IJCIH
Converging Healthcare & Technology

INTERNATIONAL JOURNAL OF CONVERGENCE IN HEALTHCARE

Published by
IJCIH & Pratyaksh Medicare LLP www.ijcih.com

Consequence of Snake Bite on Foot Posture in Paediatric Population: A Case Report

Payal Mehta[1], Shweta Sharma[2], Kanu Goyal[3]

[1]PG Student, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, MM (DU), Mullana, Ambala, Haryana, [2]Assistant Professor, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, MM (DU), Mullana, Ambala, Haryana, [3]Assistant Professor, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, MM (DU), Mullana, Ambala, Haryana

Abstract

Snakebite envenoming is a potentially life-threatening disease caused by toxins in the bite of a venomous snake. It is an emergency and dangerous situation, especially for people in rural India, where agricultural sector is predominantly widespread and lack of medical facility is there. Here, a case is reported of a 8 year old boy who came with a history of snake bite (around 6 months back) and is recently presenting complaints of common peroneal nerve and sural nerve palsy. This case reports highlights the exhibiting features at present, along with an insight of on-going physiotherapy rehabilitation protocol (after sensations are fully intact), which has shown positive outcomes. The ongoing physiotherapy management included: i. Electrical Stimulation for common peroneal nerve activation, ii. Rood's Approach for sensory facilitation (S1 dermatome), iii. Scar tissue mobilization, iv. Maitland's joint mobilization technique for ankle joint. v. Exercise therapy, which included lower limb ROM ex., Gait Training and Play Therapy. Gradual succession is seen in foot posture alignment, on FPI-6 within 20 days interval. Marked improvement can be appreciated in ankle ROM and MMT. This intervention can be explored further in various age groups and remarkable difference can be observed.

Keywords: *Foot Posture Index-6; Physiotherapy Rehabilitation; SMWT.*

IJCIH
Converging Healthcare & Technology

INTERNATIONAL JOURNAL OF CONVERGENCE IN HEALTHCARE

Published by
IJCIH & Pratyaksh Medicare LLP www.ijcih.com

Balance Confidence in Sub Acute Postpartum Period (12 Hrs-6 Weeks)

Suraya Niyaz[1], Kanu Goyal[2]

[1]PG Student, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation MM(DU), Mullana, Ambala, Haryana, [2]Assistant Professor, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation,MM(DU), Mullana, Ambala, Haryana

Abstract

Falls caused by balance during pregnancy are quite common, and these issues can continue postpartum, potentially posing a danger to both mother and baby due to many physiological, anatomical and physical changes during pregnancy. The postpartum mothers have fear of falling while performing the various activities like walking on their own without having assistance, giving their baby the possible care, going to the toilet on their own, risk of falls and sustained fall-related injuries. The objective of the study was to evaluate the level of confidence of balance in the early postpartum period to prevent the fall. This study was done through cross-sectional observational study at 12 hours to 6 weeks of postpartum period. 281 women with age group 17-36 years who met inclusion criteria were recruited in the study.

Methodology: Balance confidence was measured through questionnaire. Sample size of our study was 281; among them 19% had normal delivery and 81% had c -section delivery. Normality of demographic was assessed by Shapiro Wilk test.

Result: It was found that balance is affected in postpartum period. Balance confidence is affected in the postpartum period. They can perform the activities with assistance.

Keywords**:** *Pregnancy, postpartum, Balance, Fall risk, Confidence.*

IJCIH
Converging Healthcare & Technology

INTERNATIONAL JOURNAL OF CONVERGENCE IN HEALTHCARE

Published by
IJCIH & Pratyaksh Medicare LLP
www.ijcih.com

Impact of Different Level Aerobic Exercise and Resisted Training In Post Menopausal Women on Sleep and Psychological Health Problem: A Systematic Review and Meta: Analysis of Randomised Controlled Trials

Shweta Yadav[1], Vinika Chaudhary[2], Sonia Pawaria[3]

[1]MPT Student, Faculty of Physiotherapy, SGT University, Gurugram, [2]Assistant Professor, Faculty of Physiotherapy, SGT University, Gurugram, [3]Associate Professor, Faculty of Physiotherapy, SGT University, Gurugram

Abstract

Background: Postmenopause is an adaptation process during which women go through a new biological state. This process is accompanied by many biological and psychosocial changes, symptoms such as: hot flashes, vaginal dryness, mood switching, depression and sleep difficulties.

Objective: To find the effect of exercises on sleep difficulties and psychological health problems in postmenopausal women.

Methods and analysis: This review and meta-analysis aimed to evaluate the effects of exercise on sleep difficulties in postmenopausal women. Pubmed, Google Scholar, Scopus and PEDro databases were searched. This review included all articles published from 2013 to 2023.Of all the articles retrieved 13 were included. The included studies were fair and qualitative according to the PEDro scale. The Cochrane Collaboration tool of risk of bias was used to assess the risk of bias.

Results: Studies have shown that exercise is effective in improving sleep quality. The results were statistically significant (MD = -0.65, 95% CI: -1.02 to -0.27, I^2 = 96%, p< 0.00001). Statistical significance was found for quality of life (MD = -0.32, 95% CI: -0.83, 0.19, I^2 = 71%, p = 0.03). The results showed that low-intensity exercise did not reduce PSQI scores compared to the control group, while moderate and high intensity exercises had a positive effect on improving sleep quality.

