



PREVALENCE OF POSTERIOR TRUNK AND HAMSTRING MUSCLE TIGHTNESS IN YOUNG FEMALES WEARING TIGHT JEANS

Physiotherapy

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ABSTRACT

BACKGROUND: Recent advances in technology and social media has created an obsessive mindset about looks and physical attractiveness has become of high importance, especially in youth, with the latest trend being skinny jeans. This study aims to find the preponderance of posterior trunk and hamstring muscle tightness in collegiate females who often patronize this trend.

METHODS: In this study, 210 collegiate females were included. The standard sit and reach test was administered to each subject. Quantitative values for posterior trunk and hamstrings flexibility were ascertained.

RESULTS: 57.14% had flexibility scores graded as needing improvement, 27.14% of the subjects had flexibility scores graded as fair by the ACSM manual. Only about 15.72% of the subjects had normal to excellent flexibility grades.

CONCLUSION: The study reveals the commonness of flexibility issues in young females who often wear skinny jeans.

KEYWORDS:

Skinny jeans, hamstring muscles, posterior trunk muscles, flexibility.

Prevalence Of Posterior Trunk And Hamstring Muscle Tightness In Young Females Wearing Tight Jeans Clothes have been defined by the Oxford English dictionary ⁽¹⁾ as “Items worn to cover the body.” Clothes are also used to protect the body from harm, and worn for decoration as fashion. Clothes have been used to show cultural heritage and are a symbol of status. Clothes are a form of self expression.

Good looks or physical attractiveness is of high importance, and advances in technology and social media has created an obsessive mindset about looks ⁽²⁾ Fashion has now become an integral part of youth ⁽³⁾. In a survey conducted to examine shopping choice behavior of later aged female teens, it was found that making the right choice especially for her clothing is important both from a social affiliation and a social influence position ⁽⁴⁾.

Jeans have remained prominent in both the fashion world and the public awareness for well over a hundred years. Jeans have been a known component of both female and male clothing in the twenty-first century for many reasons but probably mainly for the looks or feel ⁽⁵⁾. Commonly seen in modern times are the habitual use of heels to highlight the hips and increase height, tight waist belts ⁽⁶⁾ and corsets to emphasize a slender waist, and the style of jeans has changed from flared –loose fitting jeans to tight fitting jeans also known as skinny jeans. Following this change has been the feisty group of the college age youth.

However, specialists have suggested that clothing style may have an impact on the health of its users. Clothing styles may affect musculoskeletal composition and bone density ⁽⁷⁾. Specialists have suggested that applying excessive and prolonged pressure on certain areas of the human body could lead to many problems in the cardiovascular systems and visceral organs ⁽⁸⁾. Also, exposure of the human body to pressure by clothes has the tendency to deform muscles, the skeletal system and even the overall body type ^(6,9). Skinny jeans may compress a nerve to the thigh, and this is concordant with human anatomy and physiology ⁽¹⁰⁾. Constricting trousers can squeeze a sensory nerve beneath the hip bone and give the subject a tingling and burning sensation known as paraesthesias ^(6,8).

Having this background, this study aims to understand the danger of habitually wearing tightly fitting pants in relation to damage of the musculoskeletal system and the movement of the posterior trunk and thighs for the purpose of providing basic information about the proper habits in wearing clothes to prevent future incidence of pain and complications in the musculoskeletal system ⁽¹¹⁾.

LITERATURE REVIEW

Men and women who shoehorn themselves into tight jeans, battle to button their trousers or knot their neckties too tightly might unknowingly suffer nerve damage, digestive disturbances and even

potentially dangerous blood clots. They are victims of fashion’s hidden health hazards. Even some favorite accessories, like waist-cinching belts, can compress delicate nerves in abdomen or constrain breathing and deprive heart and brain of needed oxygen ⁽¹²⁾.

Researchers at Korea’s Yonsei University reported in 2011, when they tested 30 computer workers when wearing and not wearing tight neckties concluded that “it is especially important for male workers to select and tie neckties appropriately” to prevent musculoskeletal injuries. This suggests that, too tight neckties might impede proper circulation in severe cases. Tight neckties can also limit neck movement and raise muscle tension in the upper back and neck ⁽⁹⁾.

In a 2003 study of 40 men, half with glaucoma, three minutes with tightened neck tie raised the intraocular pressure among the majority of those with and without the disease. The lead researcher, Robert Ritch, a glaucoma specialist at New York Eye and Ear infirmary, maintained in the study, that the transient rise in pressure readings could affect the diagnosis and management of glaucoma. However, several prominent glaucoma specialists said the study failed to establish that transient high pressure from the tightened ties could cause glaucoma ⁽¹³⁾.

Researchers from Injje University Korea, in 2016 suggested that wearing a waist belt frequently for a long time, can cause back pain and that this pain is due to imbalance between forces of muscles around the abdomen and waist muscles; the authors also suggested that this should be studied in the future ⁽¹⁴⁾.

A physician Dr M. Parmar in 2003 observed 3 mildly obese young women between the ages of 22 and 35, who had worn tight “low-rise” trousers (also called hip huggers) over the previous 6 to 8 months. All presented with symptoms of tingling or a burning sensation on the lateral aspect of the thigh thigh (bilateral in one case). In all 3 patients, the symptoms resolved after 4 to 6 weeks of avoiding hip huggers and wearing loose fitting dresses ⁽¹⁵⁾.

Meralgia paresthetica, is a neurological disorder characterized by a localized area of paresthesia and numbness on the anterolateral aspect of the thigh. And it has been described in association with various garments and accessories (such as wallets and tight jeans) causing compression of the lateral femoral cutaneous nerve ⁽¹⁵⁾.

