions have been investigated and implemented to address these patients' balance impairment needs. This study aimed to investigate the effects of stretching and compression exercises on balance in patients with deep gluteal syndrome.t5r

Materials and Methods: Forty-five patients with deep gluteal syndrome underwent randomization and completed the trial, were randomly divided into treatment groups (stretching and compression exercises) and a control group, with 15 patients in each group. The control group received conventional rehabilitation including heat therapy (Hot Pack) and transcutaneous electrical nerve stimulation (TENS), while the treatment groups received stretching and compression exercises for three sets of two minutes of exercise with two minutes of rest in between.

Before and after four weeks of treatment, patients were assessed using the Y-balance test (YBT) and were taken for ANT, PM, and PL reach directions. The six normalized values (direct reach distance divided by leg length and multiplied by 100) for right and left in all three reach directions were averaged.

The outcome measure was analyzed using SPSS.26 software, and paired t-tests and ANCOVA were used.

Results: Results: Based on the ANCOVA analysis (between-group comparison), the mean balance score in the three directions (posteromedial, posterolateral, and anterior) was not statistically significant between the three groups (All P-values > 0.05). However, within-group comparisons showed a statistically significant difference in the three directions for the control group (Mean difference ranged over: 9.20 to 13.02; 95% CI: 3.15 to 21.80; P-value of paired t-test< 0.001), and the compression group (Mean difference ranged over: 7.50 to 10.53; 95% CI: 2.83 to 15.75; P-value of paired t-test< 0.001). While in the stretching group, only the mean of right anterior and Posterolateral directions showed a significant increase (mean difference ranged over: 4.73 to 7.29; 95% CI: 0.34 to 14.46; P-value of paired t-test< 0.001).

Conclusion: Conclusion: The findings of this study suggest that there is no statistically significant difference between stretching and compression exercise interventions. Considering that only the within-group effects in some balance directions were significant, it is recommended that these interventions be included alongside conventional physiotherapy in the rehabilitation programs of patients with deep gluteal syndrome.

Keywords: Deep gluteal syndrome, Balance, Rehabilitation

The Role of Physiotherapy in Wound Management and Therapeutic Devices Utilized

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Introduction: Chronic wounds, which fail to heal in a timely manner, present significant challenges in healthcare. Physiotherapy plays a critical role in managing these wounds through the use of advanced therapeutic devices that enhance healing, alleviate pain, and improve patient outcomes.

This article explores key devices used in chronic wound management, focusing on their mechanisms, applications, and clinical benefits

t5r

Materials and Methods: Negative Pressure Wound Therapy (NPWT) employs controlled suction to remove exudate, reduce edema, and promote tissue formation. Electrical Stimulation (ES) enhances cellular activity and accelerates wound closure through targeted electrical currents. Ultrasound Therapy (US) stimulates tissue repair and reduces pain, while Hyperbaric Oxygen Therapy (HBOT) delivers 100% oxygen at elevated pressures to expedite healing in ischemic wounds. Laser Therapy utilizes focused light energy to stimulate cellular activity, increase blood flow, and reduce inflammation, thereby promoting faster wound healing. Ozone Therapy introduces ozone gas with potent antimicrobial, anti-inflammatory, and oxygenating properties, creating an optimal environment for wound healing. By improving local oxygenation, reducing bacterial load, and modulating the immune response, ozone therapy significantly accelerates wound repair and reduces healing time. Dielectric Barrier Discharge (DBD) Plasma Therapy utilizes ionized gas to promote wound sterilization, cell proliferation, and tissue regeneration.

Results: These devices, integrated into a comprehensive physiotherapy regimen, significantly improve the healing process and patient quality of life.

Conclusion: The seminar will present clinical case studies, discuss emerging trends, and explore future directions in chronic wound management, emphasizing the importance of multidisciplinary approaches and continuous innovation in therapeutic techniques.

Keywords: wound physiotherapy

Sensory and motor rehabilitation of patient with lower limb paraplegia following a fall: a case report

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Introduction: Paraplegia is a spinal cord injury below the first level of the thoracic vertebra (T1), which usually leads to muscle weakness, and sensory changes in the trunk and lower limbs, and incontinence of urine and feces. These conditions can be the result of physical injuries, neurological diseases, or infections and rehabilitation can greatly help these people return to their activities of daily living.

This study reports the course of physiotherapy treatments for a paraplegic patient with impaired sensation and movement in the lower limbs and urinary and fecal incontinence and the results of that.t5r

Materials and Methods: The treatment was performed on a 28-year-old man who had paraplegic lower limbs and urinary and fecal incontinence following a fracture of the 3rd and 4th lumbar vertebrae and fixation surgery. The treatment started with 10 sessions of electrical stimulation, ultrasound, low-power laser in the lower back and lower limbs, and faradic currents and Interrupted direct current (IDC) in the calf, quadriceps, and hip adductors. During 50 sessions and up to 4 months after the first visit, and after starting contraction of many muscles and limiting the numbness to the area below the knee, a stationary bike, and weight lifting for sitting and standing were added to the treatment protocol. then respectively during the next 20 sessions, to stimulate the sensation, electroacupuncture and IDC every other day were added to the previous treatments in the upper 1/3 and lower 1/3 of the front of the legs and in the next 10 sessions in the back of the legs for muscle contraction and after Until the 125th session, the middle of the back of the thigh, against to sensation, and after about 8 months, plantarflexion of the legs started. From the 126th session, along with exercise therapy and electrotherapy, electroacupuncture of peroneal and tibialis-anterior muscles and acupuncture points GB31+GB30 were performed for 10 sessions of 20 minutes, and from the 136th session walking with a walker started. Until the end of the 12th month, faradic stimulation of the posterior and FES for anterior muscles of the thigh, walking with a walker, and semi-squat to the wall with a walker were added to the interventions.

Results:

Conclusion: respectively to the effect of physiotherapy in the return of paraplegic patients to activities of daily life, the use of electroacupuncture and IDC currents may be effective in reducing the sensory disturbance of these patients and improving their quality of life.

Keywords: paraplegia, sensory impairments, electroacupuncture, IDC

Parsonage-Turner syndrome, affecting suprascapular nerve and especially to infraspinatus muscles after COVID-19 vaccination in a professional wrestler, a case report and literature review of causes and treatments

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Introduction: Acute peripheral neuropathy, also known as Parsonage-Turner syndrome or neuralgic amyotrophy, mostly affects the upper brachial plexus trunks, which include the shoulder girdle. It is typically accompanied by abrupt, intense pain, weakness, and sensory disruption. The etiology and causes of this disease are still unknown because of its low prevalence, however viral reactions-induced inflammation is one of its frequent causes.

Case presentation: Here, we introduce a professional wrestler patient who was diagnosed with PTS after vaccination and was treated, and we review some articles in this field.

t5r

Materials and Methods: Case description: A 24-year-old right-handed professional wrestler with no medical history suddenly developed severe left shoulder pain during sleep two weeks after Sinopharm [Vero Cell]-inactivated COVID-19 vaccine 2 st dose. He experienced severe left shoulder pain and weakness after it for one week, which continued with less intensity after months. After two months, the infraspinatus muscle started to atrophy, and at the time of initial presentation to us, about three months from onset (Fig. 1), all active and passive ROMs were full, and the patient's pain had largely resolved, but muscle strength decreased in abduction and more in external rotation movements. He had no sensory change in his upper extremity. The subject complained of increasing weakness during the competition. His shoulder MRI was normal with no findings of tendinopathy, ganglion cyst, or rotator cuff tear. The first EMG demonstrated a left suprascapular nerve lesion with fair reinnervation in supraspinatus and no reinnervation in infraspinatus (Lt supraspinatus: ↓ Amplitude, Polyphasic: 2+, Partial motor unit, and Lt infraspinatus: ↑Insertional activity, Fibrillation: 6/10, Positive Sharp Wave: 6/10, Amplitude: absent, no motor unit.).

Results: According to the table. With vaccination and the corona virus, PTS became more common. As a result, while treating both acute and severe shoulder pain, it appears to be regarded as a crucial differential diagnosis. The therapist can make an accurate diagnosis in this case with the aid of a clinical examination, MRI, and EMG (52). Given the lack of positive findings for tendinopathy, other soft tissue damage, entrapment

or nerve damage, and other relevant instances in our case's MRI and EMG results, PTS is the most plausible diagnosis, which may have resulted from an inflammatory response to the vaccine injection. (17). Though the small number of patients has hampered these investigations, it appears that more research is needed to understand the pathophysiology of this disease.

Conclusion: According to the research listed in the table, it appears that using corticosteroids during the acute phase is beneficial in reducing the pain and inflammation brought on by lesions after thorough inspection and the rollout of more lesions with comparable symptoms. It is also necessary for the patient to be under the supervision of a physiotherapist until complete recovery and to maintain muscles and daily function with the help of therapeutic exercise and electrical stimulation until complete nerve regeneration. What happened to our subject was pleasant, and he returned to his daily and professional life with a full recovery.

Keywords: Parsonage-Turner syndrome/ brachial-plexus-neuritis, suprascapular-nerve-lesion, COVID-19

Exercise: A Review of Mechanism and Dosage as an Antidepressant

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Introduction: Background: Depression and anxiety are common aspects of modern life, while relaxation and emotional relief following exercise are universal experiences. However, which type of exercise is most effective in alleviating the adverse effects of depression and anxiety?

Objectives: The main questions of this study were, 'Which exercise regimens evidently improve the symptoms of depression and anxiety regardless of formal clinical diagnosis' and 'What are the underlying mechanisms for these effects?'

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Materials and Methods: Methods: This review gathered the most recent evidence from international databases, including Scopus, PEDro, ISI Web of Science, Cochrane Library, and PubMed. All systematic reviews published in English since January 1, 2017, were included if the effects of the exercise could be easily extracted.

Results: Result: Among the 3,890 articles retrieved according to the PICO criteria, 78 systematic reviews were included. The physiological effects of exercise on depression on general depression, depression secondary to various health issues, and depression caused by home quarantine were investigated across different ages and stages of life. Along with the global favor towards regular physical exercise as an anti-anxiety and anti-depressant with no clinically significant side effects, the methodology of most articles in the field scientifically limits the generalizability of the findings and the ability to draw comprehensive conclusion

Conclusion: Conclusion: The positive effects of exercise, particularly aerobic regimens, on depression and anxiety are mediated by several physiological, neurobiological, and behavioral mechanisms. Most systematic reviews strongly recommend further studies with larger sample sizes, improved adherence to standard research methodologies, and longer intervention and follow-up periods.

Keywords: Exercise; Physical Activity; Depression; Anxiety.

Anterior cruciate ligament-Return to Sport after Injury scale (ACL-RSI): reliability and validity of the Persian-version

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Introduction: Background: The ACL-Return to Sport after Injury scale (ACL-RSI) is used to measure athletes' psychological readiness in terms of their emotions, confidence in performance, and risk appraisal with respect to return to sport after ACL reconstruction.

Objective: To translate and cross-culturally adapt the ACL-RSI to the Persian version and evaluate the reliability and validity of this scale in patients with ACL reconstruction.t5r

Materials and Methods: Study design: Clinical measurement study (psychometric analysis).

Methods: In order to assess test-retest reliability, 100 participants were asked to complete the Persian version of the ACL-RSI twice with a 7-10 days interval. In the first assessment, the patients were also filled Injury-Psychological Readiness to Return to Sport (I-PRRS) Questionnaire, Tampa scale of Kinesiophobia (TSK), International Knee Documentation Committee (IKDC) and Knee Injury and Osteoarthritis Outcome Score (KOOS). Internal consistency [Cronbach's alpha (α)], test–retest reliability [Intraclass Correlation Coefficients (ICC)], measurement error [Standard Error of Measurement (SEM) and Minimum Detectable Change (MDC)], and construct validity (Pearson's r) were determined.

Results: Results: Our results showed good internal consistency (Cronbach's alpha=0.94) and excellent test-retest reliability [ICC=0.90(0.85-0.93)]. SEM and MDC were 4.64 and 12.85, respectively. No significant bias was observed between test and retest. In addition, based on the results of correlation analysis, all hypotheses of this study were confirmed. The Persian version of ACL-RSI had a strong correlation with I-PPR ($p<0.001$, $r=0.76$) and TKS ($p<0.001$, $r=-0.68$). Also, a moderate correlation was observed between the Persian version of ACL-RSI and IKDC ($p<0.001$, $r=0.44$) and between this version of ACL-RSI and the subscales of KOOS ($p<0.001$, $r=30-0.55$).

Conclusion: Conclusion: Given its acceptable reliability and validity, the Persian version of the ACL-RSI seems to be suitable tool for evaluating psychological readiness to return to sport after ACL reconstruction.

