

Effect of 8 Weeks of Hydrotherapy in Reduction of Lumbar Lordosis Men 20-26 Year

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ABSTRACT

One of the most important parts of the spine, lumbar lordosis, which, due to the weight of the upper body and direct contact with the pelvis, is of special importance. The aim of this study was to compare the effects of selected water treatment applications, the amount of pain, and lumbar lordosis male students. 40 people who have angular curved, more than 30 degree, as people with choice, and randomly assigned to two experimental and control groups (control group, n = 20 groups of experimental n = 20), the came. group water treatment for 8 weeks (Three sessions a week) training program under the research conducted by questionnaire, Quebec, back pain and a flexible ruler, the degree of lumbar lordosis was measured. In evaluating the results of the experimental group, the severity of back pain (0/001> p), and lumbar lordosis (0/001> p), was significantly greater in the control group, no significant difference between the pre-and post-observation found. These findings demonstrate the exercises in the water spine, causing pain, and lumbar lordosis is.

KEYWORDS: low back pain, lordosis, spinal strengthening exercises, hydrotherapy exercises

INTRODUCTION

The quality of the human body, of particular importance in human life, it is because the change positive and negative, from the rest of the human condition, will affect. Consequences of incorrect postures, so widespread that, in physical, mental, economic, social that should be considered and investigated. Countless concepts, the human body, there are many interpretations and interpretations of this concept has been carried out, the concept anthropologist, an exclusive trait of the human race, or an indication of phylogeny, is . The same concept to an orthopedic surgeon, meaning the health and integrity of skeletal muscle (1). Lumbar or lordosis, the lumbar spine is meant to increase Bezel. The Lumbar lordosis or arch your spine more forward, abdomen and hips forward, goes backward. In fact, the spine, muscles, protected by a large number, and balance their health, well-being and normality in the spinal cord plays an important role. Muscle imbalance in the leg, the stronger of some weakness or cramps, some of them rise to anomalies in the shape of the spine. The role of the abdominal muscles, hip extensors of the leg joints and large muscle behind the hips, creating a hole in the back too, highlighted more than other muscles in the area. Different factors can increase the intensity of lordosis, the most common ones are 1-the most common cause Lumbar, back and abdominal muscle weakness is 2-larger belly, causing the seal to the back, weight on the front come, and lordosis greater Shvd3-for any reason, the person misses his hip, pelvis when standing on a flat, had to be rotated to the front, side and lumbar lordosis and pelvic tilt, increased 0.4 neuromuscular - Diseases such as muscular dystrophy or polio (poliomyelitis), the seal of the lumbar kyphosis causes a person to maintain their balance, lumbar lordosis, not so much an important part of the spine, lumbar lordosis, which, because of weight of the upper body and directly connected to the pelvis, of particular importance, have. So that any increase or reduction in this arc could affect the balance of the body, and cause various abnormalities in the pelvic and lumbar area. One of the factors that are believed to be in the lumbar-pelvic balance and lumbar lordosis tilt function, the muscles in this area. (2). Instability of the spine is a complex issue that is still not well known. The biomechanical and physiological studies are needed most, in the field. Curvature of the spine creates flexibility, mobility and stability, and if any of these arches are in trouble, the spine is disrupted (3). One of the arches of the spine, lumbar, lumbar lordosis, which has a forward convexity and concavity is toward the rear. The arc power required, the pressure caused by gravity, provides, while at the same time to move, and a certain flexibility also provides for the body. Normal lumbar lordosis, vertical system of ligaments, sudden acts. (4). Typically, the distance between vertebrae L5 and S1, the anterior portion of the increase, and will result in the waist. Good people back, often with pain and fatigue, lumbar complain. Cupped the back side can be acquired, resulting

