

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Effect of 6weeks Chosen Physical Therapy on Kyphosis Angle of Secondary Boy Students of Eslam Abad Gharb.

Ainollah Sakineh Poor*, Hedayat Mohseni, Nader Najafzadeh,, Marzieh Hemmati, and Amir Najafi.

Department of Physical Education and Sport Sciences, Borujerd Branch, Islamic Azad University, Borujerd, Iran.

ABSTRACT

Dynamic lack that is an consequence of modern Life is a factor of causing many mental and physical disorder such as skeleton abnormalities The kyphosis is one of the most common problems between the students the student so by providing a series of corrective exercises can take an effective step in decreasing of this abnormality the purpose of this paper is surrey of secondary boy stadents.40 kyphosis boy students to be placed In two empirical group (20students)and con troll group did these exercises under the supervision of the researcher in 6 weeks 3 sessions in any week and any session 40-60 minutes .the flexible ruler used to measuring of kyphosis angle of tested and its average was (54.0 ± 3.8) in pre-test and (46.2 ± 3.7) in post-test. the findings to be analyses by descriptive and deductive statistics and methods associate t-test, The results show that in spite of meaningful decrease of kyphosis angle in testes the results show that in spite of meaningful decrease of kyphosis angle in tested after participating in program of corrective exercise and lack of attention to other abnormalities of kyphosis.

Keywords: corrective exercises kyphosis angle boy students

**Corresponding author*

INTRODUCTION

Physical education and athletic science is one of the fields of human science that today has a special important .the main goal of physical education and science is training and health of body .having a good physical condition in routines exercises and athletic skill is very important [1]. Dynamic lack that is a consequence of modern Life is a factor of causing many mental and physical typical disorder such as skeleton abnormalities[2].the conditional deviations to make imbalanced of muscles and in proper relation of length and muscular tension incoherence of joint levels the ligamani loosen and change in dynamic rang of joints and functional disorder[3].kyphosis is an abnormality that extend in childhood and teen years and often to hide in eyes this abnormality often to become clear in un correct position and it is possible that to be due to serious changes in spinal column[4].the ;the weakness of muscles , particular straightener muscles of spinal column in the back and shortness of chests muscles ,is a factor of this abnormality [5] . the normal degree of kyphosis is 20-40degrees if his angle to be more than 40 to be defined as deformity. kyphosis from the viewpoint of corrective divided to structural and func-tional.the type of functional are corrective divided to structural structural and functional. The type of functional are correction able by corrective exercises but the type of structural needs to surgical[6].unfortunately these abnormalities often to cause in students because students are in grow and puberty and formation and completion of skeleton-muscular condition occurs in this time,and skleto-muscular abnormalities gradually to become serious disorder and body to be weak [7].however to seem that stretching and stretching exercises can decrease the kyphosis degree by harmonizing of adverse and favorable muscular groups[8].posture defined as combination of location of different joints the correct posture is a situation which the least pressure to hit one joints other in some time the situation which the least pressure to hit on the joints and muscular activity is in the lowest level .the other situation that to pressure on the joints usually defined as in correct posture and in incorrect posture high energy to be use .the spinal column s abnormalities which causes due to unknown inheritable and acquired reasons to effect on the posture s Control and to lose on s balance [9].recently to be more attention to sports which their goal is improvement and development of dynamic-sense control of spinal column [10].lynn (1989)did study .of effect of a series of effective exercises on improving of muscles strength of spinal column and had observed the decrease of kyphosis angle in samples after 12 weeks[11].sayari and et.al (1384)studied and comprised corrective s- structural and corrective –structural and corrective-aerobatic exercises az shahid chamran university exercises programs on kyphosis students in ahawaz sahadid chamran university .the researchers find that performing of both of ways here a positive effect on the kyphosis angle and performing of combination of these exercises that include structural- corrective exercises and aerobatic run to caves a good improvment in kyphosis angle [12].Holloway(2012)says the emergence of kyphosis can be due to weakness of back muscles and defect of upper muscles of frontal region of back muscles and defect of flexibility of upper muscles of frontal region of back muscles and defect of kyphosis can be due to weakness of back muscles and defect of flexibility of upper muscles of frontal region of chest and shoulder[13].Burre (2004) to use of strengthening exercises' for increasing of strength of straightener muscles of spinal column in khyphotic people and finally finds that increasing of strength of these muscles has a improtant role in maintenance of skleton and improving the kyphotic abnormalities [14]. The researchers haves shown that increasing of kyphosis angle in adulthood has relation to decreasing of physical function balance disorder decreasing of walking rate and to climb of stairs decreasing of functional ability and also decree-sing of ability of routine activites [15-16]. although the result of different researches have been shown that correctic exercsesis effective on the kyphosis angle of back in hyper kyphosis persons[17-18]. so that hrysomallis cand goodman (2001) in extensive review on published researches about survey of effectiveness of corrective exercises with focus on strengthening exercises in improving of different situational abnormalities such as kyphosis to get away of shoulder's lordose and scoliosis have report that scientific evidence about effectiveness of common situational corrective exercises in improving of these disorders is insignificant [21].many probable factors to have apart explanation of less effective-ness of corrective exercises in the past researches . to be sound focus on improveing of strength of extensor in muscles of spinal column a lonly lack of exact supervision on grouping performing using of quality ways in measuring of kyphosis angle and lack of impartiality in collecting of corrective exercises and these reasons have been confused the results of researcher exercises and these reasons have been con fused the result of researches[19-20].the filed of corrective exercises and and athletic pathology is for prevention of abnormalities in human and having a suitable physical posture and in perspective of athletic pathology this field to try study research and surrey about athlete that to suffer of athletic injury and provding some techniques for prevention of injuries in athletes so that these athlete could improve and start their athletic activities so here this question to be arise if performing of common corrective

