

Effects of Ponytail versus Modern Hijab Wear on Cervicogenic Headache and Postural Deviation

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Author's Contribution

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A B S T R A C T

Background: Cervicogenic headache (CGH) is termed as headache symptoms arising from the cervical spine. Postural deviation is a term used when any segment of the spine deviates from its normal alignment. The most common postural deviations are kyphosis, lordosis, and scoliosis

Objective: To determine the effects of ponytail versus modern Hijab wear on cervicogenic headache and postural deviation.

Methodology: A cross-sectional study was conducted on 280 university female students of age range between 18-30 years. Non-probability convenient sampling technique was used for data collection. Study included those females who used to make ponytails or modern hijab wears/headscarves. Rest of subjects were excluded with history of any other type of headache like migraine, tension type headache, cluster headache, cervical radiculopathy, neck muscle spasm, trauma history, whiplash injury or road accident history and with any systemic illnesses. Data were analyzed in SPSS version 21.0.

Results: There were 280 females of mean age 23.28±3.03 years. Pain intensity was measured using Visual Analogue Scale (VAS) and mean pain score was 4.56±2.4. About 59.6% subjects had moderate cervicogenic headache and overall headache worsened more with tight ponytail making habit in 55.4% females, regardless of the fact that majority (52.1%) of the population was wearing modern hijab/ headscarf than making ponytail (44.3%). Postural deviations were also prominently present in which forward head posture and rounded shoulders were mostly present in 56.8% and 55.7% females.

Conclusion: Wearing tight ponytail or making hair bun causes cervicogenic headache more than wearing headscarf or Hijab. These trigger postural deviations including forward head and rounded shoulders in addition with cervicogenic headache.

Keywords: Cervicogenic Headache, Hair bun, Hijab wear, Neck pain, Postural Deviation, Ponytail.

Introduction

Cervicogenic headache (CGH) is termed as headache symptoms arising from the cervical spine.¹ Postural deviation is a term used when any segment of the spine deviates from its normal alignment. The most common postural deviations are kyphosis, lordosis, and scoliosis.² Ponytail is very common in female students because of its neatness.³ Hijaab is the religious identity of Muslim women. Hijaab is a headscarf that a Muslim woman uses to cover her head.⁴

Studies found that Ponytail and a hijab can cause headaches and neck pain⁵ if worn for a long period of time.

CGH is a considerably usual and quite contentious type of headache originating from structures in the neck. Persistent alternating head and neck pain occurs in patients with cervicogenic headaches. CGH might be aggravated via constant cervical motion.⁶ The symptoms of cervicogenic headache may originate from any of the structures of the

cervical spine, involving vertebrae, disks, or soft tissue. Women have been reported to be impacted four times more often than men.⁷ It is usually aggravated via neck motion, constant inappropriate head position or extrinsic pressure throughout the upper cervical or occipital region on the diagnostic margin.

Muscle tenderness could be present in the pain region in comparison to the nonpain region.⁸ Cervicogenic headache (CGH) usually arises from a one-sided posterior head and neck ache arising from the cervical system and maybe bettered or settled by successful treatment of the causative cervical disease or lesion. In people suffering with primary headaches, 68% of the people experiences neck pain too.⁹ Dizziness, visual disturbances, tinnitus, and "posterior" headaches are also observed with CGH.¹⁰ Cervical pain is the most ordinary musculoskeletal complaint in the adult community, along with a final occurrence starting from 10.4% to 21.3% and a prevalence of up to 86.8% in developed countries.¹¹

In European Union countries, headaches have an approximated prevalence of up to 4.6%, with CGH representing 17% of all headache sorts.¹² The high prevalence in this field has been raised in the last ten years.¹³ The definite universality and harmful factors for CGH are not well known. Earlier prospective research suggested that 86-88% of sufferer accompanied by cervical myelopathy or radiculopathy.¹⁴ Cervicogenic headache is considered to be provoked through constant neck postures consisting of excessive forward head movements which might then trigger.¹⁵

As reported by European organization for Protection and Health less exercise, more time on screen and psychotic human factors are the risk factors for CGH.¹⁶ Physiotherapy management including massage, cold pack, cranio-cervical exercises, helps to improve posture. Medicinal drugs used involve NSAIDs, tricyclic antidepressants along with amitriptyline, muscle relaxants which included baclofen, and anticonvulsants which includes gabapentin or carbamazepine. People who do not get relief by the use of medicines and therapies for them invasive treatment options (dorsal root entry lesions, posterior partial rhizotomy, neurolysis) are considered. Pain usually settles in 3 months by following effective medical care of cervical injury/disease.¹⁷

