



Original Article

Frequency of Cervical, Thoracic, Lumbar Pain and Postural Changes in Madrassa Students

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ABSTRACT

Musculoskeletal pain and abnormal postural change are very common among school going students. The prevalence is also high in madrassa students. Their number increase because of bad posture, prolong sitting and repetitive movement. **Objective:** The objective of the study was to find the frequency of pain in cervical, thoracic, and lumbar spine and postural abnormalities occurring in madrassa students. **Methods:** This is a descriptive cross-sectional study which was conducted from 15th February 2016 to 28th June 2016 at different madrassa's of Rawalpindi and Islamabad. A sample of 205 male and female madrassa students (age 10-17year) was recruited through convenient sampling. The inclusion criteria were both genders, male & female, Age; 10-17, only madrassa students with poliomyelitis, active tuberculosis, neurological problems and congenital deformities. Normal posture and pain were assessed by Adam's bend test and Numeric pain rating scale (NRPS). Later the data was analyzed through SPSS 17. **Result:** A total sample size of 205 was selected in which 61% were male students and 39% were female students. The mean age of the madrassa students is 13.19 ± 2.06 of which 12.98 ± 2.00 male and 13.51 ± 2.14 . Out of 205(100%) madrassa students 74.6% madrassa students have pain, most of them have moderate intensity of pain 55.6% and 12.7% have severe intensity of pain and 25.4% madrassa students have no pain. 78.5% of the madrassa students were sitting with low level of desk and 21.5% with appropriate leveled height of the desk. Only 6.8% of madrassa students have activity restriction due to pain. Forward head posture is present in 37.1% of madrassa students and absent in 62.9% of the students out of 100%. 36.6% of madrassa students presents with rounded shoulders. Out of 100% of madrassa students 36.1% of madrassa students have increased thoracic kyphotic and lumbar Lordotic curve. In 11.7% of the madrassa students Adams forward bending test for scoliosis came positive and negative in 88.3% of the madrassa students. **Conclusion:** It is concluded that the cervical and lumbar pain is more prevalent in madrassa students and some of the students show increased kyphotic and lordotic curves which is correlated with long periods of sitting for recitation in forward flexion of head, neck, and back and poor posture maintenance.

INTRODUCTION

Neck pain is a generally mild musculoskeletal condition yet it is an important health issue that is concerned with impaired mobility [1]. 67% of the population experienced cervical pain during their life span [2]. Cervical pain that originates in childhood may be the cause of chronic cervical pain in adulthood [3]. Deficient posture compromises of the poor interrelation between parts of the body. These flawed interrelations cause muscle tension

and shortening, which make suitable joint developments harder to achieve and may bring about pain [4]. Normal spinal orientation depends on its articulations, muscles, and bones hence weakening of muscles can cause poor static and dynamic balance which is known as positional abnormalities [5]. Thoracic kyphosis is defined as a forward curvature of the thoracic spine in the sagittal plane [6]. Radiographically and non-radiographically measured normal kyphotic curve

ranges from 20o-50o. Hyper kyphosis is defined as $>50^\circ$ [7].

Prevalence of thoracic kyphotic angle is raised with age and it is more common in females as compared to males [8]. With increased in thoracic kyphosis there is loss of height, upper and middle back pain, limited mobility, high risk of falls, impaired respiratory functions [9]. Kyphosis is also affected by certain factors like Genetics, Environment, physical, emotional and socioeconomics [10]. It also causes reduction in physical activity, pain in cervical segment of spine, headaches and shoulder discomfort such as subacromial pain [11], during respiration it causes compromised ribcage expansion [12]. In scoliosis there is lateral curve of the spine in frontal plane and axial rotation occurs in horizontal plane which also disrupt the normal curve of spine in sagittal plane [13]. Poor school furniture, prolong sitting time, uneven straps and overburdening of school bags and unfitting foot wears are the risk factors that can cause scoliosis in school going children [14].

METHODS

The study is being conducted on students from the different madrasa students of Rawalpindi and Islamabad as follows: Madrasa Zia-ul-Quran, Shah Khalid Colony Rawalpindi, Darul Sufah Faisal Colony Rawalpindi, Madrasa Hazrat Abdullah bin Abbas(R.A) Islamabad, Madrasa Hazrat Salman Pharsi(R.A) Dhok Mangtal, Rawalpindi, Madrasa Abdullah bin Umar(R.A) Jinnah Garden, Phase I, Islamabad, Madrasa Khadijah tul Qubra, Khayaban-e-Sirsyed, Rawalpindi, Jamya Amna Zia ul Binat, Railway scheme 7, Rawalpindi, Jamya Fatimah-tuzehra Boring Road, Rawalpindi. Study duration of 4.5 months was allocated i.e. from 15th February 2016 to 28th June 2016. We were given a sample size of 205 students from Madrasa students of Rawalpindi and Islamabad. Sampling technique of Non – Probability Convenient Sampling was used in this survey where students that were accessible to us during madrasa visits were included in study. The sample was selected according to the following criteria. The inclusion criteria include; both genders, male & female, Age; 10-17, Only madrasa students.