exercises on the basis of Kendall theories in the form of situational exercises to consist of stretching exercises in front part of body and strengthening exercises in back region of spinal column has a favorable effectiveness on the decreasing of kyphosis angle in kyphosis people? so this paper has been done for survey of effect of 6 weeks chosen corrective exercises program on kyphosis angle of secondary boy students.

MATERIALS AND METHODS

The way of this paper is semi-empirical and statically society were society were secondary kyphosis boy students. from statistical society, after face to face interview student had selected and randomly divided to empirical group (23 students) and control [22]. 5 student had deleted from the survey because of shoulder pain and illness, first in one meeting students that were participated in the program to be familiar with this plan orally and researcher to permit to them that if they want to quit the survey also in this meeting student that to be inclined to participate in the plan to fill questionnaire of medical competition on and consent paper for participating in the plan and their kyphosis angle of spinal column (T1 AND T2) to be measured by flexible ruler. After selecting of testees the empirical group had participated in one exercises program the objective of program was stretching of shorted muscles of chest and strengthening of backs muscles

Exercises protocol

The program of exercise 18 session and empirical group did their exercises under supervision of researcher for a period of 6 weeks 3 session in any weeks and any session was 40 -60 minutes. in this study 5 different exercises to recommend which were a combination of strengthening stretching and individual exercises that were recommended for strengthen of straightener muscles of spinal column were on the evidence of moffroid and et al (22) the exercises that were recommended for tension of muscles between shoulder and pectoral have been evaluated by wang and et al [23].