This study aimed to evaluate the effects of ponytail versus modern Hijab wear and pony tail both are prevalent in female university students. The study will also identify the fact that either hijab wear or ponytail more affecting the cervicogenic headache or causing postural deviation in females. The study will also guide the participants to make adjustments while doing hijab or making a ponytail. The factors causing cervicogenic

headache and postural deviations would be identified earlier to avoid musculoskeletal disorders that will lead towards functional disabilities later on.

Methodology

It was a cross-sectional descriptive study design. Data were collected from the University of Lahore, University of Management and Technology, Superior University and Riphah International University Lahore. Study was completed in 3 months after the approval of synopsis. The calculated sample size was 280, confidence level 95%, anticipated population proportion $P=0.55$ and absolute precision was $d=0.07$

Present study included university female students between 18-30 years of any department, any semester or year used to wear hijab/headscarf, ponytail, hair bun and both on daily basis for more than 2 years and with complain of neck pain and/or headache. Rest of subjects were excluded with history of any other type of headache like migraine, tension type headache, cluster headache, cervical radiculopathy, acute neck muscle spasm with any jerky neck movement, trauma history, whiplash injury or road accident history and with ant systemic illnesses. Non-probability convenient sampling technique was used to collect data through a self-administered modified questionnaire including Visual analogue Scale (VAS).

The questionnaire was in accordance with international classification of headache society, cervicogenic headache criteria, and has been used in various studies with modifications. Demographics were added including age, occupation, institute, department, semester or year of study, the average number of hours in a day, and days in a week for wearing hijab and or ponytail. Data were taken from those female students who voluntarily accepted the written knowledgeable consent form prior to data collection. Study was also commenced in front of Institutional Review Board, University of Lahore for the ethical considerations (Ref No: IRB-UOL-FAHS/821-XIII/2021).

The data were analyzed by using SPSS 21. For quantitative variables mean and standard deviation were calculated. For qualitative variables, frequency and percentage were calculated. Chi square test was also carried out to find out the association between Hijab wear, ponytail habit, cervicogenic headache and postural deviations.

Results

There were 280 females of mean age 23.28 ± 3.03 years. Pain intensity was measured using Visual Analogue Scale (VAS) and mean pain score was 4.56 ± 2.4 (Table I). The minimum age of the females was 18 and the maximum age was

25 years. 59.6% of the participants complaints of cervicogenic headache of moderate intensity in the study. The study showed that 52.1% of the female are experiencing cervicogenic headache that wear modern hijab. In 55.4% of the female participants the cervicogenic headache becomes severe with ponytail and bun. Moderate postural changes in cervical spine, shoulders and upperback were found. The study found significant association of cervicogenic headache with ponytail and modern hijab wear.

Table I: Descriptive statistics of age, pain intensity and hijab wearing hours (n=280)

Variable	Mean	SD
Age	23.28	±3.03
Pain Intensity (VAS)	4.56	±2.4
Hours of wearing headscarf in a day	5.51	±4.13

Table II: Frequencies and percentages of cervicogenic headache, features and or experiences regarding ponytail and hijab wear (n=280)

Variable	Construct	N	%
Pain worsened more with	Simple dupatta	23	8.2
	Modern Hijab Wear	24	8.6
	Ponytail and/or hair bun	155	55.4
	Ponytail and Modern Hijab wear both	78	27.9
Cervicogenic Headache	Mild	97	34.6
	Moderate	167	59.6
	Severe	16	5.7
Modern Hijab/ Headscarf wear	Yes	146	52.1
	No	134	47.9
Pain increased with Modern Hijab	Yes	137	48.9
	No	143	51.1
Pain reduces with hijab removal	Yes	193	68.9
	No	87	31.1
Never had headache before headscarf wearing habit	Yes	127	45.4
	No	153	54.6
Habit of making tight ponytail	Yes	124	44.3
	No	156	55.7
Pain increased with tight ponytail	Yes	137	48.9
	No	143	51.1
Pain reduces with tight ponytail removal or loosening	Yes	243	86.8
	No	37	13.2
Never had headache before tight ponytail making habit	Yes	148	52.9
	No	132	47.1
Rounded Shoulders	Yes	156	55.7
	No	124	44.3
Forward Head Posture	Yes	159	56.8
	No	121	43.2