Conclusion: In conclusion, various exercises like aerobic and resistance-based training, moderate intensity training, low intensity training and high intensity interval training have a significant effect on sleep and psychological health problems in the postmenopausal phase, evaluated with the PSQI questionnaire, anxiety and depression.

Keywords: *Aerobic exercises, Exercises, High intensity interval training, Moderate intensity training, Postmenopausal, Resistance-based training, Sleep.*

IJCIH
Converging Healthcare & Technology

INTERNATIONAL JOURNAL OF CONVERGENCE IN HEALTHCARE

Published by
IJCIH & Pratyaksh Medicare LLP www.ijcih.com

Impact of Variables Based on Cognitive Abilities in Gestation/ Gravidity: A Narrative Review

Neha Yadav[1], Vinika Chaudhary[2], Aarti Gupta[3]

[1]PG Student, Faculty of Physiotherapy, SGT University, Gurugram (HR), [2]Assistant Professor, Faculty of Physiotherapy, SGT University, Gurugram, [3]Assistant Professor, Faculty of Physiotherapy, SGT University, Gurugram

Abstract

Purpose: Pregnancy and motherhood are incredible experiences that change a woman's body, mind, and emotions. This narrative review takes a closer look at how these changes affect the way women think and process information, focusing on three key areas: memory, executive function and attention.

Relevance: Pregnancy represent periods of significant psychological and physiological changes for women. Understanding how these changes affect cognitive function is crucial for providing optimal support and interventions during these vulnerable periods.

Methods: The review adopts a narrative approach, analysing and summarizing existing research studies on the topic. Relevant literature was identified through a comprehensive search of academic databases and journals. Data was extracted from PubMed, Google Scholar, MEDLINE, The Web of Science and Frontiers. Included studies were published in between 1999 and 2023.

Results: The review draws attention to possible pregnancy-related memory loss, especially in verbal recall. However, the evidence for pregnancy- related changes in working memory and visual memory is mixed. Pregnant women and mothers appear to exhibit similar alerting and orienting attention as non-pregnant women. Additionally, sleep fragmentation during pregnancy may contribute to poorer attention.

Conclusion- Cognitive changes during pregnancy and motherhood are complex and multifaceted. Individual differences and various influencing factors, such as sleep, hormones, and stress, play a significant role in shaping cognitive function during this period. Further research is crucial to fully understand the interplay between pregnancy, motherhood, and cognitive function, allowing for the development of effective interventions and support systems for mothers.

Keywords: *Attention, Cognition, Executive Function, Memory and Pregnancy Brain.*

IJCIH
Converging Healthcare & Technology

International Journal of Convergence in Healthcare

Published by
IJCIH & Pratyaksh Medicare LLP
www.ijcih.com

The Impact of Pilates Training in a 5-Year-Old Girl with AMAN-Type GBS: A Case Study

Sushma KC[1], Kanu Goyal[2], Shweta Sharma[3]

[1]PG Student, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, MM (DU), Mullana, Ambala, Haryana, [2]Assistant Professor, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, MM (DU), Mullana, Ambala, Haryana, [3]Assistant Professor, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, MM (DU), Mullana, Ambala, Haryana

Abstract

AMAN-Type GBS, also known as acute motor axonal neuropathy is a variant of Gullaine Barre Syndrome with sudden-onset of paralysis which is pathologically characterized by varying degrees of motor nerve fiber degeneration and sensory fiber sparing. Common symptoms of AMAN-Type GBS include Symmetrical muscle weakness causing paralysis, loss of trunk control, poor balance, hyporeflexia etc. Several studies have revealed that Pilates exercise is beneficial for the rehabilitation particularly for enhancing trunk strength and overall balance. The aim of the present case study was to explore the effect of Pilates training for patient with AMAN Type GBS.

Case Report: The author reported a 5 year and 6-month-old girl who presented with chief complaint of bilateral upper limb and lower limb weakness, inability to sit and stand independently since 2 months. Prenatal, perinatal and postnatal history of the child was not relevant and developmental milestones were achieved according to child age. Patient had a history of fever and cough followed by loss of consciousness 2 months back Patient underwent diagnostic examination like microscopic examination, chest x-ray and electro-diagnosis which revealed presence of Campylobacter jejuni and she was diagnosed with AMAN type Guillain-Barre syndrome. The pre and post Pilates training measurements were measured using short sensory profile, WEEFIM, Hughes scale and modified ERASMUS GBS OUTCOME SCORE (mEGOS).

Conclusion: The case study demonstrated improvements in the sensory profile, quality of life, and child performance following Pilates training. Notably, the probability of the patient being unable to walk independently was reduced.

Keywords: *AMAN-Type, Child, Campylobacter, Exercise Movement Techniques, Paralysis.*

IJCIH
Converging Healthcare & Technology

INTERNATIONAL JOURNAL OF CONVERGENCE IN HEALTHCARE

Published by
IJCIH & Pratyaksh Medicare LLP www.ijcih.com

Soft Tissue Mobilization Treatment Strategies in Chronic Plantar Fasciitis: A Narrative Review

Riya Kalra[1], Manu Goyal[2], Kanu Goyal[3]

[1]PG Student, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, MM(DU), Mullana, Ambala, Haryana, [2]Professor, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, MM(DU), Mullana, Ambala, Haryana, [3]Assistant Professor, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, MM(DU), Mullana, Ambala, Haryana