The method program of program in any session of exercise

In order to decreasing of probable injuries to joints and muscles of testees in any session of exercise for s testees in period of 10 minutes (include of 5- minutes slowly and 5 minutes for stretching and strengthening exercises) prepared their body and had increased the motor range of their joints and spinal column the program of static tension exercise had increased of 15 second in the start of exercises to 30 second in the end of exercises the static tension exercises to be repeat 3 times in any session by researcher and testee Exercise 1: IN THE start of exercise the person in a standing position with straight half- closed legs to keep their hands the head and to bend their upper of body to the right and left. Repeat this exercise several times. the objective of this exercise was to establish of move ability in the spinal column exercise 2: the testee to stand and then bend their back (waist) and put their hand on the suitable device with the height of rest (table fence or chair) then try the upper of body especially the chest area to be bow downward come back to initial state repeat this exercise several times the objective of this exercise was to develop flexibility and tension in muscles of chest area. exercise 3: this exercise is done in pairs by sitting and standing. Two people to be placed to each other's back take each other's hands while they are stretched their hands over head. the movement to start so that one by bending their upper of body to pull others on their back then to back to rest state and other person to repeat same movement. it is better first to be sitting and then standing. the objective of this exercise was flexibility and tension in muscles of chest area exercise 4: the person lie down on his stomach and while the legs are fully extended to keep his hands forward and above of his head. arms and chest off the ground slowly and gently back to initial state. To be tired that fee be fixed. On the ground the objective of this exercise was strengthen of muscles of back and shoulders. Exercise 5: the person lie down on his stomach and locks his side then lifted up the head and chest and for moments keeps it. The objective of this exercise was strength of waist neck and shoulders in control and empirical groups. tools of measuring of test was done in control and empirical groups.

Tools of measuring of testees

In this survey to be used of this ruler is 97% [24]. weight and height of this ruler is measured by digital balance and height meter that were made in iran methodology of measuring of reference points in kyphosis: the process of measuring of kyphosis angle was done by determining of appendixes of T_2 and T_{12} spines and

then is determined as referenc point by marker . then said to testees that stand natural and comfort table look to forward and put their weight on his feet identically .In this state have been waited 20 minutes so that the persons body get to normal and comfortable state .then flexible ruler put on the spinal column and be like a arch after fixing of flexible ruler put an the spinal column and be like arch. After fixing of flexible ruler on the spinal column the points of it that was in contact with shortcut part of lables are determined by marker and without any contact with shortcut part of lables are determined by marker and with any changment in the shape of ruler be picked up and put on the white paper and curve of its convex part be drawn and (t_2 and t_{12}) points be marked finally for describing of data in level of descriptive and comprehensive be used to of spss software and T-test be used to or comparison of statics and meaningful level of The test be considered 0.05.

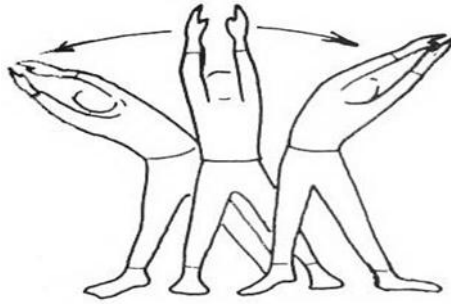


Figure 1: To establish of movement in spinal column

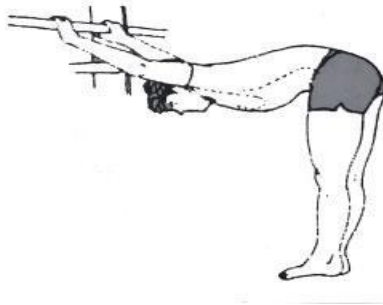


Figure 2: To develop flexibility and tension of chest muscle

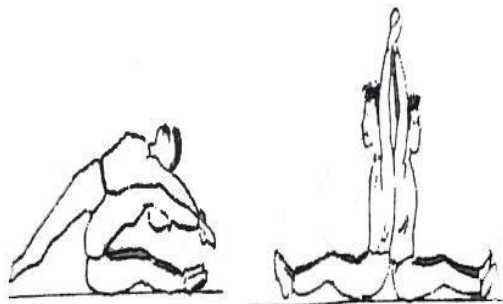


Figure 3: To develop flexibility and tension of chest muscle

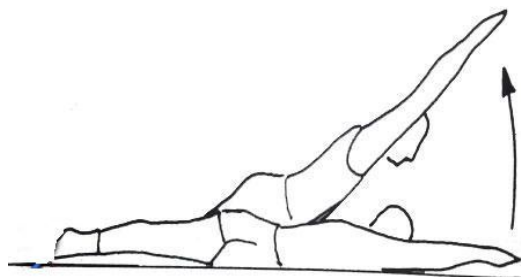


Figure 4: To strengthen the back and shoulders muscles



Figure 5: To strengthen the waist , neck and shoulders muscles

FINDINGS

To students ,in control group (20students)and empirical group had done exercises , in 6 week .And be evaluated in post - test . the average of descriptive statistic of control and empirical group have been shown in table 1, 2 .

