ORIGINAL ARTICLES

The prevalence of cervical spondylosis in Muslim community with special reference to Namaz in Agra

Anjana Pandey[1*], AK Singh[2], S Kumar[3], M Chaturvedi[4], Suryakamal Verma[5], P Agarwal[6], Rosmy Jose[7]

[1-7*]P.G.Department of Medicine, S.N. Medical College & hospital, Agra, Uttar Pradesh, India

Abstract

Several studies validate the role of various supportive interventions including loosening exercises, neck exercises and yogasanas in conventional management of cervical spondylosis. The present cross-sectional study proposes that religious meditation and prayers including namaz could also be beneficial in improving the overall health and wellbeing of patients with cervical spondylosis.

Keywords: cervical spondylosis, meditation, prayers, Muslim, Namaz

Introduction

Degenerative process of the spine is an inevitable consequence of ageing. Cervical spondylosis is one of the common chronic degenerative conditions of the neck involving the vertebral bodies (osteophyte formation), intervertebral discs (deformation, disc herniation) and adjacent ligament.[1] Radiological evidence of degenerative changes in the cervical spine is noted in 80-90% of the individuals >50 years of age.[1] Namaz, an Urdu word for prayer, is a form of ritualistic prayer performed by Muslims 5 times a day. The 5 daily namaz are as follows:

1. Fajr: Early morning just before sunrise. It consists of 4 rakats.
2. Zuhr: Afternoon prayers after Zawaal (when sun is perpendicular to earth). It consists of 12 rakats.
3. Asr: Postnoon and before sunset. It consists of 8 rakats.
4. Maghrib: Just after sunset. It consists of 7 rakats.
5. Isha: Late evening after completing sunset and darkness. It consists of 17 rakats.

It is also one of the best forms of exercise with various health benefits. Physical benefits include:

- Improved coordination, circulation, posture, balance, wellbeing, burning of calories, heart and lung function, weight loss and aerobic capacity
- Maintenance of muscle tone and joint flexibility
- Reduced risk of arthritis, heart disease, brain hemorrhage and stroke
- Prevention of sciatica, and retardation of osteoporosis and aging process

Psychological benefits include: peace of mind, mental relaxation, sense of self-control, reduced stress and tension, increased concentration, reduced depression, improved appearance, better sleep, intelligence and learning ability, and enhanced self-regard and esteem.

Each rakat consists of various steps, of which sajdah and sala'm are thought to be protective against the development of cervical spondylosis.

Thus, a namazi, offering namaz 5 times a day, will be performing sajdah and sala'm 48 times per day.

Sajdah

Sajdah helps to make the neck muscles stronger and the forward bending position is a good spinal exercise. In particular, the active movement of the neck and the facial muscles, when the head is being lifted approximately one inch above the ground, exerts a tense pressure on the neck muscles. Stronger cervical muscles protect the cervical vertebrae. Strength of cervical muscles is important as the head rests upon cervical vertebrae supported by cervical musculature.[2, 3]

Sala'm

Sala'm is turning the head towards shoulders so that the side face of the namazi can be seen by the person sitting behind. This complete movement is excellent neck exercise in which the cervical vertebre rotate one on the other and neck muscles (Sterno-Cleido-Mastoid/

Trapezius) are stretched. This in turn exerts a squeezing and twisting pressure on the carotid arteries and veins. The bilateral movement of both eyeballs focusing on the shoulders is also highly beneficial.[2]

The main objective of the present study was to estimate the prevalence of cervical spondylosis among Muslim population in Agra who performed namaz four times a day or more, and those who performed namaz infrequently (<3/week). The study also evaluated whether early regular neck muscles exercise has any preventive effect on cervical spondylosis.

Materials and methods

The cross-sectional study was carried out at Postgraduate Department of Medicine, S.N. Medical College, Agra, India for a period of one and half years. Two hundred study participants were selected from Muslim inhabitant areas by simple random sampling. The study was approved by the institutional ethical committee. The subjects were categorized into two groups, group A: Muslim male between the age group 40-60 years who performed namaz four times a day or more, and group B: Muslim male between the age group 40-60 years who performed namaz infrequently (<3/wk). Collection of detailed history and thorough clinical examination were carried out for all the participants after obtaining informed consent. The study was pretested on 10% of total population size.

The inclusion criteria considered were: Muslim males between the age group 40-60 years who performed namaz four times a day or more, and the same age group subjects who performed the prayer infrequently (<3/wk.). The subjects were cooperative. The exclusion criteria were: non-cooperative persons, individuals with a history of neck trauma, heavy weight bearing/occupation-related cervical spondylosis, any other type of arthritis or diabetes mellitus.