Abstract

Plantar fasciitis is a non-inflammatory, degenerative condition of the plantar fascia caused by recurrent stress. Obesity, limited ankle joint range of motion, extended weight bearing, and advancing age are all considered to be contributing causes to the problem. Manual Therapy plays a crucial role in treating patients with Chronic Plantar Fasciitis, there is need to explore the various soft tissue mobilization treatment options available as treatment for plantar fasciitis. Searches were conducted on PubMed, PEDro, and SCOPUS databases; RCTs enrolling patients with Chronic Plantar Fasciitis were included in this review. Language of articles is limited to English only. The reference lists for all retrieved research papers were also searched. Boolean Operators Terms or, not, and were used to extract relevant data. According to data retrieved from moderate to high quality evidence, Soft Tissue Release, Stretching of Plantar Fascia and tissue mobilization is highly effective in pain reduction and to enhance functional range as compared to other physiotherapy treatment strategies available in treating patients with Chronic Plantar Fasciitis in long term.

Keywords: *Ankle; Fascia; Fasciitis; Pain; Range of motion.*

IJCIH
Converging Healthcare & Technology

International Journal of Convergence in Healthcare

Published by
IJCIH & Pratyaksh Medicare LLP
www.ijcih.com

Interpretation of Normative Score of Isokinetic Peak Torque of Hamstring and Quadriceps among Healthy Teenagers: A Protocol Study

Nandni Goel[1], Sunanda Bhowmik[2]

[1]PG student, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, Maharishi Markandeshwar (deemed to be) University Mullana, Ambala, [2]Assistant Professor, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, Maharishi Markandeshwar (deemed to be) University Mullana, Ambala

Abstract

The isokinetic evaluation usually includes a comparison between the tested muscle length and its power. Isokinetic testing serves to assess the peak torque of the quadriceps and hamstrings muscles by determining the magnitude of generated torque. To the best of our knowledge till now the normality reference score of peak torque among teenagers has not been established. The aim of the study is to evaluate the normative reference score of isokinetic peak torque of hamstring and quadriceps muscles among healthy teenagers from age group 13-17 years. This study involves enrolling 60 healthy participants from renowned secondary schools. They will be brief on the research procedure by demonstration method. Participants will receive an assent form, and parental informed consent will be secured. Anthropometric details will be taken into account prior to the study. The research will focus on assessing quadriceps and hamstring peak torque using the BioMat Easy isokinetic dynamometer®. The protocol will include calculation of peak torques of knee flexors and extensors. The collected data will be analyzed using the Statistical Package of Social Science (SPSS, Version 20.0 Inc, Chicago, IL). Normality of the collected data will be established by Kolmogorov-Smirnov test of normality. After the completion of the study, reference values of hamstrings and quadriceps peak torque will be generated. This will be beneficial as a diagnostic tool for the evaluation of sports injuries.

Keywords: *Torque, Teenagers, Healthy Participants, Social Science, Sports injury, Parental, Informed Consent.*

IJCIH
Converging Healthcare & Technology

INTERNATIONAL JOURNAL OF CONVERGENCE IN HEALTHCARE

Published by
IJCIH & Pratyaksh Medicare LLP
www.ijcih.com

Role of Functional Electrical Stimulation in Getting Back To Feet In Spinal Cord Injury Patients With Foot Drop: A Review

Aman Kanda[1], Neha Kashyap[2], Manpreet Kaur[3], Priyanshi Sharma[4], Abhishek[5], Simran[6]

[1,4,5,6]UG Student, Banarsidas Chandiwala Institute of Physiotherapy, Kalkaji, New Delhi, [2]Assistant Professor, Department of Physiotherapy, Maharishi Markandeshwar Deemed to be University, Mullana, Ambala, [3]UG Student, Indian Spinal Injuries Centre and Institute of Rehabilitation Sciences, Vasant Kunj, New Delhi

Abstract

Introduction: Spinal cord injuries can intrude with the communication pathway between the brain and the body leading to a loss of control over the else functional neuromuscular system. It interrupts the relation between the brain and the region of spinal cord that produces walking, leading to palsy. Injury of the L5 root, lumbar plexus, sciatic nerve, common peroneal or deep peroneal nerve can possibly lead to foot drop due to weakness of anterior compartment musculature. The foot will remain flat on the ground and the individual won't be capable to dorsiflex the foot during heel strike. Functional Electrical Stimulation (FES) is a technique that uses electrical currents to stimulate nerves and in turn muscles producing functional movements. It delivers controlled electrical pulsations to target muscles, activating contractions and facilitating movements that might be challenging for the Spinal Cord Injury individuals. With this review we aim to emphasize the role of FES in early recovery of foot drop and assembling the morale of individuals towards a better quality of life.

Methodology: To construct a review on this topic, an extensive search on various databases was carried out including Ovid, Google Scholar, Medline, PubMed, ResearchGate and available textbooks. Studies done in last 15 years were included in the review.

Conclusion: FES is a key tool available to therapists working in field of neuro-rehabilitation as it produces largest improvement in motor function of individuals with SCI. It has been shown to have positive effects on walking velocity and stability as well as reducing the effort of walking and frequency of falls in patients.