Keywords: ACL-Reconstruction, Psychometric-properties, Return-to-sport, Psychological readiness

the Effect of Virtual Reality based Rehabilitation after Total Knee Arthroplasty Surgery on Pain, Function and Balance

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Introduction: Physiotherapy and therapeutic exercises after knee replacement surgery are necessary to return to the optimal level of muscle strength, reduce pain, prevent damage to the prosthesis, return to daily activities and maintain balance of patients. However, the return to normal functioning, including postoperative balance is still not satisfactory enough, and there is no codified and comprehensive protocol regarding the exercise therapy of these patients, especially in the acute phase. Recent technological advances have led to the creation of new therapeutic exercises and speeding up of recovery in these patients so that it is possible to create visual feedbacks during the exercise to evaluate and treat patients accordingly. the present study compared the effect of adding virtual reality-based exercise therapy to common physiotherapy on the level of function, pain and balance in the acute phase after surgery by Kinect system and wii balance board in these patients.t5r

Materials and Methods: Taking into account the inclusion and exclusion criteria, 40 qualified volunteers participated in this study from among the patients who recently underwent knee replacement surgery. they randomly assigned to one of two groups. The control group received common physiotherapy treatment after knee replacement surgery, and the other group also received exercise therapy through the virtual reality system. The VAS index used to measure pain, the WOMAC questionnaire used to assess the level of performance, and the wii balance board used to test balance in these patients. Primary and secondary outcomes are evaluated prior to the study, at the end of the treatment period and after a one-month follow-up. The Shapiro-Wilk test used to evaluate the data distribution. Data analysis carried out using repeated measure ANOVA test in the case of normal data.

Results: The statistical analysis showed that VR rehabilitation decreased pain and disability more than control group. static balance parameters did not showed meaningful changes in both groups. but intervention group determined changes in favor of improvement of dynamic balance.

Conclusion: VR could be used after Total knee arthroplasty and enhance the merits of rehabilitation treatment goals.

Keywords: arthroplasty VR WOMAC TKA

The effect of four weeks of stretching vs strengthening exercises on improvement of balance in patients with tightened hamstring muscles: A three-arm, single-blind, randomized controlled trial

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Introduction: Having a shortness of hamstrings can cause low back pain and these patients compared with healthy subjects have suffered instability in postural control. Therefore, the purpose of this research was to investigate the effect of stretching and strengthening exercises on balance improvement of low back pain patients with tightened hamstring muscles.t5r

Materials and Methods: In this single-blind controlled clinical trial, forty-five patients (31 men and 14 women; mean age 38.80 ± 11.14) with tightened hamstring muscles were purposefully identified by the Active Knee Extension test and were randomly assigned to control or experimental groups (15 patients in each group). Dynamic balance status was evaluated with the Y-balance test (YBT). All patients received a standardized treatment protocol consisting of 15 min of heat therapy (Hot Pack) and 15 min of transcutaneous electrical nerve stimulation (TENS) applied to the low back. In addition, in the stretching exercises group, while the participants were in a lying position with the knee fully extended, a passive stretch was applied on the hamstring by a spring. In the strengthening exercises group, participants were seated on a chair with their thighs being supported on a surface which kept the hip joint in 120 of flexion as well as the knee joint in full extension. Data were analyzed by means of 2-time points (pre vs. post) × 3 groups (two different types of exercises vs. control) repeated measures ANOVA followed by post hoc comparison at the significance level of ($P < 0.05$) with SPSS version 26.

Results: After 12 sessions (three times per week) of intervention, there was no difference in the change in mean of Y balance scores between groups (P-value > 0.05). In the other words the main effect of the group and the group-by-time interaction were not significant (P-value > 0.05). On the other hand, there was a significant difference in the change in mean of Y balance scores within groups (Mean difference (95% CI) in the stretching, strengthening exercises and control ranged over= 8.13 to 6.07 (4.65 to 11.60); 7.33 to 7.74 (2.45 to 12.21) and 6.69 to 6.92 (1.21 to 12.16), respectively (All P-values<0.001).

Conclusion: Neither static stretching nor strengthening exercise for hamstring muscle tightness significantly affected balance scores. Furthermore, more research is needed in the future to prove this clinical purpose on the improvement of balance in patients with tightened hamstring muscles.

Keywords: Stretching exercise Strengthening exercise Balance

Movement Pathology of Forward Head Posture and its Rehabilitation Interventions: A systematic review of trials

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Introduction: Forward Head Posture (FHP) is one of the common postural disorders that affects the entire spine and body joints. The aim of the present study is to review the movement pathology of FHP and its rehabilitation interventions.t5r

Materials and Methods: This systematic review was conducted based on PRISMA guidelines. PubMed, Cochrane and PEDro databases were searched through July 2024 using the MeSH terms of 'Forward Head Posture' OR 'Craniovertebral alignment' AND 'Physiotherapy' OR 'Rehabilitation'. The inclusion criteria were clinical trials that has been published in English and has investigated the effectiveness of different forms of rehabilitation interventions on forward head posture. Editorials, letters, and clinical guidelines, as well as duplicate studies were excluded. Quality assessment was performed using PEDro scale, by two independent reviewers. Out of 126 records, 74 trials were included in the quantitative synthesis that meet all the criteria with the number of patients being 6214. Included trials were not similar enough clinically and methodologically to pool in meta-analysis, thus a quantitative synthesis was undertaken.

Results: Investigations showed that FHP is associated with various disorders and diseases, such as neck tension headaches, musculoskeletal pains in different shoulder areas and spine as well as lung function and temporomandibular joint. Effective rehabilitation interventions in craniocervical angle correction, increasing muscle activity and reducing pain in affected people including manual therapy, Stabilizing exercise, spinal traction, corrective exercise in addition with ultrasound and infrared, dry needling and myofacial trigger point pressure, cervical sensory feedback, upper cervical/thoracic spine mobilization, resistance program, kinesiotaping, release, corrective garments such as corrective posture shirts, spine mobility exercise, muscle energy techniques, stretching and strengthening exercises and isometric trainings.

Conclusion: Non-pharmacological interventions and rehabilitation are effective, inexpensive and accessible to correct postural disorders such as FHP. Correcting this disorder is associated with improving the function and alignment of other parts of the spine and upper limbs. Considering that the use of orthotic interventions such as corrective garments and braces causes muscle weakness in the long term, therapeutic exercise interventions should be used as the main intervention.

Keywords: Forward Head Posture,Craniovertebral alignment,Rehabilitation

The study of TPs treatment and clinical comparison between different treatment methods including Dry needling, HP Laser, Diathermy, Exercise, FDM, Lidocaine Injection, Stretchy + ... Manual Therapy (Manipulation – Stretching) – Shockwave

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Introduction: This review of different treatment methods is explained in terms of how to describe the pathology of the disease, how the desired treatment affects anatomically and physiologically, and its clinical results. Then the correctness or incorrectness of each of these methods will be evaluated and explained that what is the intellectual basis of each of these treatments and is this treatment effective theoretically and scientifically or not?

In this way, all treatment methods are compared by using the clinical findings of physiology and anatomy t5r

Materials and Methods: Investigating the nature and different types of Trigger Points

Examining anatomical and pathological changes of TP from the point of view of different treatment methods

Investigating the effectiveness of different TP treatment methods

Examining the superiority of different treatment methods of TP from a clinical point of view

Examining TP's different treatment methods

Examining the side effects of various treatment methods from the physiological and anatomical point of view

Results: These questions are answered in this article

1. What is TP from different points of view?
2. How many TPs are there?
3. Is the description of each of these methods scientific and valid or not?
4. What is the effect of each of these treatment methods?
5. Is the effectiveness (of these treatment methods) scientific and valid or not?
6. In comparison between these methods, which treatment is better clinically and qualitatively?
7. What are the side effects of each of these treatments?

Conclusion: In this article, we present different treatment perspectives. Then we will proceed to the physiological, pathological, anatomical evaluation and then we will examine and conclude the effectiveness of each of them from a clinical and physiological point of view.

After these descriptions, the readers of this article will decide which method will be more effective and better.

Keywords: Trigger point-Dry neddling-HP Laser-Fascial distortion

The role of physiotherapy modalities in reducing weight loss and local fat: A narrative review

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Introduction: Obesity and overweight rates have increased in recent decades among different ages. Excess fat accumulation increases risk for adverse health outcomes. Individuals with obesity and overweight have an elevated risk of cardiovascular and metabolic diseases, hypertension, musculoskeletal, diabetes mellitus type 2 and cancer. Several different treatment methods are currently used to reduce weight and local fat deposition include changing life style, using proper nutrition, exercises and physical activity, physiotherapy modalities and surgery. Todays, the use of physiotherapy modalities is growing and it becomes popular in the world. Therefore, this review was aimed to investigate the effects of physiotherapy modalities on weight loss and local fat reduction.t5r

Materials and Methods: An electronic search was performed on Scholar Google, Scopus, PubMed, Science direct and Cochrane library search engines from 2010 to 2024 and studies that evaluates the effectiveness of physiotherapy modalities on weight loss in individuals with overweight and obesity were selected. The keywords of obesity, overweight, neuromuscular electrical stimulation and ultrasound were used for the search.

Results: Using keywords and considering the inclusion and exclusion criteria, from 21500 articles 9 articles that were most relevant to the subject of this article were reviewed.

Conclusion: The results of these studies showed that non thermal pulsed ultrasound appears to be a noninvasive effective treatment to decrease e local fat deposition in abdominal and thigh areas. Moreover, electrical muscle stimulation and the transcutaneous electrical nerve stimulation could decrease waist circumference and waist-to-thigh ratio. Interferential therapy could stimulate a large number of muscle fibers for greater muscular work and increasing tissue metabolism. In addition, noninvasive radiofrequency device was effective in reducing abdominal circumference and subcutaneous fat. Moreover, shockwaves could improve cellulite and localized fat.

Keywords: Obesity, overweight, physiotherapy modality

Blood Flow Restriction (BFR) Training Compared with Electrotherapy and Exercise Therapy in Injured Athletes: A Literature Review

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Introduction: Introduction

Injuries are an inherent risk in sports, often leading to significant downtime and affecting athletes' performance and career longevity. Effective rehabilitation is crucial for a swift and complete recovery, and various methods have been developed to address this need. Blood Flow Restriction (BFR) training, electrotherapy, and exercise therapy are three widely used techniques in the rehabilitation of injured athletes. This review aims to critically analyze and compare the efficacy of these methods based on current scientific literature, providing insights into their relative advantages and applications.t5r

Materials and Methods: A systematic literature review was conducted using databases such as PubMed, Web of Science, and Scopus. Keywords included "Blood Flow Restriction training," "electrotherapy," "exercise therapy," "rehabilitation," and "injured athletes." Inclusion criteria were studies involving injured athletes, published in peer-reviewed journals, and focusing on outcomes such as muscle strength, hypertrophy, functional recovery, and pain management. A total of 25 studies met these criteria and were included in the review.

Results: The findings indicate that BFR training offers comparable or superior benefits in many cases, particularly in muscle strength and hypertrophy, while electrotherapy and exercise therapy also play critical roles in comprehensive rehabilitation programs. These insights could guide clinicians and sports professionals in optimizing rehabilitation strategies for injured athletes.

Conclusion: Conclusion

Blood Flow Restriction (BFR) training, electrotherapy, and exercise therapy each offer unique benefits in the rehabilitation of injured athletes. BFR training is particularly effective for muscle strength and hypertrophy, electrotherapy excels in pain management, and exercise therapy provides comprehensive functional recovery. Integrating these methods into individualized rehabilitation programs can optimize recovery outcomes, enabling athletes to return to their sport quickly and safely. Future research and technological advancements will further enhance the efficacy and application of these rehabilitation techniques.

Keywords: BFR, Electrotherapy, Exercise Therapy, Athletes

The Effect of Knee Joint Muscles Deep Dry Needling on Pain and Function in Patients After Total Knee Arthroplasty.