The diagnostic criteria for cervical spondylosis were: clinical manifestations, pain on extension of neck, and positive Spurling's sign. The data analysis was performed using Chi-square test. P <0.05 was considered to be statistically significant.

Results

The study included 200 Muslim namazi males of the age group between 40 and 60. Evaluation of medical history and clinical examinations were carried out for all the enrolled participants. Out of the 200 subjects, the number of namazis enrolled under different age groups 40-45, 46-50, 51-55 and 56-60 were 45, 65, 47 and 43 respectively. The corresponding number of regular and infrequent namazis recruited in the aforementioned age groups were 26 and 19, 43 and 22, 27 and 20, and 22 and 21 respectively. The distribution of the subjects across all the age groups was uniform and the variation according to the age was statistically non-significant (χ^2= 2.54, P=0.47). Comparison of the subjects on the basis of exercise demonstrated that 30 persons were doing regular exercises and none of them developed cervical spondylosis (P <0.05) (Table 1). This showed that regular exercises have some preventive role in development of cervical spondylosis. Out of 62 subjects who drank milk regularly, 11 developed cervical spondylosis. Whereas, among the 138 persons who did not drink milk regularly, 36 developed cervical spondylosis (P <0.05).

Frequency of various symptoms related to cervical spondylosis in regular namazi and infrequent namazi population was compared. Difference in frequency of most of the symptoms and signs were statistically significant, except for pain with movement of neck, burning sensation on outer aspect of hand, and various neurological deficits (P >0.05) (Table 2).

Out of the 118 males who performed regular namaz, only 17 had cervical spondylosis, while among the 82 males who

Table 1: Prevalence of cervical spondylosis among persons who exercised regularly vs. who did not exercise regularly

Study groups	Exercise regularly	Did not exercise regularly	Total
With CS	0	47	47
Without CS	30	123	153
Total	30	170	200

Table 2: Frequency of various symptoms related to cervical spondylosis in regular namazi and infrequent namazi population

Symptoms	Regular namazi (out of 118)	Percentage (%)	Irregular namazi (out of 82)	Percentage (%)	Chi-square value/ P-value
Pain in neck	22	18.64	27	32.93	5.3355/0.020895
Pain associated with neck movement	15	12.71	16	19.51	1.7082/0.19122
Neck stiffness	24	20.33	39	47.56	16.6152/4.6E-05
Pain radiating to shoulder	4	3.34	10	12.20	5.762/0.016377
Burning sensation on outer aspect of hand	4	3.34	6	7.32	1.5709/0.21007
Giddiness	6	5.09	22	26.83	18.9994/1.3E-05
Occipital headache	6	5.09	22	26.83	18.9994/1.3E-05
Various neurological deficit	4	3.34	6	6.32	1.5709/0.210077

Table 3: Percentage prevalence of cervical spondylosis in total study population and in different age groups

Age groups	With CS	Without CS	Prevalence percentage (%)	Total
40-45	8	37	17.778	45
46-50	12	53	18.462	65
51-55	12	35	25.532	47
56-60	15	28	34.882	43
Total	47	153	23.500	200

performed irregular namaz, 30 had cervical spondylosis (P<0.05). This showed that namaz has preventive role in development of cervical spondylosis (Table 3).

The study population was sub-classified into various age groups such as: 40-45 yrs, 46-50 yrs, 51-55 yrs, and 56-60 yrs. The estimation of percentage prevalence of cervical spondylosis in each group showed that the value was significant in the first 3 sub-groups and insignificant in 56-60 yrs group (Table 4).

The percentage prevalence of cervical spondylosis noted in the 45-50, 51-55 and 56-60 age groups were 17.778%, 18.462%, 25.532% and 34.882% respectively (Table 5). Overall percent prevalence of the disease noted was 23.5%. The prevalence noted after excluding persons who exercised regularly was 27.647%.

Difference in percentage prevalence of the disease in the study population was statistically significant even after excluding persons who exercised regularly (18.478% and 38.462%, P 0.0036%) in regular and infrequent namazi groups respectively.