Keywords: *Spinal Cord Injury, Functional Electrical Stimulations, Neurorehabilitation, Foot Drop, FES in foot rehabilitation.*

IJCIH
Converging Healthcare & Technology

INTERNATIONAL JOURNAL OF CONVERGENCE IN HEALTHCARE

Published by
IJCIH & Pratyaksh Medicare LLP www.ijcih.com

Exploring the Impact of Virtual Reality on Muscle Strength and Functional Independence in Spinal Cord Injury: A Review

Manpreet Kaur[1], Neha Kashyap[2], Aman Kanda[3], Priyanshi Sharma[4], Abhishek[5]

[1]UG Student, Indian spinal injuries center and institute of rehabilitation sciences, Vasant Kunj, New Delhi, [2]Assistant Professor, Department of Physiotherapy, Maharishi Markandeshwar Deemed to be University, Mullana, Ambala, [3,4,5]UG Student, Banarsidas Chandiwala Institute of Physiotherapy, Kalka ji, New Delhi

Abstract

Introduction: Virtual reality (VR) has captured the attention of researchers in the field of neurorehabilitation, focusing on recovering mobility, strength, balance and motor function in individuals with spinal cord injury. Spinal cord injury (SCI) is usually characterized with motor impairments, including deterioration of upper and lower limb sensory motor function that limit performance in activities of daily living and hence, reducing quality of life leading to functional dependency. VR increases motivation, engagement and allows a wide range of activities to be included in rehabilitation program. VR training leads to beneficial functional training effects in individuals with spinal cord injury. The present review aims to investigate the role of VR in regaining motor strength in patients with SCI.

Methodology: To construct a review on this topic, an extensive search on various databases was carried out including Ovid, Google Scholar, Medline, PubMed, Researchgate and available textbooks. Studies done in last 15 years were included in the review.

Result & Conclusion: The results indicate that VR-based therapy in SCI participants may have beneficial impacts on motor function recovery in addition to enhancing psychosocial and motivational components, despite the paucity of available data. To establish a clinical practice recommendation and to make strong judgments about the potential benefits of VR therapy for individuals with spinal cord injuries, more researches are required.

Keywords: *Virtual reality, spinal cord injury, neurorehabilitation, motor function, functional independence.*

IJCIH
Converging Healthcare & Technology

INTERNATIONAL JOURNAL OF CONVERGENCE IN HEALTHCARE

Published by
IJCIH & Pratyaksh Medicare LLP
www.ijcih.com

From Paralysis to Progress: The role of Robotic Gait Training in Restoring Ambulation in Spinal Cord Injury Patients: A Review

Priyanshi Sharma[1], Neha Kashyap[2], Aman Kanda[3], Manpreet Kaur[4], Abhishek[5]

[1,3,5]UG Student, Banarsidas Chandiwala Institute of Physiotherapy, Kalkaji, New Delhi, [2]Assistant Professor, Department of Physiotherapy, Maharishi Markandeshwar Deemed to be University, Mullana, Ambala, [4]UG student, Indian spinal injuries center and institute of rehabilitation sciences, Vasant Kunj, New Delhi

Abstract

Introduction: Spinal cord injury (SCI) is a critical clinical condition that disrupts brain body communication affecting sensory and motor pathways. This glitch in nerve communication leads to complications like muscle paralysis, mobility issues, bladder & bowel disorders and impaired activities of daily living (ADL). Rehabilitation for improving walking ability remains a goal for physical therapist and owing to this the use of robot assisted ambulation has become more common along with conventional physical therapy. Robotic assisted ambulation refers to use of advanced robotic technology combined with the principle of physiotherapy to provide gait training and rehabilitation treatment in person with impaired mobility. The objective of this review is to establish the role of robotic gait therapy in restoring early ambulation in SCI patient and hence favouring improvement in quality of life and functional independence.

Methodology: To construct a detailed review on this topic, an extensive search on various databases was carried out including Ovid, Google Scholar, Medline, PubMed, Research Gate and available textbooks. Studies done in last 15 years were included in the review.

Result & Conclusion: With this review we can conclude that robot assisted gait therapy combined with conventional physiotherapy has been found to improve mobility in incomplete spinal cord injury patients. Robotics has been proven to be an excellent tool to establish neuromuscular re-education to patients with SCI.

Keywords: *Spinal cord injury, robotic physiotherapy, neuro-rehabilitation, functional rehabilitation, robotic gait training.*

IJCIH
Converging Healthcare & Technology

INTERNATIONAL JOURNAL OF CONVERGENCE IN HEALTHCARE

Published by
IJCIH & Pratyaksh Medicare LLP
www.ijcih.com

Impact of Transcranial Direct Current Stimulation (tDCS) on Neuropathic Pain in Patients with Incomplete Spinal Cord Injury: A Review

Abhishek[1], Neha Kashyap[2], Aman Kanda[3], Manpreet Kaur[4], Priyanshi Sharma[5]

[1,3,5]UG Student, Banarsidas Chandiwala Institute of Physiotherapy, Kalka ji, New Delhi, [2]Assistant Professor, Department of Physiotherapy, Maharishi Markandeshwar Deemed to be University, Mullana, Ambala, [4]UG Student, Indian spinal injuries center and institute of rehabilitation sciences, Vasant Kunj, New Delhi

Abstract

Introduction: Neuropathic pain as defined by the International Association for the Study of Pain as "pain caused by a lesion or disease of the somatosensory nervous system," and which can be further categorized into central or peripheral neuropathic pain. Neuropathic pain usually starts shortly after the injury and can persist for the rest of the life. It can occur below, at, or above the level of injury. There are mainly two type of neuropathic pain, one occurs in a segmental distribution and other in diffuse distribution. It is a common complication after Spinal Cord Injury (SCI). Transcranial Direct Current Stimulation (tDCS) is being explored as a potential therapeutic approach for spinal cord injury. It involves applying a low electrical current to the scalp, modulating neural activity and promote neuroplasticity with modification of the cortical activity in individual in SCI patients which lead to decrease in neuropathic pain.