Table 1: The average, standard Derivation of properties of testees

Variable	Frequency	Age	Weight	Height
Empirical group	20	13.09±1.22	45.21±7.31	159.12±0.37
Control group	20	14.45±1.18	46.29±6.26	163.35±0.32

Table 2: The average, standard Derivation of properties of testees

p-value (effect of time)	Df	T	post- test	Pre-test	Measurement of time group
0.001	19	11.6	46.2±3.7	54.0±3.8	Empirical
0.562	19	4.8	52.4±2.6	53.0±4/2	Control
*<0.001			0.001	0.634	p-value (effect of group)

In empirical group , there is a meaningful different between per-test and posttest ($p < 0.001$), but in control group there isn't a meaningful different between pre – test and post - test ($p < 0.562$). In according to results of independence.

T-test between the average of kyphosis angle of both of groups in pre-test ($p = 0.634$) and post - test ($p = 0.562$), don't observed. But in the first post-test a meaningful different , observed , in the average of hypnosis angle bet-wean two groups ($p < 0.001$).

RESULTS AND DISCUSSION

The propose of this survey was effect of 6 weeks of chosen corrective exercises on the kypohtic secondary boy students. The results of this survey show that 6week of corrective exercises can be cause of decreasing of kyphosis angle in kyphosis boy students. The finding of research show that degree of changed meaningfully ($p < 0.001$). the results of this research is agree with work of Hyball and et.al (2009), mika and et.al (2005), Renow and et.al (2005), and savdon (2010)[25-26-27-28]. the difference that to be found in this research to show the rate of result of result decreasing of kyphosis angle . And this result is due to exact performing of corrective exercises and . it's effectiveness of corrective exercises is not favoriate the average of decreasing of kyphosis angle in kyphotic people is less than exceptional rate (more thn 11 degree). Although to be sound that this comparsion by other researcher , have been done to cause of don't reporting [29-30]. of kyphosis angle rate in the past research investigated the effect of 8 weeks of corrective exercises on kyphosis , scoliosis and lordosis angle of 12-14 years girls . their results about kyphosis angle show that in group of 12,13,14 years , to be observed a meaningful decrease . the result of current paper Is agree with results of study of Rahnama and et.al and only difference was that testees were girls [31]. different surveys that have been done in all of the world have stated many factors and cause that to make permanent deficiencies or temporal dis order in spinal column which can be show it self by a simple backache these studies show that for preventing of spinal column disorders and or for protecting of health of this limb what actions to be done and what factors to be prevent .for example in Greece korovessis and et.al (2004)have done a study on the 3441 9-15 years students and to be proved that there is a relation between the severity of kyphosis and the wight of backpack also age and gender is related to kyphosis so that girls more than boys be affected to backache and kyphosis [32].

CONCLUSION

However to be suggest that athletic sciences and physical education experts in addition to recommended corrective ex exercises in this surrey to add the sense-deep control-dynamic and functional-dynamic and researches include ,ore training and persevering periods.power system.