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from factors such as poverty, mobility, improper footwear, equipment and nonstandard equipment, motor condition- bad habits, such as walking, sitting and sleeping and so on. On the other hand, the reform movement and its application in the correction of physical deformities, particularly scientific knowledge, which only in recent years, we have taken into consideration (5). The correction of the anomaly, the only effective muscle strengthening, but also stretch the opposing muscles, it is necessary to correct the deformity. (6). In the last century, human knowledge about back pain have improved, and several theories have been proposed for the treatment of back, each of which claims to treatment and prevention of low back pain have. Medical treatment of the water is an issue that has been considered only in the current era, but defunct and widely throughout the world, are considered for treatment with water, and quickly to a rehabilitation method, the sports therapists has become (8). Water therapy or hydrotherapy (water, non-food consumption), one of the oldest methods of treatment of bone and muscle. This exercise includes activities and exercise, swimming and playing in water. Water treatment, a move aimed at preventing different types of diseases, as well as helping to improve health and maintain normal body function, strength, muscular endurance, flexibility and mobility, relax the muscles, coordination, when appropriate, and endurance cardiovascular, are used. In water, the intercostals muscles and diaphragm, to work harder, thus strengthening muscles are involved in breathing (9). Floating in the water, causing pressure on the spinal cord can easily be controlled. When the body moves in the water, the water resistance of the parts that are in motion, creating more work for the muscles. Esbati (2005), in their study on patients with LBP, the results found that water increases the flexibility of the spine to compensate for the lower limb muscles, reduce pain and improve function model, there is (10) . Research results Berker and colleagues (2003) showed that water treatment over 6 weeks, the rate of fatigue in patients with chronic low back pain, which can result in pain, muscle spasms, and an inability to perform daily job cut. Also, patients in this study, as they exercise, they are much more comfortable in the water, doing these exercises on land (11). McClain and Robertson (1998), in their study showed that water treatment effectiveness and cost-effectiveness in controlling symptoms such as pain, muscle spasms, and loss of balance is the function (12).

METHODS

This study used a quasi-experimental. The population of male students aged 18 to 24 years old, 2013 years non-athlete input, University of Islamabad gharb, the number was 200. At the beginning of the number, as a prototype, using stratified random sampling were selected. Then all the men for identification, and isolation of patients with increased lumbar lordosis, using the method of organization of New York, were the initial screening. Of those 100 cases, which have lordosis, the Ruler Flexible, precise measurement of lumbar lordosis, re-evaluated, at the end of the 40 people who have angular curved greater than 30 degrees, the a random selection of patients in both the control and experimental groups (control group and experimental group, $n = 20$ $n = 20$), respectively. Needless to mention, these people other than lordosis effect, no physical problem or abnormality is not certain, and not taking a certain medication. Before training, all participants consent was obtained. Tools and measuring devices, including flexible ruler, checkered, Quebec questionnaire, and height and weight of digital thermometers, SOGO models are. In order to measure the arc of back pain cases, the pain questionnaire was used to Quebec, the questionnaire consists of 25 questions with 5 options, which rated the pain intensity between 0 and 100. For data analysis, descriptive and inferential statistical methods were used. Descriptive statistics of parameters such as mean, standard deviation and inferential statistics to analyze hypothesized dependent T-test was used. Statistical analysis using SPSS16, and in the $0/05 = P$ performed.

Training

After initial examinations and tests, and the formation of two groups, the experimental group hydrotherapy sessions in a training program, three sessions per week for 12 weeks (duration of each session is about 90 minutes), a company controlled. Group this time, they did not do any regular exercise. Training program consists of three sections: warm-up, the main workout, and cool-down is

Table 1. Main experimental group hydrotherapy exercises

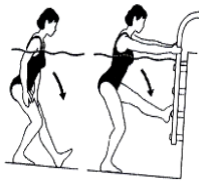
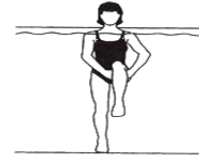

