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RESEARCH ARTICLE

SCIATICA, TROCHANTRIC BURSITIS AND FALLS –PHYSIOTHERAPY

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ABSTRACT

Occupational hazards with sustained sitting postures among young adults can lead to numerous known musculoskeletal disorders were reported, added with obesity leading to neurological dysfunctions such as disturbances in balance, falls can lead to larger disability at an early age reducing these subjects standard of living. This research where instead of symptom based, clinical condition based therapy, subjects problem were functionally analyzed and treated with needed physiotherapy techniques. For 3 months the results were scientifically discussed with evidence. Though in theory patient centric therapy in to be used were emphasized but a lesser applied concept, needs further explorative evidence, a key component of this research.

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INTRODUCTION

Chronic lowback ache (CLBA) can lead to multiple dysfunctions. Along with obesity long hours of continuous sitting posture further result in musculoskeletal, and neurological ailments leading to pain disability, falls decreased balance, limited mobility, early degenerative changes leading to a reduction in their living standard Occupational hazards resulting in multiple musculoskeletal disorders such as disc lesion OA (Osteoarthrosis) Knee with being an endomorph can be adding more negative impact on a subjects well being. If inadequate rehabilitation provided in these clinical subjects they may have to either undergo surgical procedures or the percentage of disability can make them more dependent in their real life situations. Lowback pain the number one debilitating global condition in 2010 and contributed to 10.7% to the total number of years lived with disability (Vos *et al.,* 2012). Lumbar radicular pain and sciatica have poorer prognosis than non-specific (Low back ache) LBA and can cause prolonged work disability (Konstantinan *et al.,* 2015). Life style risk factors were suggested for lumbar radicular pain and sciatica in a (Systematic Review) SR by (Shiri *et al.,* 2007).

AIMS & OBJECTIVES OF THIS RESEARCH were to analyse the role of physiotherapy in sciatica, trochanteric bursitis and falls and to evaluate the role of obesity on falls and sciatica.

BACKGROUND INFORMATION: This research where 36 year old female endomorph, employed for more than 15 years with sedentary long hours of sitting, developing chronic LBA with radicular symptoms, complaints of Paraesthetic foot, falls and balance dysfunctions.

MATERIALS AND METHODOLOGY

This original research where, a 32 years old female with chronic LBA, sciatica balance disturbances, lateral hip pain and giving history of falls was treated for three months period with weekly thrice frequency from December 2019 till February 2020, using patient centric pre and post Oswestry score, (Visual analogue scale) VAS, (Body mass index) BMI,

(waist circumference) WC were recorded, tabulated, analyzed and discussed with due research evidence. Her clinical prognosis were discussed with due evidences, Patient centric exercises were lesser researched this presentation gets more significant. Whereas the usual practice is just to apply techniques to the clinical condition. BMI - 32 Kg/m2 Waist Circumference - 106 Cm. Female employed in (Information and Technology) IT sector, with continuous sitting posture for 6 hours/ daily for more than 15 years. Since the last few years C/O frequent falls, inability to sleep on right side, NMRI has revealed multiple degenerative changes of cervical and lumbar spine as on May 2018. Lowback pain with radicular symptoms down right foot was treated elsewhere with (Lumbo sacral) LS belt, a course of NSAID, pelvic traction, IFT (Interferential therapy). She was treated for three months period of thrice a week frequency using specific exercises as only intervention.

ON EXAMINATION

Gait: Antalgic, waddling gait, unstable walking.

Balance: decreased weight bearing on lower extremities, poor balance in standing and walking.

Motor Power: Hip & Knee both-3/5, right > left weaker.

Upper Extremity: full with nil deficit cervical and lumbar spine showing degenerative changes in NMRI. Right hamstring, tendo achilles tightness, Early OA knee (Right) changes, Thoracic kyphosis, Obliterated lumbar lordosis, Decreases single leg stance, Paresthetic right foot, Painful lumbar region with radicular symptoms downright leg, Occupation where she was sitting continuously for more than 8 hours/ daily for more than 10 years, Transfer independent, Falls with increasing frequency during the last one year, She was using lumbo sacral belt for confidence throughout the day for >2 years

CLINICAL PROGNOSIS AND RESULTS: Her confidence level has improved with weaning from using LS belt, Has started driving two wheeler for a distance more than 10 kilometre, Her pain has came down from VAS 8/10 to 3/10, An improved Oswestry lowback disability score from 48 to 18, Her obesity has shown an adequate reduction. Functional activities for self care and she has started home programme with few set of exercises and regular walking for 15-20 minutes daily, Her balance in standing has improved along with no H/o fall during this period.