Discussion

Cervical spondylosis is a degenerative disc disease usually

Table 4: Prevalence of cervical spondylosis among regular namazi and infrequent namazi in various subgroups of age

Age groups	Regular namazi				Infrequent namazi				P value
	With CS	Without CS	Percentage (%)	Total	With CS	Without CS	Percentage (%)	Total	
40-45	2	24	7.692	26	6	13	31.579	19	x^2=4.29, p=0.024
46-50	5	38	11.628	43	7	15	31.818	22	x^2=3.9412, P=0.047
51-55	4	23	14.812	27	8	12	40	20	x^2 =3.8335, P=0.036
56-60	6	16	27.273	22	9	12	42.857	21	x^2=1.1488, P=0.27
Total	17	101	14.407	118	30	52	36.585	82	x^2=13.2374, P=0.000274

F- female, M- male, BMI- body mass index, ESR - erythrocyte sedimentation rate, CRP- C-reactive protein, DAS 28 - disease activity score of 28 joints, TNF-α -Tumor Necrosis Factor , IL-6- Interleukin-6, IL-1- Interleukin-1, EPC- Endothelial Progenitor Cell, RF- Rheumatoid Factor,
*P <0.05, Statistically significant versus seronegative

Table 5: Prevalence of cervical spondylosis among regular namazi and infrequent namazi

Study groups	Regular namazi	Infrequent namazi	Total
With CS	17	30	47
Without CS	75	48	123
Total	92	78	170
Prevalence of CS (%)	18.478	38.462	27.647

causing intermittent neck pain in middle-aged and elderly patients. Activity modification, neck immobilization, isometric exercises, and medication are usually recommended for pain alleviation. Namaz is an excellent form of exercise, especially for cervical vertebrae and neck muscles, and have various health benefits. The present study has shown significant difference in prevalence of cervical spondylosis among persons who exercise regularly compared to those who do not exercise regularly, irrespective of performing namaz. In addition, a significant difference in the prevalence of cervical spondylosis among regular namazi was noted than infrequent namazi. Prevalence of cervical spondylosis noted in the various age subgroups such as 40-45 yrs, 46-50 yrs, 51-55 yrs, and 56-60 yrs were 17.78%, 18.46%, 25.53% and 34.88% respectively.

There is certain anecdotal evidence recommending dietary modifications including the consumption of milk to prevent/ reduce the symptoms of cervical spondylosis. However, the present study has ruled out the protective role of milk in

reducing the risk of cervical spondylosis.

Cervical spondylosis is a degenerative disc disease usually causing intermittent neck pain in middle-aged and elderly patients. Performing regular namaz may assist in preventing cervical spondylosis, as the practice consists of several postures including stretching, bending and kneeling. This religious practice assists in strengthening neck muscles. The study by Sayeed *et al.* substantiate the present study findings. The researchers have stated that "*it is uncommon to find a person offering regular Salah prostrating at least 34 times a day to suffer from cervical spondylosis or myalgias*". Similarly, a case study by Badsha *et al.* has reported that the spinal mobility has been significantly improved in a 35-year-old patient suffering from ankylosing spondylosis after following an intensive regimen of Islamic prayer, for ~2 hours daily for one month.

In summary, the present study findings corroborate the assumption that religious meditation and prayers could be beneficial in improving the overall health and wellbeing. These results also reiterate the need to consider the beneficial effects of such routine prayers beyond its religious aspect.

Conclusion

Life style changes, in the form of mild regular neck muscle exercise may assist in reducing the prevalence of cervical spondylosis, thereby contributing to improve the quality of life. Research and evidence to establish relationship between cervical spondylosis and exercise are sparse and more studies with larger sample size are needed to establish preventive role of early regular neck muscle exercise on decreasing the burden of cervical spondylosis.

Competing interests

The authors declare that they have no competing interests.

Citation

Pandey A, Singh AK, Kumar S, Chaturvedi M, Verma, S, Agarwal P, Jose R. The prevalence of cervical spondylosis in Muslim community with special reference to Namaz in Agra. IJRCI. 2016;5(1):OA1.

Submitted: 5 May 2016; **Accepted:** 30 August 2016,;**Published:** 4 January 2017

*Correspondence: Dr. Anjana Pandey, Associate professor, P.G. Department of Medicine, S.N. Medical College & hospital, Agra, Uttar Pradesh, India
docapg@gmail.com

References

1. Riley L, Mili S, Trinh-Shevrin C, Islam N. Using qualitative methods to understand physical activity and weight management among Bangladeshis in New York City, 2013. Prev Chronic Dis. Prev Chronic Dis. 2016 Jul 7;13:E87.
2. Badsha H, Tak PP. Can Islamic prayers benefit spondyloarthritides? Case report A of a patient with ankylosing spondylitis and increased spinal mobility after an intensive regimen of Islamic prayer. Rheumatol Int. 2008 Aug;28(10):1057–9.
3. Sayeed SA, Prakash A. The Islamic prayer (Salah/Namaaz) and yoga togetherness in mental health. Indian J Psychiatry. 2013 Jan;55(Suppl 2):S224-230.
4. Ahmad S, Shrama S, Shukla AK, Pant B, Tripathi MK. The Efficacy of Islamic Prayer (Namaz) as Spiritual, Psychological and Physical Well Being to Health. International Journal of Contemporary Microbiology. 2015;1(2):33.