Methodology: To construct a review on this topic, an extensive search on various databases was carried out including Ovid, Google Scholar, Medline, PubMed, Researchgate and available textbooks. Studies done in the last 15 years were included in the review.

Conclusion: Transcranial Direct Current Stimulation (tDCS) has been shown to have positive effects in decreasing Neuropathic Pain in patients suffering from incomplete spinal cord injury.

Keywords: *Transcranial direct current stimulation, spinal cord injury, neuropathic pain, tDCS, non-invasive brain stimulation.*

IJCIH
Converging Healthcare & Technology

INTERNATIONAL JOURNAL OF CONVERGENCE IN HEALTHCARE

Published by
IJCIH & Pratyaksh Medicare LLP www.ijcih.com

Revolutionizing Spinal Cord Injury Rehabilitation: The Promising Role of Virtual Reality Technology

Savita Singh[1], Annu Jain[2], Moattar Raza Rizvi[3]

[1]Research Scholar, College of Physiotherapy, Singhania University, Jhunjhunu, Rajasthan, India, [2]Associate Professor, College of Physiotherapy, Singhania University, Jhunjhunu, Rajasthan, India, [3]Professor & Dean, School of Allied Health Sciences, Manav Rachna International Institute of Research & Studies, Faridabad, India

Abstract

Virtual reality (VR) technology has emerged as a promising resource for the rehabilitation of individuals with spinal cord injuries (SCIs). Recent advancements in VR have led to the development of specialized software and applications explicitly designed for SCI rehabilitation. These VR systems are engineered to improve neuromuscular coordination, proprioception, psychological resilience, and patient engagement. Notable platforms like MIERON VR and Virtually VR offer tailored exercises that focus on enhancing balance, mobility, and cognitive functions. Studies have indicated VR's effectiveness in enhancing functional performance and motor function in SCI patients, often in conjunction with robotics for a comprehensive approach. VR technology offers immersive, interactive, and adaptable rehabilitation environments, promising to overcome the limitations of conventional rehabilitation methods in addressing the multifaceted nature of SCI. The use of VR in SCI rehabilitation has shown significant promise, offering personalized, engaging, and effective therapy options. VR's potential in transforming SCI rehabilitation practices underscores the importance of ongoing research and development in VR technology to fully unlock its benefits, ultimately improving patient recovery and quality of life. The use of VR in SCI rehabilitation has been shown to be effective in improving physical and cognitive function after SCI. VR has proven to be a useful tool by allowing for the virtual reproduction of real-life scenarios, which may be difficult or impossible for individuals with SCI. The combined use of VR and haptic control with coherent sensory feedback has great potential for rehabilitation and can be used as a tool for assessing the progress of rehabilitation. VR has also been shown to be effective in enhancing sitting balance ability in individuals with SCI, offering a game- based training program that improved trunk postural control. In conclusion, VR technology holds significant promise in SCI rehabilitation, offering personalized, engaging, and effective therapy options. The ongoing research and development in VR technology are essential to fully unlock its potential in transforming SCI rehabilitation practices, ultimately improving patient recovery and quality of life. The evidence supports the effectiveness of VR in enhancing functional performance and motor function in SCI patients, highlighting the need for continued exploration and utilization of VR in SCI rehabilitation.

Keywords: *Spinal cord injuries, Virtual Reality, Rehabilitation, Neuromuscular Coordination, Proprioception.*

IJCIH
Converging Healthcare & Technology

INTERNATIONAL JOURNAL OF CONVERGENCE IN HEALTHCARE

Published by
IJCIH & Pratyaksh Medicare LLP www.ijcih.com

Reference Score of Medicine Ball Put Test among Collegiate Students: A Protocol Development

Reshma Parihar[1], Joydip Saha[2]

[1]Student, Maharishi Markandeshwar Institute of Physiotherapy & Rehabilitation, MM (DU), Mullana, Ambala,
[2]Assistant Professor, Maharishi Markandeshwar Institute of Physiotherapy & Rehabilitation, MM(DU), Mullana, Ambala

Abstract

Introduction: Upper-body power & strength is highly desirable fitness component for many skilled & techniques required sports like Basketball, Volley ball, Tennis & Gymnastics. Upper body power & strength is very crucial for optimum performance in overhead activities which results in several musculoskeletal injuries if not trained properly and Medicine Ball Put Test (MBPT) will give a normal reference value to detect any deviation in it and trained accordingly to prevent injuries. However, a low cost, easy to administer field test of upper body power in the college going students is needed because it has direct value for achieving an accurate, specific assessment of upper body function.

Aim of the study: The objective of the study is to develop normative upper body power & strength data using MBPT.

Methodology: From the literature search, a protocol will be developed to find out the normative data for MBPT among collegiate students. A sample of 135 young collegiate students will be included. Multiple medicine ball will be used and with the help of measuring tape the distance will be measured from the wall to where it land. 3 attempts will be given with 2 minute interval.

Discussion: The normative data for MBPT among collegiate students population is not available so far. Previously it was done among army, antiterrorism soldiers and male population. In order to confirm that, a study protocol will be developed to find out the normative data. Appropriate methodology has been identified in order to confirm the feasibility of methodology this study will be done. The difference between present results & those of similar available in the literature in this field emphasize the significant role of using normative data specific to particular population in research.