Table of results pre and post on bmi, wc, oswestry, vas, falls efficacy scale

	BMI	WC	Oswestry scale	VAS	Falls Efficacy Scale
PRE	32	106	48	8	31
POST	30	98	18	3	13
PROGNOSIS	↓6%	↓7 %	↓80 %	↓62 %	↓58

TREATMENT GIVEN

- Gradual progression of core strengthening exercises in supine, side prone and sitting postures.
- Physioball were used for closed kinematic and Proprioceptive exercises
- Resistance band were used for both upper and lower extremities in high sitting posture.

DISCUSSION

Hypothetical research questions from this research were

Falls, balance, how connected with cervical and lumbar disc lesion?: Female, elders, those with cervical, lumbar disc lesion, obese subjects were at higher risk to have falls, as evidenced by below research evidences. Kannus *et al.,* 2007 in Finland among geriatric subjects have recorded number of falls induced cervical spine injuries with an increasing trend. Shinoda *et al.,* 2003, women were more hospitalized than young men. Kannus *et al.,* 2005 have recorded falls induced deaths among elderly. Tinetti *et al.,* 2003 have recorded falls were higher among elderly women than elderly men. Kannus *et al.,* 2005 recorded strength and balance training Sherrington *et al.,* 2008 to have clearly reduced the risk of falling. Chen *et al.,* 2016 where external causes of spinal cord injury due to fall were analyzed using ICD - 10 CM among 6,408 subjects with traumatic SCI, falls, tripping, stumbling from same level were reported as common cause of SCI among 20%. Grimm *et al.,* 2011 with higher risk of life threatening complications, longer hospital stay and cost of care among SCI. Fjelstad *et al.,* 2008 recorded analyzing obesity on falls with low HR, QOL among middle aged adults. Rosmond and Bjorntorp *et al.,* 2000 have recorded negative health related QOL among middle aged obese subjects and decreased functional outcome Friedman *et al.,* 2001. A meta analysis prospective studies recorded that with any joint pain likely to have falls with 40-71% (Deandra *et al.,* 2010) and 60-805 of pain is associated with recurrent falls among elders Stubbs *et al.,* 2014 from a (Systematic Review) SR. Leville *et al.,* 2002 have 1.5 fold increased risk for falls among elders with MSD. Postural response to loss of balance stiffening of trunk, inadequate hip joints usage (Henery *et al.,* 2006) can be a risk for fall. Chanpagne *et al.,* 2008 have recorded that lowback pain patients with higher fall self efficacy scale than those without back pain.

Sciatica lateral hip pain clinically inter related?: The mechanism of lumbar radicular pain and sciatica may be pro inflammatory mediators from excess adipose tissue (Berg *et al.,* 2005). Obese subjects recovery pattern was slow, and can delay healing of disc injury among sciatica subjects (Rihn *et al.,* 2013) and have lesser improvement in their back related disability than non-obese patients either surgically or conservatively treated (Merldith *et al.,* 2010)with recurrent disc herniation. Karppinen *et al.,* 2005 in a 3 year trial recorded lumbar artery occlusion among obese subjects as a stringers predictor with sciatica impairment of nutrition, Linder Berg *et al.,* 2007 in a SR have recorded that there is no evidence in favour of physical therapy to inactive treatments, manual therapy, bed rest, medication of which is superior to the other. Lynn *et al.,* 2015 among 6,841 women above 65 years, subjects with back pain had 50% increased risk of recurrent falls.