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Introduction: Osteoarthritis is one of the most common knee joint diseases. It is a multifactorial, inflammatory, and destructive disorder of the joint that involves the synovial tissues and joint cartilage and causes permanent pain, functional limitations, and a decrease in patients' quality of life (QoL). In advanced cases of the disease, total knee arthroplasty is performed to reduce pain and improve the function of the patients. The presence of pain after this surgery is a major concern that reduces the QoL of these people. One of the causes of pain after surgery is extra-articular pain and involvement of the musculoskeletal system, the most common cause of which is pain caused by active trigger points. Dry needling is one way to deactivate trigger points. This study aimed to investigate the effects of dry needling on the pain intensity and function of patients with active trigger points in the muscles around the knee after total knee arthroplasty.t5r

Materials and Methods: This research was a before-and-after clinical trial study. In this study, 49 patients aged 55 to 80 years, with at least 3 months past their total knee arthroplasty and still having pain, were included by an orthopedic specialist after reviewing the inclusion and exclusion criteria. After the first researcher considered the inclusion and exclusion criteria and the presence of active trigger points in the muscles around the knee, including the quadriceps, hamstring, and gastrocsoleus, 27 patients were qualified. The amount of pain in these patients before, one week, and one month, after dry needling was measured and compared based on the linear visual analog scale. Also, the performance of the patients was assessed based on the knee injury and osteoarthritis outcome score questionnaire. This study aimed to investigate the short-term effects of dry needling on pain intensity and function of patients with active trigger points in the muscles around the knee after total knee arthroplasty.

Results: The results of this study show a significant difference ($P<0.001$) between the amount of pain before dry needling (57.2±8.9) and one week after dry needling (10.8±33.6). Also, there is a significant ($P<0.006$) difference between the performance of patients before dry needling (47.5±11.9) and one week after dry needling (42.3±10.6). No significant difference was observed regarding pain and performance between one week and one month after dry needling.

Conclusion: Performing one dry needling session on the active trigger points of the muscles around the knee after total knee arthroplasty reduces pain and improves patients' performance.

Keywords: Dryneedling, Activetriggerpoints, Pain Totalkneearthroplasty

Investigating the Effectiveness of Additional Cognitive Therapy Components on Conventional Physical Therapy Outcomes in Patients with Chronic Low Back Pain: A Systematic Review Study

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Introduction: Chronic low back pain (CLBP) is a multidimensional musculoskeletal condition involving various factors such as cognitive factors. Cognitive factors reflect patients' thoughts about their pain or other aspects of their lives. These may include negative direct and implicit beliefs about LBP, its meaning, and future consequences. There is growing evidence that cognitive factors influence pain processing, perceptions, levels of pain-related distress, and coping responses. In this study, we aimed to investigate the efficacy of additional cognitive therapy elements to conventional physical therapy on CLBP.t5r

Materials and Methods: Eligible randomized controlled trials were selected according to the PRISMA guideline and identified by a comprehensive search of these keywords: cognitive therapy, physical therapy, chronic low back pain, and related MESH terms of each keyword in several databases including PubMed, Ovid, ScienceDirect, ProQuest, Scopus, Embase, Cochrane Library and Google Scholar. Inclusion criteria were articles in English, full-text availability, and relevance to the research objectives. Exclusion criteria were review articles, posters, presentations, and letters to the editor. 803 records were identified through these database searches and 16 full-text articles met the criteria after screening titles and abstracts.

Results: It was observed in all studies, that adding cognitive therapy elements to conventional physical therapy produced a statistically better effect on pain reduction and disability improvement compared to physical therapy alone. Additionally, pain catastrophizing and fear-avoidance beliefs outcomes were also reported in 7 studies and the results revealed that cognitive therapy combined with conventional physical therapy interventions was more effective. Cognitive interventions help patients make sense of their pain and provide a new understanding of it. Moreover, cognitive therapy outlines how contextual factors, negative pain beliefs, and unhelpful emotional and behavioral responses set up a vicious cycle of pain, distress, and disability.

Conclusion: This review discovered that combining cognitive therapy and physical therapy led to greater improvements in outcomes compared with physical therapy alone. These findings have important clinical implications, suggesting that patients with chronic low back pain may experience greater improvements in outcomes when cognitive therapy is provided alongside physical therapy.

Keywords: cognitivetherapy, physicaltherapy, chroniclowbackpain

The Effect of High-Power Laser Therapy in Spine Surgery

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Introduction: Since the effect of laser therapy has been proven in nerve regeneration, this study aimed to evaluate the effect of high-power laser therapy in patients with peripheral nerve injuries resulting from various spinal surgeries.t5r

Materials and Methods: This case study includes four patients with conditions such as cauda equina syndrome, lumbar spine fracture, cervical discopathy with myelopathy, and delayed surgery for lumbar canal stenosis, all presenting with symptoms like balance difficulties and paresis.

All patients were referred to a physical therapy center four weeks after surgery. In addition to routine practices, such as exercise therapy and I.D.C. electrical stimulation, FDA-approved pulsed gallium arsenide laser therapy was administered. This therapy used wavelengths of 605, 808, and 910 nm, a frequency of 5 to 14 kHz, and an average power of 0.5 to 1 watt per square centimeter (10–15 J/cm^2).

The first ten sessions were conducted with one-day intervals, followed by twice-weekly sessions for the next ten sessions, and once-weekly sessions for the final ten sessions.

Results:

Conclusion: It is recommended that the kind of laser therapy described be used in more patients to establish this approach with greater certainty.

Keywords: High-power laser , Spine surgery

The application of spinal manipulation results in alterations in thalamic neural metabolite among patients experiencing nonspecific chronic low back pain

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Introduction: : In the population of individuals diagnosed with chronic nonspecific low back pain (NCLBP), discernable discrepancies in pain perception have been observed. The present study endeavors to assess alterations in left thalamic metabolites in NCLBP patients following spinal manipulation, utilizing proton Magnetic Resonance Spectroscopy (1H-MRS).t5r

Materials and Methods: In the present investigation, a total of 16 individuals diagnosed with non-specific chronic low back pain (NCLBP) and 16 healthy volunteers of normalconstitution (aged between 20-50 years) were recruited. Prior to commencement of therapeutic intervention and at a five-week interval thereafter, assessments were undertaken via employment of the Oswestry Disability Index, Numerical Rating Scale, and 1H-MRS.

Results: Following spinal manipulation, the patients experienced notable reductions in pain and disability ($p<0.05$). The treatment group demonstrated significant increases in N-Acetyl Aspartate, choline, Mio-inositol, and Glx (glutamate and glutamine) in the left thalamus region post-treatment compared to the baseline measures ($p<0.05$). Prior to treatment, N-Acetyl Aspartate, choline, Glx, and myo-inositol levels were significantly lower in the left thalamus of the patients compared to healthy subjects ($p<0.05$). However, no significant differences in terms of metabolites were observed between the healthy control group and the patients after the treatment.

Conclusion: In patients presenting with NCLBP, spinal manipulation has been observed to exert an effect on the brain, thereby inducing changes in thalamic metabolites.

Keywords: Spinal Manipulation, Thalamus, Pain

Ultrasonographic assessment of cross-sectional area of deep neck flexor muscles during a five-stage cranio-cervical flexion test in individuals with chronic neck pain and healthy controls

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Introduction: The objective of this study was to investigate and compare the cross-sectional area (CSA) of deep neck flexor muscles (DNFs) in individuals with chronic non-specific neck pain (CNNP) and healthy controls while performing a five-stage cranio-cervical flexion (CCF) test.t5r

Materials and Methods: Twenty individuals with CNNP and 20 healthy controls voluntarily participated in this case–control study. Cross-sectional area of DNFs was measured using ultrasonography while the participants lay in supine position to perform the CCF test. The five stages of the CCF test were determined by a pressure biofeedback tool. Neck disability index and pain were also assessed. Repeated measures analysis of variance was used to interpret the yielded data.

Results: A significant difference was observed in the CSA of DNFs between individuals with CNNP and healthy controls at the pressure of 24mm (p¼.009) of the CCF test. The CSA of DNFs significantly changed through increasing the CCF test pressure. No significant differences were observed on the right and left-side DNFs, neither in healthy controls, nor in individuals with CNNP.

Conclusion: The CSA changes in individuals with CNNP and healthy controls significantly varied during the CCF test, which may be a reasonable explanation to the muscle weakness and atrophy in individuals.

Keywords: Ultrasonography - craniocervical flexion

Comparison of cognition elements and dynamic gait score in faller and non-faller elderly women

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Introduction: Now days medicine has caused life expectancy increase and in older age falling and resulting injuries increasingly have become a medical concern. This study aimed to investigate the relation between cognition elements mainly executive function and concentration with activities-specific balance confidence scale (ABC-Q) and dynamic gait index (DGI).t5r

Materials and Methods: 68 volunteered eligible women, grouped into fallers (n=31, age= 65.08) and non-fallers (n=37, age= 64.03). Subject's state of cognition assessed using MoCA questionnaire, with 8 items. For the purpose of this study our focus was on executive function and concentration. The level of fear of falling measured with the falls efficacy scale (FES) questionnaire. The ABC questionnaire to measure amount of their confidence in balance during daily activities fill out with help of examiner. The DGI test performed to assess the likelihood of falling in the older adults.

Results: The results showed a significant decrease in the executive function (0.036), ABC score (0.047), and DGI score (0.002), in the faller group compared the non-fallers. A positive correlation was seen between the executive function and DGI ($r=0.477$, $p<0.001$), but there was no significant correlation with ABC-Q score.

Conclusion: Compared with non-faller elderly women, faller elderly women exhibit reduced cognition specifically in executive function correlating with reduced DGI score. On the other hand, the weaker correlation with ABC-Q questionnaire is interpretative of the faller older women not being aware of their new balance status and abilities.

Keywords: executive function, DGI, MoCA, fallers

Effectiveness of Exercise Therapy, Manual Therapy, Manipulation, and Dry Needling on Pain Intensity and Functional Disability in Patients with Migraine Headache: A Systematic Review of Randomized Controlled Trials

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Introduction: Headaches are the common health complaints among the general population. The International Headache Society (IHS) has divided headache into primary and secondary. The primary migraine headache is a disorder characterized by recurrent headaches that are moderate to severe. The main objective of this study was to evaluate published randomized controlled trials conducted on the effectiveness of exercise therapy, manual therapy, manipulation, and dry needling on pain intensity and functional disability in patients with migraine headache.t5r

Materials and Methods: A literature review of different electronic databases including PubMed/Medline, Scopus, Web of Science, Science Direct, Google Scholar, and Cochrane Library was conducted including articles from 1994 to January 2022. Primary outcome measures were pain intensity and functional disability, and the secondary outcomes were headache parameters, cervical range of motion, pressure pain threshold, quality of life, and psychological parameters. This systematic review was registered on PROSPERO (International Prospective Register of Systematic Reviews, http://www.crd.york.ac.uk/PROSPERO/; #CRD42020179250) on July 5, 2020.

Results: From a total of 663 relevant articles, 172 duplicate articles were removed. Of the remaining 491 articles, 452 articles were excluded based on the titles and abstracts for eligibility criteria. Finally, 24 studies were included for full review. The PEDro score of these studies ranged from 5 to 8. Nine studies had moderate quality, and 15 studies had good quality.

Conclusion: The results of this systematic review indicated that physiotherapy had no side effects and could be beneficial for the reduction of most symptoms in the migraine headache. Furthermore, patients with migraine headache receiving exercise therapy, manual therapy, manipulation, and dry needling showed more favorable outcomes than patients receiving standard treatment or a placebo. Exercise, manual therapy, manipulation, and dry needling reduced headache frequency and intensity and improved quality of life.

Keywords: Migraine, Physical therapy, Systematic Review

Local vibration of the pronouns longus muscle improves static and dynamic balance control in individuals with chronic ankle instability

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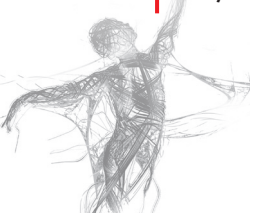
Introduction: : Impaired ankle proprioception is a well-documented contributing factor for balance disturbances in individuals with chronic ankle instability (CAI). Local muscle vibration (LMV) is considered as a powerful mechanical stimulation to activate the proprioceptive sensory system. The aim of this study was to assess the immediate effects of a single session of LMV on static and dynamic balance control in individuals with and without CAI.t5r

Materials and Methods: Twenty-six individuals with CAI and 26 healthy controls were enrolled in this quasi-experimental study. Static and dynamic balance assessments were performed before and immediately after applying LV to the pronouns longus muscle. Static balance was assessed in single-leg standing on a force platform with eyes open and eyes closed. Dynamic balance was also evaluated using modified star excursion balance test (MSEBT). For each center of pressure variable, a separate $2 \times 2 \times 2$ mixed model analysis of variance (ANOVA) was performed. The between-group factor was group (CAI, healthy controls) and the within-group factors were time (before and after LMV) and visual conditions (eyes open and eyes close). In addition, to determine the effects of group and time on MSEBT variables, a two-way mixed model ANOVA, with group (CAI, healthy controls) as between-group factor and time (before and after LMV) as within-group factor was performed.