Exclusion criteria: Students above the age of 17 years, Students under 10 years of age, Children with poliomyelitis, Active tuberculosis, Neurological problems, congenital deformities.

RESULTS

The result shows that 74.6% madrasa students have pain most of them have moderate intensity of pain 55.6% and 12.7% have severe intensity of pain and 25.4% madrasa students have no pain. Radiating pain in madrasa students is only 7.8% out of which pain radiating from cervical is 5.9% and pain radiating from lumbar is 2.4%. Out of 74.6% madrasa student's cervical pain is found in 25.9% madrasa student's, thoracic in 5.4% madrasa student's, lumbar 20.0% madrasa student's, cervical and lumbar 6.8% madrasa student's, cervical and thoracic 9.8% madrasa student's and cervical, thoracic, and lumbar is 6.8% madrasa students. 100% of madrasa students were sitting on floor in which 100% madrasa students were keeping their cervical spine in flexed position and 99.5% were keeping their thoracic and lumbar spine in flexion while 0.5% madrasa were keeping their thoracic and lumbar spine in side bending position while sitting. Majority 73.7% of the madrasa students recite for more than 8 hours and 18% madrasa students recite for 6-8 hours. During recitation out of 100% madrasa students 77.6% keep their cervical spine in full flexion and 22.4% of them maintain slight flexed cervical position. At thoracic and lumbar 91.7% madrasa students do forward and backward movement while reciting.

Frequency of pain:

153(74.6%) of madrasa students have pain and 52(25.4%) of madrasa students did not have any pain in cervical, thoracic, and lumbar spine (Table 1).

Pain present	Frequency	Percent
Yes	153	74.6
No	52	25.4
Total	205	100.0

Table 1: Frequency of pain

Intensity of pain	Frequency	Percent
No pain	52	25.4
Mild pain	13	6.3
Moderate pain	114	55.6
Sever pain	26	12.7
Total	205	100.0

Table 2: Frequency of Pain according to intensity

Intensity of pain:

In this table total of 205(100%) madrassa students present out of which 52(25.4%) have no pain, 13(6.3%) have mild pain, 114(55.6%) have moderate pain, 26(12.7%) have severe pain (Table 2). Numeric pain rating scale.

Pain site	Frequency	Percent
Cervical	53	25.9
Thoracic	11	5.4
Lumber	41	20.0
Cervical and lumber	14	6.8
Cervical and thoracic	20	9.8
Cervical, thoracic & lumber	14	6.8
Total	153	74.6

Table 3: Frequency of Pain according to site

Where do you feel pain?

Out of 153(74.6%) madrassa student's cervical pain is found in 53(25.9%) madrassa student's, thoracic in 11(5.4%) madrassa student's, lumbar 41(20.0%) madrassa student's, cervical and lumbar 14(6.8%) madrassa student's, cervical and thoracic 20(9.8%) madrassa student's and cervical, thoracic, and lumbar is 14(6.8%) madrassa students (Table 3).

Forward head	Frequency	Percent
Present	76	37.1
Absent	129	62.9
Total	205	100.0

Table 4: Frequency of forward head posture

On inspection forward head

Forward head posture is present in 37.1% of madrassa students and absent in 62.9% of the students out of 100%. 36.6% of madrassa students presents with rounded shoulders (Table 4).

DISCUSSIONS

Another study shows that decreasing the poor habits and adapted the children with the proper biomechanics of carrying a bag pack and proper sitting, standing, and sleeping posture certainly decrease in the number of spinal deformities in children [15]. we found in our study that children who were sitting with low leveled desks have maintained forward bending posture which causes pain and postural deformities. In school going children girls and boys may develop postural deformities. It has been found that kyphosis and Lordosis is prevalent in boys than girls and scoliosis is dominant in girls as associated to boys [16]. in our study we found that 36% of the madrassa students have increased kyphosis and Lordosis. High rate of postural changes occurs in school going children. Some of them are getting corrected with child growth and development. Some of them did not resolve themselves as child grows and cause a negative impact on the quality of life. The researchers of this study emphasize the value and significance of providing information to the parents, teachers and caregivers about the effects of poor posture [17]. A study done by Satoshi Yamamoto et al. states that prevalence of scoliosis is lower in Nara city as compared to the previous studies. In girls' scoliosis prevalence is increased. While in boys it did not change significantly for the last 23 years [18].

In this study we found that the children with scoliosis have more severe back pain as compared to non-scoliosis children. Children with scoliosis have more pain in the right upper and middle region of back [19]. All of these studies found low prevalence of scoliosis in children and we have also found that in our results. Adolescent low back pain is prevalent in school going children according to a study conducted in Ibadan, Nigeria and it is affected by children involvement in different activities not because of gender difference [20].

CONCLUSIONS

It is concluded that the cervical and lumbar pain is more prevalent in madrassa students and some of the students show increased kyphotic and lordotic

curves which is correlated with long periods of sitting for recitation in forward flexion of head, neck, and back and poor posture maintenance. Forward head posture, kyphosis, and lordosis and associated pain occur as a result of muscular imbalance. Scoliosis is not much prevalent among madrasa students.

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