How much physiotherapy can be effective in this research subject?: This research subject having chronic LBA, degenerative conditions of both cervical and lumbar spine may have decrease in proprioception which may predispose for falls along with OA knee changes and Paraesthetic right foot. Subject with sitting history of prolonged period of more than 6-8 hours for more than 10 years as part of their sedentary occupation were likely to develop early musculoskeletal and

neurological dysfunction including sciatica. Chronic sciatica can lead to weakness and wasting of lower extremity muscles and soft tissues. These changes along with chronic low back ache and being an endomorph the subject was likely to develop lateral hip pain with weak hip joint muscles. As shown in the table of results where reduction pain in VAS scale by 62% may be due to strengthening exercises of various structures done. Linder Berg *et al.,* 2012, Rosas *et al.,* 2015 have recorded in weight loss intervention among women. Gardener *et al.,* 2000 on exercises for falls prevention among 4933 men and women out of 11 trails, 5 trials were effective with strength and balance training (Katz *et al.,* 2000) have recorded an inverse relationship with obesity on QOL among middle aged subjects. Obesity has shown to positively correlate with impaired postural balance in less than 40 years subjects and weight reduction in 3 weeks with balance (Teasdale *et al.,* 2007) training were recorded (Maffleuti *et al.,* 2005) have recorded postural stability improves among obese subjects with weight reduction and specific balance training. Core strengthening exercises were advocated in this subject which were evidenced in spinal disc lesion and sciatica hence an improved subjective Oswestry lowback functional scale by 80% can be supported with evidences enclosed. Reduction in obesity as shown in table of results by 7% decrease in waist circumference along with Proprioceptive exercises used as part of therapy were responsible for improved confidence, balance and no falls. Jeong *et al.,* 2016 have recorded using lumbar segmental stabilization exercises with mobilization techniques for the sciatic nerves were to be used among LBA with sciatica. Laha *et al.,* 2018 in a RCT used hip abductors and extensors strengthening and neural mobilization 33 subjects with piriformis syndrome recorded with Pyka *et al.,* 1994 in a 12 week resisted exercise training found hypertrophy in older adults.

Chandler *et al.,* 1998 have recorded functional activity decline can be reversed with exercises using resisted means of exercises Janon and Beneciuk *et al.,* 2009 have recorded neural mobilization to be effective in chronic pain. Koes *et al.,* 2007 have recorded diagnosis of sciatica is based on history, physical examination, passive treatments have been replaced by more active treatments 80% of subjects with good prognosis in a period of 6-8 weeks with conservative care. Obesity and sciatica in a meta-analysis by (Shiri *et al.,* 2014) have recorded obesity as a risk factor for sciatica among both gender. Nerve mobilization techniques were recently used to adjust radiating pain related to disc disease and for improving Sciatic nerve mobility in particular decrease mechano sensitivity of the nervous system and heighten compliance of nervous tissues, relieving LBA (Harringe *et al.,* 2007). Priral *et al.,* 2005 noted that functional weakening and sciatic nerve pain may trigger hamstring flexibility, which may affect radiating pain. Thus with hamstring improving with mobilization reducing stimulation of sciatica nerves (Cha et al, 2014). Cleland *et al.,* 2006 in a clinical trial has shown slump stretching in sciatica.

CONCLUSION

Chronic LBA, obesity, occupational hazards with long working hours in prolonged continuous static posture can result in musculoskeletal disorders with sciatica which were known and recorded. But this study subject where along with above said orthopaedic ailments, developing falls, decreased balance and paresthetic limb, with neurological impairments can further result in painful restriction of her mobility, self care and quality of life. Based on her problem specific exercises were applied and evaluated, indicating substantial improvement in obesity, pain reduction, level of confidence and an overall improvement in her living standard. While discarding symptom based, condition based selection of therapy, subjects functional problems to be analyzed and suitable physiotherapy techniques to be adopted to maximize their rehabilitation. Further research can be done to evaluate symptom based/ condition based therapy versus problem/ function based therapy on larger sample to validate findings of this study.