Results: Statistical analyses showed a significant decrease in mean total velocity and displacement in antero-posterior direction from before to after LMV in eyes open condition for both individuals with CAI ($p = 0.025$, $p = 0.041$, respectively) and healthy controls ($p = 0.001$, $p = 0.003$, respectively). Similar results were observed in eyes closed condition for both individuals with CAI ($p < 0.001$, $p < 0.001$, respectively) and healthy controls ($p = 0.040$, $p = 0.014$, respectively). The results also showed increased reach distances in anterior ($p < 0.001$), posteromedial ($p < 0.001$), and posterolateral directions ($p < 0.001$) in all participants after LMV.

Conclusion: The findings of the present study indicated that a single session of LV applied to the PL muscle immediately improved static and dynamic balance control in individuals with CAI. Specifically, individuals with CAI experienced greater improvements of postural sway from before to after LMV in eyes closed condition. From a clinical point of view, LMV may be a useful tool in the rehabilitation of static and dynamic balance deficits in individuals with CAI.

Keywords: Ankle instability Balance Local vibration



comparison of neurocognitive domains in athletes with anterior cruciate ligament reconstruction based on the return to sport criteria

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Introduction: Only 55% of anterior cruciate ligament-reconstructed (ACLR) athletes return to competitive sports. Importantly, 23-29% of young athletes who fulfill standard clinical return to sport (RTS) criteria are at elevated risk for sustaining a second ACL injury. This brings into question the usefulness of current return to sport (RTS) criteria. High cognitive demand of sport environment clarifies the value of incorporating neurocognitive tests when making decisions regarding the time of RTS. This preliminary study aimed to compare the neurocognitive functions between healthy controls and ACLR male athletes who passed or failed RTS criteria.t5r

Materials and Methods: Forty-five male football players, including 15 ACLR who passed RTS criteria, 15 ACLR who did not pass, and 15 healthy controls participated in this cross-sectional study. The Cambridge Neuropsychological Test Automated Battery was used to measure a battery of neurocognitive tasks, including speed of response, sustained attention, working memory, cognitive flexibility, and response inhibition. One-way analysis of variance (ANOVA) and Tukey's post-hoc tests were used to determine the differences in neurocognitive variables between the groups.

Results: The results revealed that compared with both the ACLR-passed and healthy groups, the ACLR-failed group showed greater values of 5-choice movement time ($P = .02$, $P = .01$, respectively) but lower values of stop signal reaction time ($P = .03$, $P = .001$, respectively) and proportion of successful stops variables ($P = .02$). In addition, compared with the healthy group, both the ACLR-failed and ACLR-passed groups indicated greater values in between errors ($P < .001$, $P = .008$, respectively) and reaction latency variables ($P = .002$, $P = .01$, respectively) but lower values of A' ($P < .001$, $P = .007$, respectively), probability of hit ($P < .001$, $P = .03$, respectively), and percent correct trials variables ($P = .006$, $P = .02$, respectively).

Conclusion: Our findings indicated deficits in neurocognitive functions in ACLR male athletes. In addition, poor performance in sustained attention, working memory, and cognitive flexibility measures observed in the ACLR-passed group highlighted the necessity for using a multimodal approach via implementation of neurocognitive measures in conjunction with the functional and muscular assessments when making RTS decisions.

Keywords: ACL Return to sport Cognition

Improvement of Non-Specific Low Back Pain Through Dynamic Neuromuscular Stabilization Exercises: A Case Report

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Introduction: Non-specific low back pain is defined as low back pain not attributable to a recognizable, known specific pathology (eg, infection, tumor, osteoporosis, lumbar spine fracture, structural deformity, inflammatory disorder, radicular syndrome, or cauda equina syndrome). Non-specific low back pain is usually categorized into 3 subtypes: acute, sub-acute, and chronic low back pain. A chronic non-specific low back pain is a low back pain for 12 weeks or more. Dynamic Neuromuscular Stabilization (DNS) exercises are a technique to restore proper neuromuscular function. Their effectiveness has been demonstrated in improving performance in individuals with sports-related disorders, and patients with multiple sclerosis, and in alleviating pain in certain types of low back pain. This report documents the effects of a DNS exercise regimen on a 40-year-old male patient with chronic NSLBP, demonstrating notable improvements within two weeks.t5r

Materials and Methods: The patient, a 40-year-old man, had been suffering from NSLBP for over five years. The pain, described as a constant dull ache with occasional sharp episodes, was exacerbated by prolonged sitting and standing. The initial pain was rated at 6/10 on the Visual Analog Scale (VAS), and his Oswestry Disability Index (ODI) score was 38%, indicating moderate disability. A two-week DNS exercise program was introduced, with sessions occurring five times per week. The exercises aimed to improve core stability, posture, and functional movement patterns.

Intervention Protocol:

Week 1: Introduction and Basic DNS Exercises

- Days 1-2: Education on diaphragmatic breathing and core activation.
- Days 3-5: Basic supine and prone exercises targeting deep core muscles, emphasizing form and control.

Week 2: Progression of DNS Exercises

- Days 6-10: Progression to seated and quadruped exercises to further engage core stability and coordination.
- Days 11-14: Incorporation of dynamic movements and gentle resistance exercises to challenge stability and mimic daily activities.

Results: At the end of the two weeks, the patient reported a significant reduction in pain, with his VAS score dropping to 3/10. The ODI score improved to 24%, indicating a shift from moderate to mild disability. The patient noted enhanced ease in performing daily activities and a substantial improvement in sleep quality.

Conclusion: This case report highlights the potential for DNS exercises to provide rapid relief from NSLBP. The structured, focused approach of DNS likely contributed to the swift improvements in pain and function observed in the patient. These findings suggest that DNS can be an effective short-term intervention for low back pain, warranting further investigation and validation in larger studies.

Keywords: DNS, Non-specific low back pain

Effectiveness of Dry Needling with Intramuscular Electrical Stimulation (IES) versus Core Stabilization Exercise (CSE) in Patients Suffered from Chronic Low Back Pain (CLBP)

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Introduction: Chronic low back pain (CLBP) is defined as pain in the lumbosacral area of the spine, of more than 12 weeks' duration. The pain may or may not be referred to other locations, and it usually causes limitations in range of motion (ROM). CLBP is generally considered a result of mechanical causes and not related to an underlying condition such as infection, neoplasm, or fracture. The causes may stem from nociceptive, neuropathic, or psychological processes, or a combination of these. The management includes different approaches including patient education; behavioral treatment; lumbar support; traction; or the use of physical therapy modalities such as massage, superficial heat or cold, exercise, transcutaneous electrical nerve stimulation, and laser therapy. The aim of this study was to compare the effectiveness of dry needling with intramuscular electrical stimulation versus exercise therapy program in patients with CLBP.t5r

Materials and Methods: In total, 13 females (age: 32.62 ± 6.62) were allocated randomly to the dry needling with intramuscular electrical stimulation (DNS, n=6) and exercise therapy groups (EXS, n=7). In the DNS group, dry needling was applied once a week for total 4 weeks. The EXS group performed a core stabilization exercises program under vision of a physiotherapist 3 times a week for total 4 weeks. The outcomes measured were pain level by visual analog scale (VAS), functional disability by both the Roland Disability Questionnaire (RDQ), and the Modified Oswestry Disability Questionnaire (MODQ).

Results: VAS, RDQ, and MODQ results did not show any significant between group differences ($P>0.05$). In EXS group, VAS results did not show significant improve after 4 week treatment in EXS group ($P=.063$), but MODQ and RDQ results demonstrated significant improve ($P<0.05$). In DNS group, RDQ results did not show significant improve after 4-week treatment in EXS group ($P=.093$), but MODQ and VAS results demonstrated significant improve ($P<0.05$).

Conclusion: It seems both treatments are effective in the treatment of CLBP.

Keywords: Dry needling ; Core exercises

The association between low back pain and factors related to life style in adolescents

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Introduction: Low back pain (LBP) is considered as the most prevalent disorders in the world. The purpose of the present study was to investigate the correlation between LBP and factors related to lifestyle in adolescents.t5r

Materials and Methods: In the present case-control study, 80 high school children with a history of LBP and 160 healthy matched children were participated. Some questionnaires including demographic questionnaire, visual analogue scale (VAS) to determine pain intensity, oswestry disability index (ODI) questionnaire to consider the level of disability and the questionnaire related to life style factors were filled by the participants. In order to examine the abdominal muscles size, sonography device with linear probe placed between the iliac crest and 12th rib on the antero-lateral wall of the abdomen was used.

Results: A significant correlation was found among gender, overall physical exercise activity, and weekend variables, as well as among gender, time spent on physical activity, and time spent on homework. A significant correlation was observed between the two groups and the position used for doing homework. There was a significant correlation between the size of the Transverse Abdominous muscle and time spent on physical activity in healthy subjects, as well as time spent on homework in the patient group. There was a significant correlation between the size of the Internal Oblique muscle and time spent on physical activity in healthy subjects, as well as time spent on homework in both the healthy and patient groups. Finally, a significant correlation was found between the size of the External Oblique muscle and time spent on physical activity in healthy subjects, as well as time spent using a computer and time spent on homework in the patient group.

Conclusion: physical activity and bad posture for doing homework and watching TV were considered to be as the most important risk factors for occurring LBP in adolescents

Keywords: life style, adolescent, LBP, sonography

A neglected modality in physiotherapy

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Introduction: iontophoresis is a neglected modality in the physiotherapy field that has received little attention.t5r

Materials and Methods: methods of drug and substances delivery: we know that in order for drugs or substances to enter the body, excluding invasive methods like injections, various methods are used, the most common of which is the entry of drugs through the mouth in various forms such as tablets, capsules, syrups, powders, aerosols, and less common methods include rectal administration, such as suppositories.

Results: Recent years have witnessed a surge in international research on transdermal and trans mucosal drug delivery, encompassing field such as dermatology, cosmetics, rheumatology, ophthalmology, otolaryngology, dentistry, oncology, orthopedic and rehabilitation.

Conclusion: The need to pay attention to the iontophoresis method: despite its potential, iontophoresis remains underutilized in domestic research, particularly within physiotherapy. given its effectiveness in treating a wide range of musculoskeletal conditions, this modality warrants increased attention.

Keywords: iontophoresis,physical therapy,direct current

The Association Between Temporomandibular Disorders and Kinematics of The Sacroiliac Joint: A 3D motion Analysis Study

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Introduction: Temporomandibular disorders (TMD) have been the focus of many studies, but the relationship between TMD and other body segments, such as the pelvis, is still controversial. This study aimed to investigate the relationship between TMD and the kinematics of the sacroiliac joint.t5r

Materials and Methods: Twenty participants with chronic TMD and 20 healthy individuals included in this study. the temporomandibular joint range of motion, pain intensity, TMD severity were documented. The sacroiliac joint three-dimensional kinematics were recorded during a flexion task using a motion analysis system and MATLAB software.

Results: The severity of TMD had a significant effect on pain intensity in the patient group. At the start position (before the forward flexion of the trunk), we found significant differences in the linear and angular position of the sacrum relative to the ilium in the sagittal plane and around the frontal axis on both sides between two groups.

Conclusion: In summary, this study showed that there may be some kinematic changes in the sacroiliac joint of patients with TMD, which was consistent with some previous studies; Therefore, the results of this study support the need to evaluate the pelvic region as part of the clinical evaluation protocol in TMD patients. Although, in many measured variables, no significant correlation was found between TMD and kinematics of the sacroiliac joint.

Keywords: temporomandibular disorders-sacroiliac joint–kinematics

The immediate effect of abdominal muscle massage on pain and range of motion in low back pain patients

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Introduction: Background: Massage therapy is a safe intervention without side effects for reducing pain and increasing the range of motion (ROM). This study investigated the immediate effect of abdominal muscle massage on pain and ROM in low back pain (LBP) patients.t5r

Materials and Methods: Methods: Seventy-four patients with LBP were randomly assigned to the intervention and control groups after meeting the entry criteria. The pain intensity was assessed with a visual analog scale (VAS), and two analog inclinometers were used to measure the lumbar ROM. A session of lumbar muscle massage is administered to the control group, and a session of abdominal muscular massage is administered to the intervention group. Before and after the massage, the pain and ROM are assessed in both groups. The software used is SPSS 25, and the significance level of the tests is 5%.

Results: Results: The findings demonstrated that, similar to low back muscle massage in patients with low back pain, abdominal muscle massage could significantly enhance the range of motion and the degree of pain during forward, backward, and side bending (P = 0.00).

Conclusion: Conclusions: The current study's findings indicate that abdominal massage can immediately reduce LBP pain and increase ROM. Furthermore, improvement following the abdominal massage was the same as following the lower back massage. Our results can give an insight into the application of abdominal massage as part of the LBP treatment program. Although further investigation is warranted.