Wearing jeans that are too snug may be more complicated than a simple fashion blunder, and women have had their fair share of the tight-pants agonies. Drs K. Weismann and F.G. Larsen from the department of dermatology, Horsholm hospital, Denmark (2006) described the cases of two young girls; one, a 17 year old with a gradually developing dusky red plaque on her right hip with a slight burning and tingling sensation over the area during the last two years after she started to wear jeans with a tight low waistband. The second case was of a healthy 15 year old female readmitted because of a reddish plaque on

her right hip present for about 3 yrs since she started to wear tight jeans with a low waist band all year round. Both cases were suspected to be perianthitis worsened by the tightness of the jeans⁽¹⁰⁾. A gynecological variation of these wardrobe agonies from tight jeans is that it can foster yeast infection, pelvic pain, itching and irritations easily mistaken for sexually transmitted disease. The solution is looser, more comfortable clothing⁽¹²⁾.

Although clothing related pain and dysfunction can affect almost everyone, Dr Orly Avitzur (in 2009) said that women, have a tendency to over look discomfort, for the sake of appearance⁽¹²⁾.

DISCUSSION

This study was designed to determine the prevalence of flexibility problems in people who habitually wear tight fitting skinny jeans. Flexibility of the posterior trunk and hamstring muscles was measured using the sit and reach test procedure. The flexibility is assessed as a direct function of the numerical value measured from the sit and reach test procedure and that numerical value could be interpreted, based on its magnitude, as excellent, very good, good, fair and needs improvement.

210 female subjects participated in the study. Subjects had a mean age of 19.73± 2.71 years, ranging from 16 to 28 years. The BMI of the subjects ranged between 15.15 to 32.46 kg/m². The result of this study showed that the flexibility score from an average of the flexibility scores taken turned out to be two points less than the margin for the category-needs improvement- which could be interpreted as below normal flexibility. On studying the results, 27.14% of the subjects who participated had flexibility scores graded as fair by the ACSM manual⁽¹⁶⁾. 57.14% had flexibility scores graded as needing improvement. Only about 15.72% of the subjects had normal to excellent flexibility grades (see fig 1.1). This indicates that the majority of subjects had posterior trunk and hamstrings flexibility issues. It also means that the majority of subjects need to adopt healthy practices such as regular exercise, and daily stretches to avoid the future complications of long term inflexibility.

The implications of flexibility changes:

Flexibility is the ability to move a joint through its complete range of motion. It is important in athletic performance (e.g., ballet, gymnastics) and in the ability to carry out the activities of daily living. Consequently, maintaining flexibility of all joints facilitates movement; in contrast, when an activity moves the structures of a joint beyond a joint's shortened range of motion, tissue damage can occur⁽¹⁶⁾. Alan Hreljac et.al (2000) reported a controversial relationship between flexibility and injuries in runners. Where some runners who stretched regularly had a higher incidence of injury, and some military recruits with less ankle flexibility were less predisposed to stress fractures⁽¹⁷⁾.

Poor lower-back and hip flexibility may, in conjunction with poor abdominal strength/endurance or other causative factors, contribute to development of muscular low-back pain; however, this hypothesis remains to be substantiated⁽¹⁶⁾. A high body mass index (BMI) was associated with increased neck tension, and the authors speculate that it may be related to poor hamstring length and back stiffness⁽¹⁸⁾. Tightness of the hamstring muscle may lead to postural problems⁽¹⁸⁾.

LIMITATIONS OF THE STUDY

This study did not take into account the trunk to limb length ratio of subjects, physical activity status of subjects and the emotional status of subjects, all of which could have affected the results of the test. The researcher suggests that some of the subjects may not have been comfortable during the test procedure and this might have had an effect on the distance stretched.

METHODOLOGICAL CONSIDERATIONS

This study, used direct observation of the subjects' sit and reach score on a fabricated sit and reach box. Although direct observation and the sit and reach test is a reliable tool, precise conclusions cannot be made as there are factors which may give variations in measurements such as the idea that the sit and reach test is more a measure of hamstrings flexibility than of lower back.

FUTURE SCOPE

Further studies are needed to evaluate other components of fitness that might be affected by this tight jeans trend. The source of the flexibility issues need to be studied and isolated. The prevalence of flexibility issues need to be studied in males and other age groups too. Various

characteristics of skinny jeans need to be studied for their effects on musculoskeletal fitness of an individual.

CONCLUSION

This study has revealed the prevalence of flexibility issues in population of female students who are frequent users of this clothing item. A general state of decreased flexibility has been found. It can be clearly reasoned why many healthcare specialist have taken to the media to try to alert the general public about the health hazards of this clothing item.

The evidence of flexibility issues has highlighted the need for physiotherapists to consider the clothing choices of the patient as part of the musculoskeletal assessment in young females presenting with low back aches and musculoskeletal problems of hip, knee and spine.

APPENDIX A

Table of results:

SR test trial	Mean	Standard deviation	Median	Mode
1st trial score	20.31	8.71	22	22
2nd trial score	22.07	8.57	23	22
3rd trial score	23.34	8.49	25	28
Average score	21.89	8.51	23.16	29
Adjusted actual SR score	-1.06	8.47	0.33	6

Table 1.1: Illustrating the result scores of subjects in the sit and reach (SR) test.

APPENDIX B

Pie chart illustrating results:



Fig 1.1. Pie chart illustrating the overall results from the study.

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