REFERENCES

1. Vos T, Flaxman AD, Naghavi M, Lozano R, Michaud C, Ezzati M, Shibuya K, AlMazroa MA, Memish ZA. Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. Lancet. 2012 Dec 15;380(9859):2163-96.
2. Konstantinou, K., Dunn, K. M., Ogollah, R., Vogel, S., Hay, E. M., & ATLAS study research team (2015). Characteristics of patients with low back and leg pain seeking treatment in primary care: baseline results from the ATLAS cohort study. BMC musculoskeletal disorders, 16, 332.
3. Shiri R, Karppinen J, Leino-Arjas P, Solovieva S, Varonen H, Kalso E, Ukkola O, Viikari-Juntura E. Cardiovascular and lifestyle risk factors in lumbar radicular pain or clinically defined sciatica: a systematic review. Eur Spine J. 2007 Dec;16(12):2043-54.
4. Kannus, Mika Palvanen, SeppoNiemi, JariParkkari. Alarming rise in the number and incidence of fall-induced cervical spine injuries among older adults.JGerontol A BiolSci Med Sci. 2007 Feb;62(2):180-3.
5. Shinoda-Tagawa, D E Clark. Trends in hospitalization after injury: older women are displacing young men. Injury Prevention 2003-9-214-219
6. Kannus, JariParkkari. . SeppoNiemi, and Mika Palvanert. Fall-Induced Deaths Among Elderly People. Am J Public Health 2005 March: 95(3): 422-124.
7. Tinetti ME Preventing falls in elderly persons. N Engl J Med. 2003;348:42-9. 5.
8. Sherrington, C., Whitney, J.C., Lord, S.R., Herbert, R.D., Cumming, R.G., &Close,J.CT. (2008). Effective Exercise for the Prevention of Falls: A Systematic Review and Meta-Analysis. Journal of the American Geriatrics Society, 56, 2234-43.
9. Chen, Ying Tang Victoria Allen and Michael J DeVivo. Fall-induced spinal cord injury: External causes and implications for prevention. J Spinal Cord Med. January, 2016;39(1): 24-31.7
10. Grimm D, Mion LC Falls resulting in traumatic injury among older adults nursing care issues. AACN Advanced Critical Care 2011;22(2):161-8.
11. Fjeldstad, C., Fjeldstad, A. S., Acree, L. S., Nickel, K. J., & Gardner, A. W. (2008). The influence of obesity on falls and quality of life. Dynamic medicine : DM, 7, 4.
12. Rosmond R. Bjorntorp P. Quality of life, overweight, and body fat distribution in middle-aged men. Behav Med. 2000;26-90-94.