Keywords: Low Back Pain, Massage

Hip and knee joints moment in the patellofemoral pain syndrome of females during the stance phase of running

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Introduction: Patellofemoral pain syndrome (PFPS) is a common problem in physical active group people. Females anatomy and biomechanics, as well as adaptation with the situation and pain control tendency in musculoskeletal problems may be ended to the knee and other lower extremity joints biomechanical alteration at physical activity or sport performances.t5r

Materials and Methods: In this study, 40 physically active women voluntary participated (n = 22 with PFP; n = 18 Healthy). All PFPS group had symptoms during at least two of the following activities: stair ascent or descent, squatting, prolonged sitting, running, or jumping; worst knee pain level in the previous month was at least 3 in visual analogue pain scale (VAS); and insidious onset of symptoms were lasting ≥6 months. To be included in the control group, participants had no signs or symptoms of PFP or other neurological or musculoskeletal conditions. Six video cameras (Basler-9X00; 200 Hz) recorded three-dimensional kinematics at 200 Hz using a lower limb marker set consisting of 20 retro reflective markers placed on anatomical landmarks and rigid clusters. A force plate (Kistler, Winterthur, Switzerland; 1000 Hz) was used to record ground reaction force data at 1000 Hz, which was synchronized with the kinematic data using the SIMI motion software. A running average speed of 3.0-3.2 m/s was monitored via a Q&Q digital chronometer (Japan). Each participant performed running trials along the length of a 15 m runway. Five successful trials were selected for analysis, and variables were calculated and averaged across the 5 running cycles for each subject.

Results: Subjects from both groups were similar with respect to demographics and activity level. No subject reported noteworthy pain during running test. Average (SD) pain ratings after running were 0.0 (0.0) for the healthy group and 0.3 (0.6) for subjects in the PFPS group. Results from separate independent t tests showed significantly less knee external rotation (P = .002), hip internal (P≤ .001) and external rotation (P = .025) moments for subjects with PFPS. Subjects with PFPS demonstrated similar peak moment values in frontal and sagittal plane in lower limb joints during running (P>0.05).

Conclusion: In conclusion, PFPS group has shown horizontal plane alterations. Also they have less moment that means their low potential for shock absorbing. Also this finding is in close connection with tibial torsion and knee extensor mechanism extra loading on PF articular surface and they are more responsible for controlling motion during stance phase of running in females with PFPS.

Keywords: hip knee moment PFPS running

A Comparative Study of Mobilization and Mobilization with Movement on Pain and Ankle Range of Motion in Inversion Ankle Sprain: A Randomized Clinical Trial

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Introduction: Introduction: Both Maitland and Mulligan mobilization techniques are used to improve ankle range of motion after immobilization. However, their comparative efficacy remains ambiguous. The purpose of the present study was to compare the effects of mobilization and mobilization with movement on pain and ankle range of motion in inversion ankle sprain.t5r

Materials and Methods: Methods: Participants with grade II inversion ankle sprain were randomly and equally assigned to either the Maitland mobilization group or the Mulligan mobilization group. The both groups received treatment every other day over two consecutive weeks. Pain was assessed using the visual analogue scale, and ankle dorsiflexion range was measured using the weight bearing lunge test before and after the intervention.

Results: Results: No significant differences were observed between the two groups regarding pain (p-value=0.297) and ankle range of motion (p-value=0.294) before the intervention. In the both groups, pain significantly decreased (p-value<0.001) and ankle range of motion significantly increased (p-value<0.001) following the intervention. However, the mobilization with movement technique was more effective in alleviating pain (p-value=0.037) and enhancing ankle range of motion (p-value=0.021).

Conclusion: Conclusion: Both techniques significantly increased ankle range of motion and reduced pain in individuals with inversion ankle sprain following immobilization. However, Mulligan mobilization technique was significantly more effective compared to Maitland mobilization technique.

Keywords: Manual-Therapy Ankle-Sprain Range-of-Motion

A Comparison of Acromiohumeral Distance between Normal Craniocervical Posture and Forward Head Posture during Active or Passive Arm Elevation: A Cross-Sectional Study

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Introduction: Introduction: Forward head posture is a common musculoskeletal disorder that may affect the shoulder joint through the interconnected muscles of the head, neck, and shoulder girdle. The present study compared the acromiohumeral distance between individuals with normal craniocervical posture and those with moderate and severe forward head postures during both active and passive arm elevations.t5r

Materials and Methods: Methods: Based on the craniovertebral angle, volunteers were equally assigned among three groups, including group one with normal craniocervical posture, group two with moderate forward head posture, and group three with severe forward head posture. The distance between the humeral head and the acromion process was measured at 10°, 45° and 60° of active and passive arm elevations using an ultrasound machine equipped with a 7.5 MHz linear transducer.

Results: Results: The groups exhibited a significant difference in the acromiohumeral distance at 45° of active arm elevation (p-value=0.041). In a paired comparison of the acromiohumeral distance, there was a significant difference between groups one and three (p-value=0.044). An increase in either active or passive arm elevation angle led to a significant decrease in the acromiohumeral distance (p-value<0.001). Additionally, a significant difference in the acromiohumeral distance was detected between active and passive arm elevations at each arm elevation angle (p-value<0.010).

Conclusion: Conclusion: There was a significant difference in the acromiohumeral distance between severe forward head posture and normal craniocervical posture at 45° of active arm elevation. Additionally, there was a significant difference in the acromiohumeral distance between active and passive arm elevations.

Keywords: Posture Cervical-vertebrae Shoulder-joint Ultrasonography

Mildly Kyphotic Students Had More Shoulder Trigger Points Than Students With Normal Spinal Posture

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Introduction: Objectives: Painful trigger points (PTP) may be caused or exacerbated by many factors, including abnormal spinal posture. This study compares PTP in the shoulder and scapular areas of mildly kyphotic subjects versus subjects with a normal spine among physiotherapy (PT) students enrolled at Shiraz University of Medical Sciences, Shiraz City, Iran. Methods: A total of 60 PT students, 30 with mild kyphosis and 30 with a normal spine, were randomly and voluntarily recruited. The data collection was planned based on the subjects' spinal posture, shoulder and scapular pain levels, and the intensity of pain evoked in response to pressure. The spinal posture was assessed using a flexible ruler, while the trigger points were evaluated as described previously by Travell and Simon. A digital pressure algometer assessed the subjects' pain thresholds, and the pain levels were quantified using a visual analog scale (VAS).t5r

Materials and Methods: Participants selection

This study used the convenience sampling method among PT students of both genders. The sample size consisted of 60 students in the age range of 18 to 25 years.

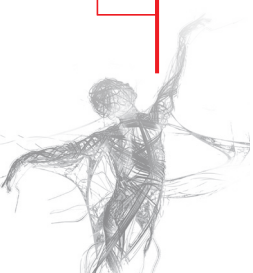
Inclusion criteria Students with a thoracic kyphosis of greater than 40 degrees were assigned to the mild kyphosis group and those with a kyphosis of 20-40 degrees were assigned to the group with normal posture [1].

Exclusion criteria Students with any of the following medical or surgical histories were excluded from the study: 1) A history of surgery on the spine or the upper extremities due to any cause; 2) Neurovascular injuries to the neck and upper extremities; 3) Trigger points caused by any predisposing factor, such as vascular problems, hyperthyroidism, cardiopulmonary diseases, anemia, acute or chronic viral disease, and allergies; 4) Severe kyphosis and gibbous deformity; athletes with shoulder and or neck pain [22, 23].

Study measurements Two of the authors were involved in taking measurements, with a focus on the evaluation of the subjects' kyphosis in degrees and their trigger points in shoulder and scapular muscles, pain, and pressure pain threshold (PPT). The kyphosis assessment was done in degrees, using a flexible ruler, while the trigger points were documented based on the method by Simon et al. [24]. Lastly, the qualitative evaluation of pain was achieved using a visual analog scale (VAS) and the PPT was measured with a digital pressure algometer.

Results: According to Table 1, there were no significant differences between the two groups concerning age, weight, and height. The results of the independent sample ttest indicated significant differences in pain intensity ($P<0.001$) and PPT ($P<0.001$) between the two groups. The results of the Mann-Whitney test showed significant differences in the degrees of kyphosis ($P<0.001$) and latent trigger points ($P=0.02$); however, no

significant differences were detected for active trigger points (P=0.823) between the two groups (Table 2).
Conclusion: This study's results indicate a significantly greater number of trigger points in students with mild thoracic kyphosis than in those with normal spine postures. Consistent with the findings of previous studies, the current study results suggest that kyphotic posture can cause muscle imbalance and contribute to the development and or severity of trigger points pain around the shoulder and scapula areas. Further studies on larger sample sizes are warranted to confirm the association or correlation of mild kyphosis with the presence and development of trigger points in subjects of both genders at different age brackets.
Keywords: kyphosis, triggerpoints, Posture, Shoulder pain



Integrating Artificial Intelligence into Physiotherapy

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Introduction: Physiotherapists, like all healthcare professionals, are at the forefront of a transformative era in professional education, clinical practice, and research due to advancements in Artificial Intelligence (AI). While AI may be perceived as a threat by some, it offers a unique opportunity to elevate physiotherapy practice and revolutionize patient care. AI systems, such as Microsoft's Bio-GPT and Google's Med-PaLM, are increasingly focused on medical databases and datasets, showing immense potential in various healthcare fields. Additionally, tools like ChatGPT have been used to gather and synthesize information, enhancing the research process.t5r

Materials and Methods: A comprehensive literature search was conducted across PubMed and Google Scholar databases to gather relevant information. Key search terms included "Artificial Intelligence", " Physiotherapy" and "Machine Learning in healthcare". The search focused on papers published since 2020. Studies evaluating the performance and application of AI models in clinical settings, particularly in physiotherapy, were prioritized. References from selected articles were also reviewed to identify further relevant studies.

Results: Studies have shown that AI models can produce stable and reliable medical advice tailored to specific cases based on clinical guidelines and expert opinions. AI integration in physiotherapy can enhance data accuracy, promote collaborative efforts, and facilitate the automation of tasks involving data analysis, classification, and prediction. This can lead to improved efficiency and effectiveness in physiotherapy practice, allowing physiotherapists to save time, effort, and costs while treating more patients within a specific timeframe.

Conclusion: AI holds significant potential to transform physiotherapy by improving data accuracy, encouraging collaborative efforts, and automating routine tasks. It is crucial for physiotherapists to embrace AI and ML, learn coding and algorithm development, and actively participate in the development and fine-tuning of AI models to ensure ethical and effective use in clinical, educational, and research settings. By integrating AI into physiotherapy, the profession can remain at the forefront of healthcare, ultimately enhancing patient care and outcomes.

Keywords: Artificial intelligence, physiotherapy, machine learning

Risk factors associated with achilles tendinopathy in non-professional runners with special consideration to ankle biomechanics. A literature review

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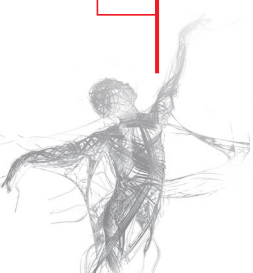
Introduction: Running is gaining increasing popularity among individuals, however, suffering from Achilles tendinopathy is greatly prevalent in runners. Understanding the risk factors can be essential for taking preventative measures. Therefore, the aim of this review was to investigate associated risk factors with achilles tendinopathies in recreational runners.t5r

Materials and Methods: Database searches (PubMed, PEDro, Ovid, google scholar) were conducted using the key words 'running', 'runners', 'injury', 'risk factors', 'tendinopathy', 'achilles tendinopathy', and 'ankle'. English articles published from 2014-2024 were included.

Results: After removal of duplicates, 171 articles were screened. nine studies were included based on the inclusion criteria. The prevalence of Achilles tendinopathy, in runners, was reported from 4.2% in recreational runners to 52% when professional runners were considered, as well. Gender, weekly running distance, Achilles tendinopathy in the previous 12 months were associated with this injury. Biomechanically, longer duration of rearfoot eversion, reduced ankle dorsiflexion range of motion and a pattern of 'medial collapse' was reported to be associated with greater risk of Achilles tendinopathy in runners.

Conclusion: The most predominant risk factor for developing Achilles tendinopathy, was reported to having a pior AT in previous 12 months. More studies need to be conducted to explore the biomechanical alterations in runners with AT in comparison with their healthy counterparts.