REFERENCES

- [1] Alizadeh M, H, Qrakhano R, 1998. Daneshmandy H. movements and corrective therapy, Printing, Tehran: Majed.
- [2] Asher MA, Burton DC. Scoliosis 2006;1(1): 2.
- [3] Ayub E. 1991. Posture and the upper quarter. In: Donatelli R. Physical Therapy of the Shoulder. 2nd ed. Melbourne, Churchill Livingstone, 81-90. .
- [4] Daneshmandi H, Pourhosseini H, Sardar MA. 2005. Comparative study of spinal cord abnormalities in boys and girls students. Harekat; 23.
- [5] LetafatKar A, Abdolvahabi Z. 2011 General reform movement along with corrective exercises. Tehran, Iran: Avaye Zohur, [In Persian].
- [6] Daneshmandi H, Alizadeh MH, Gharakhanloo R. 2004. [Corrective exercise (Diagnosis and prescription of exercises).Tehran: Tehran Samt Pub;.[Persian]
- [7] Hawes Mc, Y. Pediator Rehabil 2003;3(4):171-82.
- [8] Rahnama N, Bambaiechi E, Taghian F, Nazarian AB, Abdollahi M. J Isfahan Med School 2010; 27(101): 676-6.]. Persian.
- [9] David M. 1989. "Orthopedic physical assessment". 4th Edition. pp: 873-875. (2006).
- [10] Ohlsson K, Atteweell R, and Skerfring S. Self. Reported symptomsin the neck and upper limbs of female assembly workers. Scandina vian Journal of work and Environmental Hwalth, 15, pp.75-80.
- [11] Lynn H, 2001. Exercise may ease kyphosis effects. Improving posture and muscle strength reduces curvature of spine. American College of Rheumatology.
- [12] Sayari A, Farahani A, Ghanbarzadeh M. Olympic 2006;14(3): 61-9.
- [13] Holloway GB. 1994. Individual differences and their implications for resistance training. Essentials of Strength Training and Conditioning.151-162.
- [14] Burret E. 2004. Kyphosis (curvature of the spine) [online]. Available from: URL: www.orthopaedicweblinks.com.

- [15] Balzini L, Vannucchi L, Benvenuti F, Benucci, M, Monni, M, Cappozzo A, et al. *J Am Geriatr Soc* 2003; 51(10): 1419-26..
- [16] Ryan SD, Fried LP. *J Am Geriatr Soc* 1997;45(12): 479-86.
- [17] Rahnama N, Bambaiechi E, Taghian F, Nazarian AB, Abdollahi M. *J Isfahan Med School* 2010; 27(101): 676-6.
- [18] Daneshmandi H, Hemmati Nejad MA, Shahmoradi D. *Movement* 2004;22: 75-86.
- [19] Hrysomallis C, and Goodman G. *J Strength Cond Res* 2001; 15:385-390.
- [20] Vaughn DW, and Brown, EW. *J Back Musculoskelet* 2007; 20:155-165. .
- [21] Hrysomallis C, and Goodman G. *J Strength Cond Res* 2001;15:385-390.
- [22] Moffroid MT, Haugh LD, Haig HA, Henry SM, Pope MH. *Phys Ther* 1993;73(1): 10-7.
- [23] Wang C, McClure P, Pratt NE, Nobilini R. *Arch Phys Med Rehabil* 1999; 80(8): 923-9.
- [24] Sokhangoie Y. 2000. *Corrective movements*. Tehran: Office of Education boys total Ministry of Education.
- [25] Ball JM, Cagle, P, Johnson BE, Lucasey C, Lukert BP. *Osteoporos Int* 2009; 20:481-489.
- [26] Mika, A., Unnithan, VB., Mika P. *Spine* 2005;30(2):241-246.
- [27] Renno A, Granito RN, Driusso P, Costa, D, Oishi J. *Physiother* 2005;91(2):113-118.
- [28] Sawdone BJ. 2010. "Effects of a 10 week exercise intervention on thoracic kyphosis, pulmonary function, endurance, back extensor strength and quality of life in women with osteoporosis". PhD Dissertation, College of Health Sciences, Texas Women's University.
- [29] Hrysomallis C, and Goodman G. *J Strength Cond Res* 2001; 15:385-390.
- [30] Vaughn DW, and Brown EW. *J Back Musculoskelet* 2007;20:155-165.
- [31] Rahnama N, Bambaiechi E, Taghian F, Nazarian AB, Abdollah M. *Journal of Isfahan Medical School* 2010; 27(101): 676-86 .
- [32] Korovessis P, Koureas G, Papazisis Z. *J Spinal Disord Tech* 2004;17(1): 33-40.