Ear lobes in line with shoulders	Yes	122	43.6
	No	158	56.4
Hyper extended upper cervical spine	Yes	116	41.4
	No	164	58.6
Exaggerated thoracic kyphosis	Yes	132	47.1
	No	148	52.9

About 59.6% subjects had moderate cervicogenic headache and overall headache worsened more with tight ponytail making habit in 55.4% females, regardless of the fact that majority (52.1%) of the population was wearing modern hijab wear/ headscarf than making ponytail (44.3%). Among all the ladies, 52.9% never had cervicogenic headache symptoms before they started making ponytail/hair bun in daily routine whereas 45.5% females had no headache before starting hijab wear/headscarf with modern styles. Postural deviations were also prominently present in which forward head posture and rounded shoulders were mostly present in 56.8% and 55.7% females (Table II).

Cervicogenic headache and postural deviations had statistically significant association with each other ($p=0.040$) and it was analyzed that majority of the subjects had moderate cervicogenic headache along with moderate postural deviations in cervical spine, shoulders and upper back regions. Modern Hijab wear and ponytail making habit were also cross tabulated with cervicogenic headache and it was found that association was statistically significant ($p=0.030$) with ponytail making habit than with modern hijab wear (Table III).

Table III: Chi Square association between cervicogenic headache and postural deviation, modern hijab wear, ponytail (n=280)

Variables	Construct	Cervicogenic Headache			P-Value
		Mild CGH	Moderate CGH	Severe CGH	
Postural Deviations	Mild PD	37	40	4	0.040
	Moderate PD	57	117	9	
	Severe PD	3	10	3	
Hijab with modern styles	Yes	52	89	5	0.210
	No	45	78	11	
Ponytail habit	Yes	48	71	5	0.030
	No	49	96	11	

Discussion

A study was conducted in year 2020 that worked on modern hijab wear just like the current study. The study observed that neck pain was present in ladies wearing hijab. The study concluded that the modern hijab has negative impacts on the musculoskeletal system, presenting neck pain.¹⁹

However the current study not only worked on women wearing hijab but also on women wearing ponytail. Postural deviation was also observed in current study. Another study found that ponytail have a more negative impact as compared to hijab wear just found in the current study but in contrast to the current study postural deviation was not observed in the study. Both of the studies have used Modified Self-Administered Questionnaire. Just like the current study, other studies also found Hijab headaches. The headache starts within hours of wearing the hijab and is relieved within one hour by removing the headscarf.²⁰ The current study found the majority of the females had pain always reduces with the removal of hijab.

Similar to the current another study found that women who wear hijaab for more than five hours a day have reduced ROM in comparison to women who wear hijaab for less than 5 hours a day.²¹ The current study found that abnormal posture of the head and neck increase the level of pain in the female who wore hijab and make a ponytail. In contrast to the current study the postural position is not the reason of cervicogenic Headache. According to the study CGH is idiopathic anyhow good posture could decrease cervicogenic Headache.¹ Cervicogenic Headache and postural deviation occur in the females who wore Hijab and make a ponytail/bun, required significant attention to treat this cause earlier, ignorance will be worsened the pain and posture. Many studies suggested that there should be modification in the style of hijab, reduction in time of wearing hijab and decreased the height of high ponytail. By doing these adjustments of reducing the tight ponytail and bun which cause the load on the cervical structure and lead abnormal posture cervicogenic headache can be avoided.

Recommendations: The study should be conducted on a larger population and with extensive study designs. It should also explore several other factors affecting ponytail versus modern hijab wears on cervicogenic headache and postural deviation. Moreover, educational seminars should be conducted for the general population to guide them the effective strategies to maintain good posture and its efficiency. Because good posture is utmost important in lowering chances of cervicogenic headaches.

Limitations: The time duration was short to accomplish the task otherwise, apart from ponytail/hair bun and headscarf, impact of other risk factors on postural deviation and Cervicogenic Headache could be explored. Due to COVID-19, it was difficult to collect data because of lockdown and online education system otherwise, educational awareness could also be added for all the candidates involved in the research.

Conclusion

Wearing tight ponytail or making hair bun causes cervicogenic headache more than wearing headscarf or Hijab. These trigger postural deviations including forward head and rounded shoulders in addition with cervicogenic headache.

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