Keywords: Achilles Tendinopathy Runners Recreational RiskFactors



Spinal adaptation following exercise training: narrative Review

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Introduction: As a central nervous system component, the spinal cord can develop activity-related plasticity. central or peripheral inputs can make changes in the spinal cord. This phenomena matters in recovery from spinal cord injuries and even in designing exercise programs for professional athletes. For example, doing several weeks of ankle plantar flexors resistance training can increase the excitability of the soleus H-reflex, and balance exercises on slippery surfaces for several weeks can reduce the level of H-reflex. This study was conducted to find out whether the spinal circuits and the spinal cord itself can be permanently or temporarily modified and adapted in response to various types of exercises?t5r

Materials and Methods: searching for the studies conducted in the field of spinal adaptation following exercise training on the databases Google scholar, Pedro, PubMed, Science direct, Cochrane, Scopus, SID in the period 2000 to 2020 with the keywords neural adaptation, spinal adaptation, exercise training, H-reflex, neuroplasticity, neurorehabilitation, spinal plasticity, eccentric training, isometric training, concentric training was performed. Article reviews or clinical trials written in English in the context of spinal and supraspinal adaptations following various types of exercises (strength, balance, etc.) with or without study follow-up were included. The initial search was conducted by two reviewers who were experts in the field of neurological physiotherapy. From a total of 35 publications, 12 relevant studies were chosen and thoroughly assessed for any potential biases or poor methodology.

Results: From 35 recruited articles, 12 articles were critically reviewed and reported in two contents: 1-Spinal adaptation and balance exercises -2- Spinal adaptation and isometric, concentric, and eccentric exercises

Conclusion: in conclusion, the spinal network is fully adaptable and the manner of this adaptation is completely dependent on training and motor function. For example, balance exercises can reduce H-reflex, and strength training, especially eccentric resistance training, is associated with increased H-reflex and V-wave levels. The age limit of the participants in most of these research, which makes it difficult to generalize the findings, was an intriguing problem in the evaluated publications. Researchers may be prejudiced in doubting the veracity of the data given in certain situations. spinal plasticity in patients with neurological diseases such as stroke was also addressed. By reviewing studies in cycling exercises and spinal adaptations following cross-education, an attempt was made to highlight the possibility and necessity of clinical use of the spinal plasticity phenomenon in the rehabilitation program of patients.

Keywords: Neuraladaptation Spinaladaptation Exercisetraining Neuroplasticity

How Effective Is Proprioception Exercise on Pain, Grip Force, Dexterity and Proprioception of Elbow Joint in Patients with Tennis Elbow? A Randomized Controlled Trial

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Introduction: Patients with tennis elbow disorder usually suffer from pain and sensorimotor and proprioceptive deficits. However, in different physiotherapy treatment methods, proprioception has not been targeted to enhance the outcome of interventions. This study aimed to investigate the effects of proprioceptive strengthening exercises on pain, grip force, dexterity, and proprioception in patients with chronic tennis elbow disorder.t5r

Materials and Methods: In this randomized controlled trial, 44 tennis elbow patients (14 males and 30 females) were volunteered to participate and divided into two intervention and control groups. Participants in the control group received routine physiotherapy and patients in the intervention group, received proprioceptive exercises along with routine physiotherapy. Following 18 sessions of treatment in six weeks, pain, function, grip force, dexterity, and proprioception of elbow joint were measured using Patient-Rated Elbow Evaluation (PREE) questionnaire, handheld dynamometer, Purdue Pegboard, and isokinetic dynamometer, respectively.

Results: A significant within group improvement was observed in terms of pain , function , hand grip , and dexterity in both groups after treatment as compared to before treatment, with no statistically significant differences between the groups. Additionally, active joint position error was significantly reduced in the intervention group compared with controls . Although passive joint position error was improved significantly in intervention group and didn't improved significantly at control group . in both groups after treatment as compared to before treatment, with no statistically significant differences between the groups . A significant within group improvement was observed in TTDPM with no significant improvement between groups.

Conclusion: Combining proprioception and routine physiotherapy had comparable results to routine physiotherapy alone in patients with tennis elbow disorder. However, adding proprioception exercises to routine physiotherapy found to be beneficial for improving active joint position sense. Chronic tennis elbow may respond well to proprioception exercises beyond pain relief.

Keywords: Lateral epicondylitis, Joint position sense

A review of the effect of dry needling in comparison to the effect of muscle energy technique, kinesio taping, ischemic pressure and instrument assisted soft tissue mobilization on the amount of pain, disability, pressure pain threshold and range of motio

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Introduction: Myofascial trigger point (MTrP) is a hyperirritable spot located within a taut band of a skeletal muscle which is painful on compression or stretch and can give rise to a typical referred pain. Myofascial trigger points in the neck muscles are often associated with neck pain conditions and can contribute to worsening symptoms.

There are many treatment methods such as dry needling (DN), muscle energy technique (MET), kinesio taping (KT), ischemic pressure (IP), and instrument assisted soft tissue mobilization (IASTM) for this condition, but so far, there has not been a review comparison to determine the possible superiority of DN over other treatment methods for physiotherapist colleagues.

Therefore, the aim of this study is the effect of DN compared to the mentioned treatment methods on the amount of pain, disability, pressure pain threshold (PPT) and neck range of motion (NROM) in the myofascial trigger point in the neck pain patients.t5r

Materials and Methods: A search was made from clinical trial studies in English language published from 2008 to 2024 in PubMed, Google Scholar and Science Direct databases. The inclusion criteria this study are the measurement of pain, disability, PPT and NROM and had the key words such as 'Dry Needling' 'Muscle Energy Technique' 'Kinesio Taping' 'Ischemic Pressure' 'Instrument Assisted Soft Tissue Mobilization' 'Myofascial Trigger Points' 'Neck Pain'

As a result of the initial search, 33 studies were obtained, of which 8 studies were excluded due to not being in accordance with the objectives of the study. 3 studies compared DN with MET, 8 studies compared DN with KT, and 11 studies compared DN and IP and 2 studies compared DN with IASTM.

Results: 3 studies conducted comparing DN with MET, in 1 study concluded the significant effect of DN in improving pain, disability and PPT, in 1 study the significant effect of MET in mentioned variable and ROM and 1 study concluded the equal effect of two treatment methods in improving the mentioned variables.

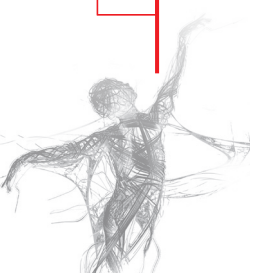
8 studies conducted comparing DN with KT, in 8 studies on pain, 6 studies on disability, 4 studies on PPT, and 3 studies on NROM were investigated and they concluded that the two treatment methods had equal effects in improving the variables.

11 studies comparing DN with IP, 9 studies conducted on of pain, 8 studies conducted on the disability, 7 studies conducted on PPT and also 4 studies conducted on the NROM concluded that the two treatment methods have equal effects in improving the variables.

2 studies conducted comparing DN with IASTM, in 1 study the significant effect of DN in improving the variables, and 1 study concluded that the two treatment methods had an equal effect.

Conclusion: According to the number of articles in the current research, in clinical decision-making, less invasive and safer treatments such as MET, KT, IP can be used to reduce pain, disability, improve PPT and NROM in the myofascial trigger point in the neck pain patients.

Keywords: Dry Needling Myofascial Trigger Points



Mirror therapy: A promising approach to improving motor function and neuroplasticity in stroke survivors

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Introduction: Aim: Stroke, a leading cause of disability, often disrupts fine motor control in the upper limb. Mirror therapy, an innovative rehabilitation technique using visual feedback, offers a promising solution. This study explores its potential to improve motor function and neuroplasticity in stroke survivors.t5r

Materials and Methods: Method and material: This study employed a randomized controlled design with two groups: mirror therapy and control (conventional therapy). Both groups received the standard rehabilitation program for 8 sessions. The MT group received an additional 40-minute mirror therapy session after each standard session. Patients performed grasping and releasing tasks using the Purdue Pegboard Test (PPT) and Box and Blocks Test (BBT) kits with their healthy hand while observing the mirrored image. Upper limb motor function was assessed using the Fugl-Meyer Assessment-Upper Extremity (FMA-UE) test. Muscle spasticity was assessed using the Modified Ashworth Scale (MAS).

Results: Results: The study found that both groups improved in upper limb motor function, but the mirror therapy group (MT) improved significantly more than the control group. This improvement was seen in hand function and coordination, with a trend towards greater improvement in speed of movements in the mirror therapy group. Spasticity, as measured by the Modified Ashworth Scale, also improved in both groups.

Conclusion: Conclusion: The study results suggest that mirror therapy combined with standard rehab offers greater benefits for upper limb motor recovery than standard rehab alone. This likely happens because mirror therapy improves brain plasticity and sensorimotor integration, while standard rehab provides targeted training.

Keywords: Mirror therapy, Stroke rehabilitation,Neuroplasticity

Physiotherapy treatment in cervicogenic headache (a review article)

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Introduction: According to the international classification of headache disorders, cervicogenic headache(CeH) is a type of secondary headache related to musculoskeletal dysfunction of the upper cervical region. Physiotherapy is the therapeutic option most frequently requested and used by individuals with CeH (around 75%). The aim of this review study is to investigate physiotherapy interventions in the treatment of cervicogenic headachet5r

Materials and Methods: In order to search for articles, the international databases PubMed, Scopus, ISI Web of Science and Pedro were investigated, based on the search strategy related to each database, with the keywords "physiotherapy, cervicogenic headache".

Results: Finally, 6 articles were investigated in this review.The interventions utilized were: cervical manipulation and mobilization, cervico-scapular strengthening, and cervical and thoracic manipulation. With the exception of one study, all reported reduction in pain and disability, as well as improvement in function.

Conclusion: A combination of cervical manipulation and mobilization with cervico-scapular strengthening was most effective for decreasing pain in cervicogenic headache subjects.

Keywords: physiotherapy, cervicogenic headache

Comparison between FST and PNF in Athletes with ACLR

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Introduction: In team sports like football, handball, and basketball there is a relatively high incidence of a rupture of the anterior cruciate ligament , and one of recommendation for patients who wish to return to sports is to reconstruct the ACL to achieve anatomical stability of the knee. Further research shows that the RTS process in rehabilitation protocols with the lowest risk of re-injury is about 9 to 12 months.t5r

Materials and Methods: The present approach method was semi-experimental and applied, and its statistical population consists of 38 soccer players with a history of ACL and surgery, who were randomly divided into two groups of 16 people using the FST method and 16 people using the PNF method and The protocols were applied in this way for a period of 8 weeks, Three set every week and each Set is for 15 minutes. Patient-reported measure Flexion and Extension Reng Of Motion scores Determine the amount of pain by VAS Scores, the Knee Outcome Survey—Sports Activity Scale (KOS-SAS), were collected and summarized.

Results: The results of the statistical analysis of the data from the analysis of variance test (ANOVA) and SPSS software version 27 showed that there is a significant difference between the fascia stretching therapy group and PNF, and the recovery effects were more dominant in the FST group, and the significant difference in The variable of pain assessment scale (P=0.022), range of motion of flexion and extension (P=0.029), examination of the outcome of the knee-sports activity scale (KOS-SAS) (P=0.017) was. Also, people are more satisfied with FST protocol than PNF.

Conclusion: The results showed that FST is more effective in reducing pain, increasing the range of motion of Flexion & Extension and KOS-SAS compared to the PNF group.Therefore, it is recommended to use FST for the faster return of athletes with a history of ACL injury.

Keywords: ACLR- FST- PNF- ROM- KOS

Dry Needling Improved DASH and Pain in patients with Myofascial Trigger Points in Shoulder Girdle Muscles

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Introduction: Physiotherapists have accepted the dry needling (DN) technique as an adequate treatment for myofascial trigger points (MTrPs). Considering that most similar studies have only focused on one muscle, the current study aimed at evaluating the influence of DN on patients with musculoskeletal pains caused by active MTrPs in shoulder girdle muscles.t5r

Materials and Methods: This quasi-experimental study was achieved based on experiences and observations in clinical settings. Totally, 20 subjects were selected with pain in shoulders and/or upper limbs, as well as head and neck with 3 to 5 MTrPs in the shoulder girdle muscles. They were candidates for treatment with DN in 5 sessions every other day during 2 weeks. The subjects were evaluated by the visual analogue scale (VAS), pressure-pain threshold (PPT), and the disabilities of the arm, shoulder, and hand (DASH). The statistical analysis was done using the paired t test.

Results: A significant difference was observed in VAS, DASH, and PPT results after the intervention compared with those values before the intervention. $P \leq 0.05$ was considered as the level of significance.

Conclusion: Considering the observed improvements in VAS, the PPT, and DASH scores, the DN can be used as an impressive therapeutic method for MTrPs in shoulder girdle muscles.