Keywords: *Fitness component, Medicine ball put, Muscle strength, Upper- body power.*

IJCIH
Converging Healthcare & Technology

INTERNATIONAL JOURNAL OF CONVERGENCE IN HEALTHCARE

Published by
IJCIH & Pratyaksh Medicare LLP www.ijcih.com

Effect of Lumbar Flexibility on Isokinetic Quadriceps Strength: A Protocol Development Study

Abhishek Kori[1], Joydip Saha[2]

[1]Post Graduate student (Sports) MMIPR, MM (DU), Mullana, Ambala, [2]Asst. Professor, MMIPR, MM (DU), Mullana, Ambala

Abstract

Background: The isokinetic strength of quadriceps muscles is the significant health concerns in adults. Despite the proven benefits and relation of isokinetic strength of quadriceps on lumbar flexibility, most adults globally do not meet the flexible lumbar and maintain isokinetic strength of quadriceps. The proposed systematic review is the review of the factors and will provide information on the correlation associated with isokinetic strength of quadriceps and lumbar flexibility.

Methodology: Study participants are healthy adults. The inclusion and exclusion criteria are: 194 subjects with age 18 to 25 years and normal BMI (18.5-24.9) are included for the study and subjects are unable to follow commands and have presence of musculoskeletal pathology are excluded. The lumbar flexibility is measured with Schober's test and the isokinetic strength of the quadriceps is measured with isokinetic dynamometer.

Discussion: The results of this study indicate that engaging in effective strengthening exercises significantly enhances lumbar flexibility and can influence the low back pain. However, there is a need for enhanced quality in research within this domain, particularly in the identification of the myokinetic chain for lumbar and quadriceps muscles. Limited evidence exists for both younger and older populations, and there is a lack of consensus regarding appropriate outcome measures. Future research is imperative to identify and assess to gain a deeper understanding of the rehabilitation needs for individuals with compromised lumbar flexibility and quadriceps strength.

Keywords: *Quadriceps muscles, Low back pain, Muscle strength, Back Muscles.*

IJCIH
Converging Healthcare & Technology

INTERNATIONAL JOURNAL OF CONVERGENCE IN HEALTHCARE

Published by
IJCIH & Pratyaksh Medicare LLP www.ijcih.com

Scoliosis: Review of Diagnosis and Treatment

Ashutosh Kumar[1], Alok Kumar[2], Pooja Sharma[3]

[1]Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India, [2]Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India, [3]Associate Professor, Department of Physiotherapy, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India

Abstract

Scoliosis is a spinal deformity consisting of lateral curvature and rotation of the vertebrae. The causes of scoliosis vary and are classified broadly as congenital, neuromuscular, syndrome-related, idiopathic and spinal curvature due to secondary reasons. The majority of scoliosis cases encountered by the general practitioner will be idiopathic. The natural history relates to the etiology and age at presentation, and usually dictates the treatment. However, it is the patient's history, physical examination and radiographs that are critical in the initial evaluation of scoliosis, and in determining which patients need additional considerations. Scoliosis with a primary diagnosis (nonidiopathic) must be recognized by the physician to identify the causes, which may require intervention. Patients with congenital scoliosis must be evaluated for cardiac and renal abnormalities. School screening for scoliosis is controversial and is falling out of favour. The treatment for idiopathic scoliosis is based on age, curve magnitude and risk of progression, and includes observation, orthotic management and surgical correction with fusion. A child should be referred to a specialist if the curve is greater than 10° in a patient younger than 10 years of age, is greater than 20° in a patient 10 year of age or older, has atypical features or is associated with back pain or neurological abnormalities.

There is major difference between scoliosis and scoliotic list: Scoliotic list is acknowledged as a non-structural scoliosis secondary to nerve root irritation. Therefore, once the offending painful stimulus is removed, sciatic scoliotic list should be improved. Typically, for scoliosis to be considered, there should be at least 10° of spinal angulation on the posterior-anterior radiograph associated with vertebral rotation (1). The causes of scoliosis vary and are classified broadly as congenital, neuromuscular, syndrome-related, idiopathic and spinal curvature due to secondary reasons. Congenital scoliosis is due to a vertebral abnormality causing the mechanical deviation of the normal spinal alignment. Scoliosis can be due to neurological conditions (eg, cerebral palsy or paralysis), muscular abnormalities (eg, Duchenne muscular dystrophy) or other syndromes (eg, Marfan syndrome and neurofibromatosis). Occasionally, significant lateral deviation of the spine can occur with little or no rotation of the spine and without bony abnormalities. In these cases, the 'scoliosis' can be the result of pain, spinal cord abnormalities, tumours (both intraspinal and extraspinal) and infection. The majority of scoliosis cases encountered by the general practitioner will be without an obvious cause (idiopathic), and will be the main focus of the present review. The natural history relates to the etiology and age at presentation, and usually dictates the treatment. However, it is the patient's history, physical examination and radiographs that are critical in the initial evaluation of scoliosis and in determining which patients need additional evaluation and consideration.