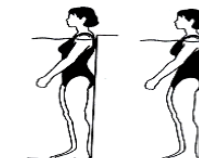



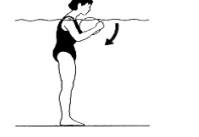
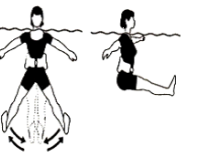
Exercise files	Purpose	Description of Practice	Practice	Row
	Tension, and flexible form of the hamstring muscles	Keep your heel on the pool stairs, and the stairs to your hands. Now While keeping your spine straight, bend forward from the hip If, and only bring it forward.	Hamstring stretching	1
	Create tension in the gluteus and hamstring muscles.	Lift one knee, and with both hands under your knees, and your knees up Possible to draw Hasineh cage.	Gluteus maximums muscle tension	2
	Creating tension in the muscles of the gluteus	Suspended vertically in a float tube you. Both knees to the Bring the chest, with your hands under your knees.	Stretching the back muscles of the trunk	3
	Induced contraction of the abdominal muscles, and lower back curve	Stand behind the wall of the pool. The abdominal and gluteus muscles, the retractor And try to arch your back to the wall, paste, so that your pelvis Go up.	Towards the hip	4
	Creating tension in the muscles of the gluteus, quadriceps and abdominal muscles	Stand behind the pool wall and the edge of the pool with both hands, without separating The back wall of the pool, with the contraction of the abdominal muscles, legs gently from the bottom Pool lift up your knees bent 90 degrees.	Gather a tub	5
	Induced contraction of the abdominal muscles.	An elastic tape to fasten the pool ladder and the pool wall stand, And the tape while the arms are bent, your abs, to bend Data sealing contract, you pull the tape.	Trunk flexion with elastic band	6
	Induced contraction of the abdominal muscles and the quadriceps	Lie down on your back in a float tube. While the tube Smaller, round the ankles thighs and knees, slowly bend; Bring your knees up to the chest. Gently bend the spine.	Bring knees toward chest.	7
	Induced contraction of the gluteus and abdominal muscles, and reducing Lumbar curve	Stand straight and hold a ball in front of chest and abdominal muscles. Serine contract, to arch your back is straight. The trunk is a bit slow Forward bend.	Maintain pelvic tilt in standing position	8
	Strengthening the abdominal muscles and hip adductor	Suspended in the water, so that the thighs bent 90 degrees, knees Hands away from the body is smooth. Your feet hip distance apart, Close to each other again.	Round the legs in sitting position	9

Table 2. Characteristics of participants

The control group			The experimental group of selected programs Hydrotherapy			
Maximum	minimum	The mean \pm (SD)	Maximum	minimum	The mean \pm (SD)	Statistic indexes
24	19	14/2 \pm 22/66	24	18	28/2 \pm 22/5	Age (years)
69	48/90	5/78 \pm 56/50	60/70	50/48	5/73 \pm 57/20	Weight (kg)
171	157	5/30 \pm 162/20	170	156	5/50 \pm 160/20	Height (cm)

Table 3. Comparison of changes in group

The experimental group of selected programs Hydrotherapy						
Pretest			-posttest			
Maximum	minimum	The mean \pm (SD)	Maximum	minimum	The mean \pm (SD)	Statistic indexes
28	17	14/2 \pm 20/20	31	19	0/68 \pm 23/69	Pain score (points)
47/22	43/30	0/28 \pm 47/08	50/69	45/50	0/24 \pm 47/20	Lordosis angle (degrees)
Control group						
30	19	0/60 \pm 24/09	30	18	0/65 \pm 24/14	Pain score (points)
49/86	42/68	0/33 \pm 45/55	50/70	43/90	0/35 \pm 45/50	Lordosis angle (degrees)

DISCUSSION AND CONCLUSIONS

The results obtained in this study suggest that, in selected programs used in water treatment, the frequency of three days per week, after 8 weeks on the stabilizing muscles of the spine, in order to reduce and eliminate pain lumbar lordosis, was effectively the same token, it can be noted that the incidence increased lumbar lordosis, the center of gravity near the middle of the back bones of the body, and appendages together and the resulting shock the size of the ducts or openings between the vertebrae where the spinal nerves as they pass, will be reduced. The impact of water a mild stretch in the lumbar spine feels, this is mainly due to the force of gravity, the water is neutralized by the buoyancy effect occurs. At the time of this elasticity decreases pressure inside the disc, spinal canal size increases, and it may be a little gap between the joint surfaces. During exercise in the water, looking for answers reflect skeletal muscle contraction and release there. The stronger the contraction, the muscle is greater in subsequent releases. It seems that the feeling of loss of water weight, muscle cramps destroyed or significantly reduced, and this will decrease the muscle. The results obtained in this study also suggests that, hydrotherapy exercises used in order to reduce the lumbar lordosis, was effective. Several studies of water treatment, the present study showed similar results in terms of reduction of pain intensity, have gained, and in contrast to this study, some believe that the application of water a month, did not have a positive effect on pain. Many researchers based therapy in preventing the progression of symptoms in patients with low back pain on removal of the forces acting on the spine and back are built, so exercise stress that may increase the forces on the spine to be considered harmful. And whereas, during exercise in the water, one can check his weight, and forces on the spine, decreased. McClain and Robertson (1998), in their study showed that water treatment effectiveness, and cost-effective in controlling symptoms such as pain, muscle spasms, and loss of balance is the function. The results obtained in this study, selected exercises hydrotherapy, the approach employed in order to reduce or eliminate back pain are effective.

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