Keywords: MTPs, Dry needling, PPT, Pain,

Examining the diagnostic accuracy of common physical examination and functional tests in the diagnosis of patellofemoral pain syndrome among patients with anterior knee pain

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Introduction: The aims of this study were to evaluate the diagnostic accuracy of common physical examination and functional evaluation tests, and to determine a set of tests with the highest diagnostic accuracy for diagnosing patellofemoral pain syndrome (PFPS) in patients with anterior
knee pain.t5r

Materials and Methods: Based on careful evaluation of clinical findings and imaging methods by orthopedic physicians, 162 patients with anterior knee pain were classified into two groups of PFPS and non-PFPS. The physical examination and functional tests were performed by two physiotherapists. The accuracy of these measures was determined by calculating sensitivity, specificity, area under the receiver operating characteristic (ROC) curve (AUC), likelihood ratio (LR), and predictive value (PV).

Results: Our results showed the most sensitive tests in identifying patients with PFPS were as follows: eccentric step test [0.82 (95%CI: 0.72–0.89)]; palpation test [0.81(95%CI: 0.70–0.88)]; and prolonged sitting [0.73 (95%CI: 0.62–0.82)]. The palpation test, patellar tilt test, eccentric step test, navicular drop test, squatting, and stair descending tests had an acceptable accuracy (AUC ≥ 70). The strongest combination of the physical examination and functional tests included pain severity between 3 and 10 during stair descending test and pain severity between 6 and 10 during prolonged sitting test. This combination showed a positive LR of 19.47 (95% CI: 6.36–59.65) and a posttest probability of 95%.

Conclusion: Our findings provide evidence for the good accuracy of the palpation test, patellar tilt test, eccentric step test, navicular drop test, squatting, and stair descending and prolonged sitting tests for diagnosing PFPS. Also, the combination of stair descending test and prolonged sitting test could be very useful for ruling in PFPS patients.

Keywords: Patellofemoral-pain-syndrome; physical-examination; functional-tests; sensitivity; specificity

Lower extremity joint kinematics in individuals with and without bilateral knee osteoarthritis during normal gait: A cross-sectional study

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Introduction: Background: Knee osteoarthritis (KOA) is a prevalent musculoskeletal disease associated with pain and changes in joint mechanics. Determining kinematic parameters of gait would lay the groundwork for further research to develop interventions that minimize walking difficulty among those with KOA. This study aimed to investigate the kinematic parameters of the lower extremities during normal walking in individuals with and without KOA.t5r

Materials and Methods: Lower extremity kinematic data were recorded for 20 individuals with bilateral mild to moderate KOA and 20 control volunteers in this comparative, cross-sectional study. The participants walked at a comfortable preferred speed across normal path on a treadmill. The sagittal and frontal plane joint angles and angular velocities of the lower extremity joints were recorded.

Results: According to the results, the control individuals exhibited a significant higher peak hip flexion ($p = .007$), peak knee flexion ($p = .04$), and peak hip flexion angular velocity ($p = .02$) compared to the KOA group.

Conclusion: The findings of the present study confirm that musculoskeletal conditions may lead to different adaptation strategies in gait parameters in individuals with and without KOA.

Keywords: Gait, Humans, Biomechanical Phenomena

Investigating the Additional Effect of Myofascial Release in the Superficial Back Line Chain on Chronic Plantar Fasciitis

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Introduction: The concept of myofascial chains, proposed by Thomas myer, means that the tension of a contractile district has repercussions and influences other districts near and far. it has been shown that myofascial tissue can transmit the tension produced to other muscles along certain specific pathways. Although this concept has strong physiologic and histologic support to justify its use by clinicians, it lacks research based evidence for clinical practice. This study aimed to explore the additional effect of myofascial release in the superficial back line (SBL) chain compared to local release in patients with chronic plantar fasciitis.t5r

Materials and Methods: 30 participants with chronic plantar fasciitis were randomly assigned to either the Chain-Myofascial release (C-MFR) or Local-Myofascial release (L-MFR) group. Assessments included the Numeric Pain Rating Scale (NPRS), Foot Function Index (FFI), and ultrasonography for measuring plantar fascia thickness. Participants were evaluated at baseline and 48-72 hours post-intervention.

Results: The C-MFR group exhibited greater improvements in NPRS and FFI scores compared to the L-MFR group. Although the thickness of the plantar fascia decreased significantly in the C-MFR group, there was no statistically significant difference in plantar fascia thickness reduction between the two groups.

Conclusion: The findings suggest that while local release of the gastrocnemius muscle is significant in CPF management, an integrated approach addressing the entire myofascial chain may yield better outcomes. This study underscores the importance of considering myofascial connections in treatment protocols, as changes in one part of the chain can influence other areas. Future research with extended follow-up periods may reveal more significant differences between interventions.

Keywords: Myofascial release - Plantar fasciitis

Investigating changes in respiratory muscle strength and diaphragm thickness in patients with chronic neck pain: a systematic review

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Introduction: changes in the respiratory system and respiratory muscles, is one of the problems associated with neck pain. The purpose of the present study was to review the previously published studies that have focused on changes in the strength of the respiratory muscles and the diaphragm thickness.t5r

Materials and Methods: : In this systematic study, related articles were searched from Medline, Scopus, Web of Science, Google scholar, PubMed, EMBASE, Science Direct and ProQuest databases. The keywords Chronic neck pain, Pulmonary function, Respiratory weakness, Diaphragm thickness were used. Among the 160 articles searched, a total of 15 articles were included that investigated changes in respiratory muscles and diaphragm thickness in patients with chronic neck pain. All studies had a cross-sectional design. There were some variations among the studies in terms of methodology, musculoskeletal and respiratory parameters and sample size.

Results: According to some studies, a significant difference was reported in maximum inspiratory pressure, maximum expiratory pressure and diaphragm thickness in patients with chronic neck pain compared to asymptomatic subjects. Pain score, disability index, craniocervical angle and neck muscle strength were significantly correlated with respiratory parameters.

Conclusion: As neck pain becomes chronic, changes occur in the respiratory system, including a decrease in the strength and thickness of the respiratory muscles compared to healthy individuals, which is clinically important.

Keywords: neck pain, Respiratory weakness, Diaphragm

Effects of dual-task exercises with ankle-foot orthosis on stroke gait

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Introduction: There is limited research on the use of ankle-foot orthosis (AFO) with dual-task exercises. The aim of the study was to assess impact of dual-task exercises while wearing AFO on gait, as well as the additional effects of AFO on cognitive-motor interference of stroke patients during walking.t5r

Materials and Methods: Eleven hemiplegic people after stroke, aged 35-65 years, underwent gait training with dual-task exercises for 10 daily sessions over 4 weeks, guided by a physiotherapist while wearing an AFO. Gait was measured under two conditions—only dual-task walking and dual-task walking with the AFO—at baseline and after 4 weeks of training using a motion capture system. The gait parameters were compared before and after intervention in each condition and between two walking conditions after intervention using paired t-test.

Results: After 4-week intervention, there was no significant difference in any gait parameters between two walking conditions. In dual-task walking alone, several gait parameters significantly improved compared to baseline, including peak ankle plantarflexion angle, peak knee flexion angle in loading response, peak knee extension moment in response loading, and peak hip flexion moment in pre-swing. In dual-task walking with AFO, peak knee flexion angle and peak knee and hip extension moments in loading response phase were significantly improved after intervention compared to baseline.

Conclusion: While both dual-task exercises and dual-task exercises with AFO had a positive effect on some gait kinetics and kinematics, there was no additional effect on the improvement of stroke gait when wearing AFO during dual-task walking.

Keywords: Stroke, AFO, Dual task, Gait

Intra-rater reliability, and minimal detectable change of 3 muscle compressibility measurement methods using ultrasonography in spastic hand flexors

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Introduction: Muscle architecture assessment with ultrasonography (US) is a popular and relatively new method in musculoskeletal research. Muscle compressibility introduced as a new sonographic parameter in previous studies which calculate from muscle thickness parameter to evaluate muscle elasticity, which is known to be negatively affected in spastic muscles. This method can be used to evaluate treatment methods claiming to reduce or manage spasticity. However, before recommending its use in spasticity evaluation, its reliability should be established. Therefore, this study aimed to determine the intra-rater reliability, minimal detectable change, and responsiveness of three muscle compressibility methods spastic hand flexor muscles via US in different probe locations and scanning orientations in patients with chronic ischemic stroke.t5r

Materials and Methods: Twenty-four patients with a mean age 54.50±9.44 entered this study. The outcome measure was muscle compressibility, which was measured using three methods: longitudinal scanning from the middle of the forearm, and two transverse scanning methods from the proximal upper third and middle of the forearm. All measurements were performed over two days with a 24-hour interval by an expert physiotherapist specializing in musculoskeletal imaging. Standard error of measurement and minimal detectable change were also calculated for all three measurements.

Results: The analysis revealed that muscle compressibility in the middle forearm, as measured via longitudinal scanning, demonstrated excellent reliability (0.902) and fell within the good to excellent range (0.789-0.956). When measurements were taken in the proximal upper third using transverse scanning, the reliability was good (0.887) and also fell within the good to excellent range (0.760-0.949). lastly, the reliability of the third method (middle forearm, transverse scanning) was deemed good with a range from moderate to excellent. The minimum detectable change (MDC) values were 4.28, 4.70 and 6.27 for the three methods, respectively.

Conclusion: The measurement of muscle compressibility in spastic hand flexor muscles in chronic ischemic stroke patients is a reliable assessment method, whether in longitudinal or transverse scanning.

Keywords: Spastic-hand-flexors, Muscle compressibility, Reliability, Ultrasonography

Diaphragm thickness thickness change and excursion in subjects with and without nonspecific low back pain using B mode and M mode ultrasonography

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Introduction: Background: Previous studies have demonstrated that respiratory dysfunction has a potential association with low back pain (LBP). Despite the role of the diaphragm for respiration and spinal stability, knowledge of the function of both sides of the diaphragm in subjects with LBP is still limited.

Objective: This study aimed to compare the structural integrity and function of the right and left hemidiaphragm by ultrasonography (USG) in subjects with and without nonspecific chronic low back pain (NS-CLBP). t5r

Materials and Methods: Methods: A total of 37 subjects with NS-CLBP and 34 healthy subjects participated in this case-control study. The thickness, thickness change, and excursion of the right and left hemidiaphragm were compared within and between the groups during quiet breathing (QB) and deep breathing (DB) through B-mode and M-mode ultrasound imaging.

Results: Results: The LBP group had a significantly smaller degree of right hemidiaphragm thickness change (P = .001) compared with the healthy control group, with a strong effect size. Nevertheless, there was no significant change for diaphragm thickness and excursion between the two groups. The result showed that, in the healthy group, the right hemidiaphragm had a significantly smaller thickness at expiration and larger thickness change compared with the left hemidiaphragm, with a moderate effect size. Based on the multivariate prediction analysis, the right hemidiaphragm thickness change might significantly predict LBP.

Conclusion: Conclusion: We found that participants with LBP had a smaller degree of right hemidiaphragm thickness change. Also, the right hemidiaphragm thickness change might significantly predict LBP.

Keywords: diaphragm; low back pain; ultrasonography

Intrarater Reliability of Diaphragm Excursion and Resting Thickness Using Ultrasound Imaging in Subjects With Nonspecific Chronic Low Back Pain

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Introduction: Objective

The purpose of this study was to establish within-day intrarater reliability values of ultrasound measurements (excursion and resting thickness).t5r

Materials and Methods: Methods

Seventeen volunteers met the inclusion criteria for this preliminary study. The right and left hemidiaphragm excursion and resting thickness were compared between 2 measurement sessions using M-mode and B-mode real-time ultrasound, respectively (30 min apart). Intraclass coefficients, coefficients of variation, standard errors of measurement, and minimal detectable changes were calculated to determine intrarater reliability.

Results: The intraclass coefficients of right hemidiaphragm excursion were 0.91 and 0.94 during quiet and deep breathing, respectively. The intraclass coefficient of left hemidiaphragm excursion was 0.95 during quiet breathing. The intraclass coefficients of diaphragm resting thickness were 0.99 and 0.97 in the right and left hemidiaphragm, respectively, which showed high intrarater reliability for ultrasound measurements of both sides of the diaphragm.

Conclusion: This preliminary study suggests that diagnostic ultrasonography could be used as a potential method for measuring the resting thickness and excursion of the right and left hemidiaphragm in people with chronic low back pain. Future research with a larger sample size is needed to confirm these findings.