Keywords: *Spinal deformity, idiopathic, 10° of spinal angulation, mechanical deviations.*

IJCIH
Converging Healthcare & Technology

INTERNATIONAL JOURNAL OF CONVERGENCE IN HEALTHCARE

Published by
IJCIH & Pratyaksh Medicare LLP www.ijcih.com

A Comprehensive Review of Hand Robotics in Spinal Cord Injury Rehabilitation

Manya[1], Kirti Chhabra[2]

[1]UG Student, MMIPR, Maharishi Markandeshwar (Deemed to be University), Mullana-Ambala, [2]Assistant Professor, MMIPR, Maharishi Markandeshwar (Deemed to be University), Mullana- Ambala

Abstract

Introduction: Hand control is frequently compromised by a cervical spinal cord injury, making it difficult for the patient to grasp and handle objects. This can have a detrimental effect on the patient's independence and quality of life. For those who have suffered a spinal cord injury to be independent, hand function must be restored. It is believed that rehabilitation efforts should focus primarily on hand function loss following severe spinal cord injury (SCI). In order to improve diminished hand strength and dexterity, passive and active assistive devices are being utilized constantly often. The field of soft robotics is an evolving field that blends lightweight components with traditional robotics concepts to potentially create an entirely novel type of active assistive technology. Customizable and portable structures enable interaction between humans and robots through soft robotic devices that are assistive. This review is aimed at highlighting the role of hand robotics in spinal cord injury rehabilitation to enhance the activities of daily living for people who have spinal cord injury-related hand limitations.

Methodology: To construct this review article, extensive research was carried out on various databases like: Pubmed, Google Scholar, ResearchGate etc. Researches done in the last 10 years only were included in the study.

Result & Conclusion: With this review we want to conclude that hand robotics work as an efficient means to support hand function in people who have had paralysis of the upper limbs due to spinal cord injuries

Keywords: *Hand robotics, Spinal cord injury, Rehabilitation*

IJCIH
Converging Healthcare & Technology

INTERNATIONAL JOURNAL OF CONVERGENCE IN HEALTHCARE

Published by
IJCIH & Pratyaksh Medicare LLP www.ijcih.com

Role of Diaphragmatic Pacing in Cervical Spine Injury: A Review

Ridhi[1], Neha Kashyap[2]

[1]UG Student, MMIPR, Maharishi Markandeshwar (Deemed to be University), Mullana, Ambala, [2]Assistant Professor, MMIPR, Maharishi Markandeshwar (Deemed to be University), Mullana, Ambala

Abstract

Introduction: With the frequency of recurrent hospitalizations and an ever-growing cost burden, respiratory failure and chronic ventilator reliance in tetraplegics following cervical spine injuries pose a major obstacle in patient rehabilitation. Higher cervical spine injuries require prolonged mechanical ventilation with tracheostomy which favours nosocomial pneumonia and thus complicates rehabilitation process further. Diaphragmatic pacing with electrical stimulation of the

phrenic nerve by an implantable device to support respiratory system is an established treatment for central hypoventilation syndrome. Diaphragmatic pacing is aimed at weaning mechanical ventilation and restoring normal respiratory mechanics. This review is aimed at highlighting the role of diaphragmatic pacing in cervical spine injury patients in improving their quality of life by decreasing their dependence on mechanical ventilators.

Methodology: To construct this review article, extensive research was carried out on various databases like Ovid, Pubmed, Google Scholar, Medline, ResearchGate etc. Researches done in last 10 years only were included in the study.

Result & Conclusion: With this review we want to conclude that diaphragmatic pacing serves as an effective tool in weaning off of selected patients from mechanical ventilator and improving their quality of life but still there is a dearth of more researches and clinical trials on this subject.

Keywords: *cervical spine injury, diaphragmatic pacing, spinal cord injury.*

IJCIH
Converging Healthcare & Technology

INTERNATIONAL JOURNAL OF CONVERGENCE IN HEALTHCARE

Published by
IJCIH & Pratyaksh Medicare LLP
www.ijcih.com

Efficacy of Plyometric Warm Up Exercise on Aerobic Capacity and Anaerobic Capacity in Palestrato Population: A Protocol Development Study

Deeksha Pokhrel[1], Joydip Saha[2]

[1]Post Graduate Student (Sports), MMIPR, MMDU, Mullana, [2]Assistant Professor, MMIPR, BPT, MPT (Sports)

Abstract

Background: Plyometric exercises involve rapid muscle stretching followed by quick contractions, utilizing the stretch-shortening cycle for maximum force in minimal time. While historically considered risky for the youth, recent findings from the National Strength and Conditioning Association challenge the need for a specific strength level before engaging in plyometric training, highlighting a lack of support from current research or observations of daily activities. Recognizing that various activities and sports involve diverse energy systems (aerobic and anaerobic), it is recommended to conduct an energy systems analysis before adding any activity to a training program.

Methodology: To assess the aerobic and anaerobic capacities of regular gym-goers through pre and post evaluations, incorporating the 20m shuttle run test, abdomen curls, squat thrust, and push-up tests. After an initial evaluation, participants undergo a 4-week plyometric protocol based on athlete type, foot contacts, and the ammortization phase. Post-evaluations are then conducted, and the gathered data will be analyzed to identify significant changes in aerobic and anaerobic capacities among the 30 participants aged 18 to 25 in good health. Exclusion criteria apply to those with abnormal BMI or musculoskeletal/cardiovascular issues.

Discussion: Recent studies have explored its impact on VO2max and aerobic capacities, but a comprehensive understanding of the relationship between plyometric exercise and activities combining both aerobic and anaerobic elements is absent in previous research. This research seeks to bridge this gap by thoroughly examining the effectiveness of plyometrics across these capacities, offering valuable insights into overlooked aspects of plyometric effects on strength athletes.