13. Freidmann JM, Elasy T. Jensen GL. The relationship Between Body Mass Index and Self-Reported Functional Limitation Among Older Adults: A Gender Difference. J Am Geriatr Soc. 2001;49:398-403
14. Lindberg, N. M., Stevens, V. J. Vega-Lopez, S. Kauffman, T. L. Calderon, M. R. Cervantes, M. A. (2012). A weight-loss intervention program designed for Mexican-American women: Cultural adaptations and results. Journal of Immigrant and Minority Health, 14, 1030-1039.
15. Rosas, LG, Thiyagarajan, S., Goldstein, B. A., Drieling, R. L. Romero, P. P. Ma, J.. Stafford, R. S. (2015). The effectiveness of two cotruunity-based weight loss strategies among obese, low-income US Latinos. Journal of the Academy of Nutrition and Dietetics, 115,537-550
16. Gardner, M Robertson, and A Campbell. Exercise in preventing falls and fall related injuries in older people: a review of randomised controlled trials. Br J Sports Med. 2000 Feb; 34(1): 7-17.
17. Katz, Colleen A McHorney, and Richard L Atkinson. Impact of Obesity on Health-related Quality of Life in Patients with Chronic Illness. J Gen Intern Med. 2000 Nov; 15(11): 789-796.
18. Teasdale N, Hue O, Marcotte J, Berrigan F, Simonau M, Doré J, Marceau P, Marceau S, Tremblay A. Reducing weight increases postural stability in obese and morbid obese men. Int J Obes (Lond) 2007;31:153–160.
19. Maffiuletti NA, Agosti F, Proietti M, Riva D, Resnik M, Lafortuna CL, Sartorio A. Postural instability of extremely obese individuals improves after a body weight reduction program entailing specific balance training. J Endocrinol Invest. 2005;28:2–7.
20. Berg AH, Scherer PE. Adipose tissue, inflammation, and cardiovascular disease. Circ Res. 2005 May 13;96(9):939-49.
21. Rihn, J. A., Kurd, M., Hilibrand, A. S., Lurie, J., Zhao, W., Albert, T., & Weinstein, J. (2013). The influence of obesity on the outcome of treatment of lumbar disc herniation: analysis of the Spine Patient Outcomes Research Trial (SPORT). The Journal of bone and joint surgery. American volume, 95(1), 1–8.
22. Meredith DS, Huang RC, Nguyen J, Lyman S. Obesity increases the risk of recurrent herniated nucleus pulposus after lumbar microdiscectomy. Spine J. 2010;10:575–80.
23. Karppinen J, Mikkonen P, Kurunlahti M, Tervonen O, Paldanius M, Vasari P, Saikku P, Vanharanta H. Chronic Chlamydia pneumoniae infection increases the risk of occlusion of lumbar segmental arteries of patients with sciatica: a 3-year follow-up study. Spine (Phila Pa 1976). 2003 Aug 1;28(15):E284-9.
24. Lynn AM, Lai LJ, Lin MH, Chen TJ, Hwang SJ, Wang PH. Pattern of Ambulatory Care Visits to Obstetrician-Gynecologists in Taiwan: A Nationwide Analysis. Int J Environ Res Public Health. 2015 Jun 16;12(6):6832-41.
25. Deandrea S, Lucenteforte E, Bravi F, Foschi R, La Vecchia C, Negri E. Risk factors for falls in community-dwelling older people: a systematic review and meta-analysis. Epidemiology. 2010 Sep;21(5):658-68.
26. Leveille , S. G. , Bean , J. , Bandeen-Roche , K. , Jones , R. , Hochberg , M. , &Guralnik , J. M.(2002). Musculoskeletal pain and risk for falls in older disabled women living in the community . Journal of the American Geriatrics Society, 50, 671 – 678 .
27. Henry SM, Hitt JR, Jones SL, Bunn JY. Decreased limits of stability in response to postural perturbations in subjects with low back pain. ClinBiomech (Bristol, Avon) 2006;21:881–892.
28. Champagne A, Descarreaux M, Lafond D. Back and hip extensor muscles fatigue in healthy subjects: task-dependency effect of two variants of the Sorensen test. Eur Spine J. 2008;17(12):1721–6. doi: 10.1007/s00586-008-0782-y.
29. Jeong, U. C., Kim, C. Y., Park, Y. H., Hwang-Bo, G., & Nam, C. W. (2016). The effects of self-mobilization techniques for the sciatic nerves on physical functions and health of low back pain patients with lower limb radiating pain. Journal of physical therapy science, 28(1), 46–50.
30. Laha, Bibhuti Sarkar, PravinKum. Efficacy of Hip Abductor and Extensor Strengthening on Pain, Strength and Lower Extremity Function in PiriformisSyndrome: A Randomized Clinical Trial International Journal of Health Sciences and Research. Vol.8; Issue: 9, September 2018
31. Pyka G.et al. Muscle strength and fibre adaptation to a yearlong recisance training programme in elderly men and women. Gerentological society of America. 1994:49(1):M22-M27
32. Chandler M. J. et al. Is lower extremity strength gain associated with improvement in physical performance and disability in frail, community dwelling elders? Arch Phys Med rehabilitation 1998, 79: 24-30.
33. Jason M. Beneciuk et al. Effects of upper extremity in neural mobilization on thermal pain sensitivity: A sham controlled study in asymptomatic participants. Journal of Orthopaedic & Sports Physical Therapy. JOSPT. 2009, 39(6):428-438
34. Koes, professor, M W van Tulder, professor of health technology assessment, and WC Peul, neurosurgeon. Diagnosis and treatment of sciatica. BMJ. 2007 Jun 23; 334(7607): 1313-1317.
35. Shiri, Tea Lallukka, JaroKarppinen, and EiraViikari-Juntura. Obesity as a Risk Factor for Sciatica: A Meta-Analysis. American Journal of Epidemiology, 2014 Vol. 179, No.8.

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