Keywords: Diaphragm Excursion, Thickness, Ultrasound Imaging

Neurogenic Bowel and Bladder Following a Traumatic Brown-Sequard Syndrome: A Case Study

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Introduction: Brown-Sequard syndrome is one type of incomplete upper motor neuron (UMN) disorders that characterized by only one-half damage in spinal cord. One of the complications following spinal cord injury is neurogenic bowel and bladder. The UMN bowel syndrome is characterized by increased colonic wall and anal tone. Voluntary control of external anal sphincter is disrupted and sphincter remains tight, thereby promoting retention of stool. Urinary incontinence associated with some post-void residual volume (PVR) is common in spinal cord injury. Physiotherapy has been found to be an effective intervention for enhancing pelvic floor function.t5r

Materials and Methods: Case Presentation

A twenty-four years old male, suffered from a spinal cord injury in the thoracic region due to a gunshot wound, was neurologically evaluated according to the ASIA criteria and MRI. An incomplete Brown-Sequard lesion at the T5 segment was diagnosed.Reduced proprioception, diminished sensation, and weakness in the lower trunk and limbs on the right side were among the symptoms. On the left side, there was also a lessened sense of temperature. Urinary incontinence, stool retention and constipation were identified as well. Using a self-catheterization device, the PVR was emptied after manually eliminating the waste.

Treatment Description

One month after the trauma, a multimodal pelvic rehabilitation program was performed three days a week for 20 weeks. The program consisted of Faradic current(frq:40Hz-hold:4s-rest:4s-pulse duration:150πs- time:15 min)and functional electrical stimulation(frq:40Hz-hold:8s-rest:4s- pulse duration:150μs- time:15min with concomitant contraction of pelvic floor for strengthening levator ani and coccygeus),transcutaneous nerve stimulation(electrode placement: suprapubic on the bladder or intra-anal by probing-frq:20Hz- pulse duration:200πs- time:15 min) and interferential current(4pole- sweep frq:30Hz- carrier frq:4000Hz-sweep:1.5^1.5 s--time: 20min). After 16 sessions, he could contract the pelvic floor, biofeedback therapy was done 20minutes per session.

Results:

Conclusion: A 20-week multimodal pelvic rehabilitation program improved his quality of life and decreased his bladder and bowel dysfunctions.

Keywords: Brown-Sequard Syndrome, Pelvic Floor Physiotherapy.

The Breath-Back Connection: A systematic review

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Introduction: Background: One of the most common disorders affecting almost all groups of people is low back pain (LBP). The coactivity of the abdominal muscles and respiratory muscles was considered as an important factor to provide the lumbopelvic stability.

Objective: To systematically review the previous studies explored the connection between low back pain and respiration function in patients with LBP.

t5r

Materials and Methods: Study design: Systematic review

Methods: We searched available databases like PubMed, ProQuest, Science Direct, EMBASE, and MEDLINE from the beginning through the April 2024, comprehensively. All of the case control and cross-sectional studies that assessed the activity/thickness of abdominal muscles and lumbar multifidus muscles during breathing in LBP patients and healthy subjects with either ultrasonography (US) or electromyography (EMG) were included in our systematic review. To appraise the quality of the included studies Critical Appraisal Skills Program checklist used.

Results: Results: Based on the initial search, 508 studies were found. After screening the titles, abstracts and bibliographies of connection 508 items 14 relevant articles remained to be reviewed.

Conclusion: Conclusion: Different diaphragm and abdominal muscles' function and thickness during breathing were reported in patients with LBP compared with healthy subjects. Concerning the lumbar multifidus muscles, no significant difference was recorded in subjects with LBP. Regardless of the abdominal muscle types, most studies showed lower abdominal muscles' thickness in LBP patients compared with healthy subjects. The small number and divergent findings highlighted the need for further research on this topic.

Keywords: LBP Sonography Karate Respiration Multifidus

Altered ultrasonographic activity of multifidus and abdominal muscles during breathing in Karate athletes with and without nonspecific chronic low back pain

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Introduction: While researchers have investigated low back pain (LBP) and its association with the thickness of trunk muscles in the general population, few articles have studied this relationship in athletes. This study aimed to investigate the altered ultrasonographic activity of abdominal muscles and multifidus during breathing in karate athletes with and without nonspecific chronic low back pain (NSCLBP).

t5r

Materials and Methods: Design Cross-sectional study

Methods 15 karate athletes with NSCLBP and 15 karate athletes without NSCLBP participated in the study. Muscle thickness change was measured by ultrasonography during breathing in the end-inspiration and end-expiration phases for the transverse abdominis (TrA), internal oblique (IO), external oblique (EO), and rectus abdominis (RA) muscles. The breathing phases were monitored by the belt sensors around the participants waist. The data were normalized. An independent t test was run to analyze the data at a confidence level of 95% ($p < 0.05$).

Results: Results A significant difference was shown in the average size of the external oblique muscle at the end of expiration between the healthy and LBP groups ($p < 0.05$), so that the size of the external oblique muscle at the end of expiration was smaller in the athletes with LBP than in the healthy group. The average size of the internal oblique, transversus abdominis and lumbar multifidus muscles in the group of karate practitioners with LBP was lower than the healthy group, but they were not statistically different from each other.

Conclusion: Conclusion Karate athletes with chronic non-specific low back pain have smaller external oblique muscles at the end of expiration than the healthy group. This result can be caused by the weakness of motor control of the trunk muscles and the lack of coordination in the activity of the abdominal muscles and diaphragmatic breathing pattern in karate practitioners with non-specific chronic back pain.

Keywords: LBP Abdominal Multifidus Ultrasonography Respiration

Biomechanical and physiological effects of a backpack

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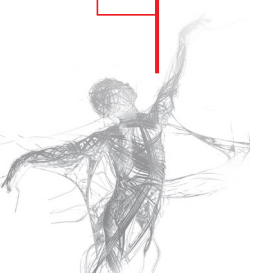
Introduction: This paper reviews the effects of carrying a backpack on posture and categorizes its various aspects: Alteration of neck, shoulder, and trunk angles while carrying a backpack, and alteration of spatiotemporal variables while walking while carrying a backpack. The effects of carrying a backpack on the activity of the trunk and neck muscles and on the pressure on various parts of the soles of the feet will also be discussed. A general review of backpack design, vertical and horizontal positioning, and recommendations for optimal carrying and maximum allowable loads are also provided.t5r

Materials and Methods: A comprehensive search for articles related to the keywords "backpack", "posture" and "double-pack" and their Pubmed MESH was performed in the PubMed and Google Scholar databases. No language was restricted (one article was written in German in 2021). The total number of articles in the period 1992-2023 for this search was 233. The articles were first selected by title, then the abstracts were reviewed, and finally the full text of 15 articles was reviewed.

Results: Among the articles included; 2 articles related to double-packs, 3 articles related to front backpacks, 3 articles related to gait parameters and backpacks, 1 article related to backpacks and foot pressure, 5 articles related to backpacks and posture.

Conclusion: There is no consensus on the allowable load for backpacks, but in general, loads of less than 10% of body weight are recommended. Backpacks with 10% of body weight do not significantly affect posture and gait, but with 15% and 20% of body weight significantly increase the trunk flexion angle. The electromyographic activity of the upper trapezius, sternocleidomastoid, and mid-cervical paraspinal muscles increases significantly when carrying a backpack with a load of 15% of body weight compared. The closer the backpack is to the body, the less the body's center of gravity moves. As a result, the compensatory movements needed to neutralize the effect of the backpack are reduced. Double-packs with front and back packs are preferable for balance control. The double-packs maintain a more upright posture while walking and also cause less postural deviations. Trunk forward lean and also energy expenditure is less when walking with a double-pack than with a backpack.

Keywords: backpack, posture, double-pack, balance



Design, Manufacture and production of rehabilitation aid belt for Neurological Patients

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Introduction: standing and starting movement is one of the most common problems of stroke patients, spinal cord injury and many other patients requiring rehabilitation, which if not done safely may lead to falls and injuries and even the death of the patient.

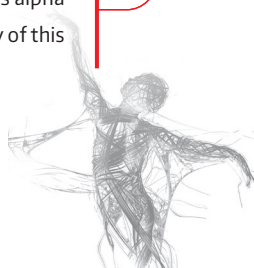
Many patients suffering from neuromuscular disorders, including stroke patients, spinal cord injury patients, and patients who request starting after joint replacement and traumatic fractures of the lower limbs, seek to adopt incorrect and frequent positions such as moving the patient through levers. shoulder and armpit area or transfer by pulling hands by companions, caregivers and therapists, they will experience clinical manifestations of upper limb joint disorders including shoulder sprain, tendinopathy and chronic musculoskeletal pains as well as skin irritations which in Finally, it will reduce the patient's desire to continue the treatment.t5r

Materials and Methods: Materials were prepared for making prototypes and final samples, and by referring to the technical orthopedic center, the production of the primary product was done based on technical drawings and raw materials.

The design of the questionnaire was done in two phases: qualitative phase and quantitative phase. In the qualitative phase, first, by reviewing the authoritative academic books, scientific articles published in the authoritative journals of physiotherapy, and interviewing the professors of physiotherapy, experts and people who participated in the initiation of the patients, the items of the questionnaire were extracted.

Among the obtained variables, the variables that had the most repetition and emphasis in the articles and interviews were selected as the questions of the satisfaction survey questionnaire. In the quantitative phase, the content and form validity of the questionnaire designed in the previous phase was determined. To evaluate content validity, qualitative and quantitative methods (CVR, CVI) were used and the opinions of physical therapy experts were taken into account at this stage. Also, to determine face validity, a qualitative method was used, which was conducted through interviews with two physiotherapists whose satisfaction was to be measured.

Results: To determine internal consistency by calculating Cronbach's alpha, a questionnaire was sent to 2 physiotherapists and they were asked to complete these questionnaires. correlation of the variables of the questionnaire is estimated, which tends to zero if the answers of the people are completely unrelated to each other, and if all the questions are reliable and show the same result, this coefficient will be Cronbach's alpha coefficient after calculation in SPSS software for this study was 0.84, which shows a very good validity of this

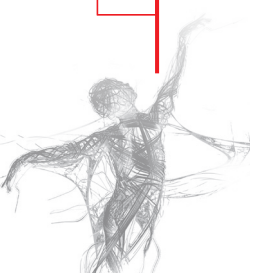


index.

The test-retest reliability evaluation was used. Two physiotherapists who completed the questionnaire in the previous stage completed the questionnaire after two weeks. After calculation in SPSS software, Spearman's correlation coefficient was acceptable and in the whole questionnaire was between 0.61 and 0.96 ($P<0.001$), which confirms the reliability of the present questionnaire over time.

Conclusion: The industrial production of this product in the future can lead to the easy and safe launch of patients in various stages of rehabilitation, reduction of skeletal, neurological and muscular disorders in therapists and patients' companions, as well as reduction of the death rate due to falls during the transfer of patients.

Keywords: Design rehabilitation Neurological Belt



حامیان چهارمین کنگره بین‌المللی و سی و پنجمین کنگره سالیانه انجمن فیزیوتراپی ایران

گروه حامیان پلاتینیوم

شرکت	سالن
EXON	B
MDF	B
نوین	D
آویژه درمان	B

گروه حامیان طلایی

شرکت	سالن
بلوریک	B
آرتیمان	B
موج پرداز تصویر	C
پایامهر تجهیز	C
رایمند	A
نهال	C
نگارپژوهان طب	C
سپهران	C
طب و صنعت شریف	B
سپید جامگان	B
مهندسی پزشکی دنیز	B
ایران سپتا	B

گروه حامیان نقره‌ای

شرکت	سالن
آوین طب	C
مایکروتکنولوژی	A
پیام آوران هنر شرق	A
نرم افزار بقراط	A
نوآوران	A
مای کلینیک	B

گروه حامیان برنز

شرکت	سالن
مهندسی پزشکی پرتو	A
آذر بهبود	A
ایده گستر آریا تک	A
پویا	C
ZIMED	A
آرمان پویا	A
هرمز کیان	A
نرم افزار تسکا	A
فرزام طب	A
توانبخشی امید	A-B
توسعه سنجش دقیق	A
مهرگان تجارت	A

سایر حامیان

شرکت	سالن
سی شید	c
طب صبا	E
ایرانیان	E
پارتاک طب اسپاد	E
ثمر	E
مایا اسلیم آریا	F
مکاترونیک آریانا	F
توانبخشی ساریژ	F
بهبود افق گستر پارسیان	F
ویرا سلامت گستر نورا	F
پیامد پژواک ایده	F
نوین صنعت	F
ایده پزشکی اشکان	F
مهرسام	F
اکسینو	F
سالار مهر	F
پیشگامان خراسان	F
نسیم گستر	F
پایا فناوران فردوسی	F
انتشارات محسنی	F
ارتعاشات طبی ایرانیان	A
MIT	F
سکن طب	F
مایوریلیز	F
الیا آوید راد	F