Keywords: *Plyometric, Body mass index, Aerobic capacity, Oxygen consumption.*

IJCIH
Converging Healthcare & Technology

International Journal of Convergence in Healthcare

Published by
IJCIH & Pratyaksh Medicare LLP
www.ijcih.com

Effect of Modified PNF Exercises on Upper Limb Strength and Function in Breast Cancer Survivors: A Case Series

Ujjwal Kumari[1], Suman Mehra[2], Ashok Chauhan[3], Ritu[4]

[1]PG Student, College of physiotherapy, Pt B.D. Sharma UHS, Rohtak India, [2]Assistant Professor, College of physiotherapy, Pt B.D. Sharma UHS, Rohtak India, [3]Senior Professor Department of Radiation Oncology, Pt B.D. Sharma UHS, Rohtak India, [4]PG Student, College of physiotherapy, Pt B.D. Sharma UHS, Rohtak India

Abstract

Background**:** Breast cancer is the most common malignancy that affects women world-wide and one of the major cause for cancer related deaths. Breast cancer treatment induced variety of physical impairments including reduced flexibility, strength, endurance, lymphedema, pain and reduction in overall functionality.

Methodology: There were 5- diagnosed cases of breast cancer who had completed their active treatment were included in this case series. The intervention protocol included modified PNF exercises for upper limb with variable weights and shoulder girdle exercises for 3 times in a week for 4 weeks. The outcome were upper limb strength and disability which were measured pre and post intervention using arm curl field test and DASH questionnaire.

Results: Significant improvement in upper limb strength and reduced in disability were found in all 5 subjects.

Conclusion: Modified PNF exercises and shoulder girdle exercises are effective in improving upper limb strength, function and reducing disability in breast cancer survivors.

Keywords: *PNF exercises, Breast cancer, upper limb strength, Disability.*

Article Submissions

International Journal of Convergence in Health Care has commenced publication in 2020. IJCIH will be published Bi-Annually i.e. two times in year.

Purpose & Scope: The International Journal of Convergence In Health care (IJCIH)is a double blind peer-reviewed, open-access journal focusing on original clinical and pre clinical research, systemic and perspective reviews, meta-analysis, pilot studies and case reports, every paper accepted by peers has been completed with a complete technical edit to make it highly accessible to the international medical community. The journal is also Google Index with website wwww.ijcih.com

Submitting Papers:

As part of the submission process, authors are required to check off their submission's compliance with all of the following items, and submissions may be returned to authors that do not adhere to these guidelines.

- The submission has not been previously published, nor is it before another journal for consideration (or an explanation has been provided in Comments to the Editor).
- The submission file is in Open Office, Microsoft Word, or RTF document file format.
- Where available, URLs for the references have been provided.
- The text is single-spaced; uses a 12-point font; employs italics, rather than underlining (except with URL addresses); and all illustrations, figures, and tables are placed within the text at the appropriate points, rather than at the end.
- The text adheres to the stylistic and bibliographic requirements outlined in the Author Guidelines.

For Further Assistant:

Our e-mail: editor@ijcih.com

website: www.ijcih.com

Our Contact info:

International Journal of Convergence in Healthcare

PRATYAKSH MEDICAL CARE LLP, A-7, 2nd Floor, Sector-10, Noida-201301 (Uttar Pradesh)

Mob: +91 9999387423 | Phone: 0120-4204291 | e-mail: editor@ijcih.com | website: www.ijcih.com

IJCIH

Converging Healthcare & Technology

Call for Subscriptions

The **International Journal of Convergence in Healthcare** is a double blind, peer-reviewed, open-access journal which is published biannually focusing on original clinical and preclinical research, systemic and perspective reviews, meta-analysis, pilot studies and case reports, every paper accepted by peers has been completed with a complete technical edit to make it highly accessible to the international medical community. The journal is of special interest to the authors of countries where the first language is not English. **The journal has been assigned ISSN 2583-2107 (Online Version).**

The Journal is covered by **Google Scholar, Research Gate, CROSSREF, ROAD (Global Open Access Portal (GOAP) Developed by UNESCO**.

Website: www.ijcih.com

Journal Title

International Journal of Convergence in Healthcare

Print Only: INR 3500/–

IJCIH

Converging Healthcare & Technology

Bank Details	
Name of account	PRATYAKSH MEDICAL CARE LLP
Bank	AXIS Bank
Branch	Sector-25, Noida-201301
Account number	920020068450651
Type of Account	Current Account
MICR Code	110211297
RTGS/NEFT/IFSC Code (Please quote reference number)	UTIB0004257

Send all payment to

PRATYAKSH MEDICAL CARE LLP
A-7, 2ND FLOOR, SECTOR-10, NOIDA-201301 (UTTAR PRADESH)
Phone: 0120-4204291, Mob: +91 9999387423
e-mail: editor@ijcih.com | website: www.ijcih.com

Published at

PRATYAKSH MEDICAL CARE LLP, A-7, 2nd Floor, Sector-10, Noida-201301 (Uttar Pradesh)
Mobile No.: +91 999387423, +91 9818782646
Website: www.ijcih.com | E-mail id: editor@ijcih.com

Printed

HT Media Limited, Plot No. 8,Ecotech-II, Udyog Vihar, Greater Noida, Uttar Pradesh 201306