



ORIGINAL RESEARCH PAPER

Medical Science

EFFECT OF OM MANTRA CHANTING ALONG WITH ANULOM VILOM PRANAYAMA ON EXAMINATION STRESS IN MEDICAL AND PARAMEDICAL STUDENTS

KEY WORDS: Pulmonary function test, OM Mantra Chanting, Anulom Vilom Pranayama.

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ABSTRACT

Introduction: Mantra: In its most rudimentary form, a mantra is made of syllables which exert their influence by means of sound (vibrations). Om meditation is said to cure many illnesses. The vibrations that it creates give a sense of positivity to our life. It is believed that Om meditation takes you closer to God.

Material and Methods: This is prospective and observational study. Total 80 students of Medical and paramedical students were participated for this study. They were divided into study group (40) and control group (40). The study group were practice Om Mantra chanting along with Anulom Vilom Pranayama daily for 40 minutes. All the subjects were then administered PSS.

Results: In the pre-intervention, study group had a Perceived stress scale value of 19.10±4.53, which has been decreased to 14.43±4.24 in the post intervention, which was found to be highly significant (P=0.001). Similarly, the control group had a mean PSS value of 19.60±3.06 which has been decreased to 19.16±3.31, the decrease was not statistically significant (P=0.564). In the post intervention, study group had a mean PSS (14.43±4.24) and control group had a mean heart rate (19.16±3.31) the change in the PSS in the two groups differed. Whereas study group had greater decrease in PSS compared to control group, which was found to be highly significant (P=0.001).

Conclusion: Our study demonstrates that pranayama practice is effective in reducing perceived stress but significant benefit on physiological parameters is seen in only study subjects practicing pranayama.

INTRODUCTION

Mantra: In its most rudimentary form, a mantra is made of syllables which exert their influence by means of sound (vibrations). As one would have personally experienced, different syllables have different vibration patterns which affect different parts of the body. [1] Each syllable resonates with certain organ or part of the body. For example, by chanting "aaaaaaa", one can feel the sensation and hence resonance of nervous system in the stomach and chest region. Chanting "uuuu" creates sensations in the throat and chest region and resonates with them. Similarly, chanting/humming "mnmnm" resonates with the nasal cavity as well as the skull/brain region. [2]

Om meditation is said to cure many illnesses. The vibrations that it creates give a sense of positivity to our life. It is believed that Om meditation takes you closer to God. Om meditation brings in self-realization and a feeling of oneness with the Lord. Om meditation is believed to be a stress buster. [3] It helps in calming the brain. Among all benefits that 30 meditation offers, the most important of all is that it helps you relieve yourself from thoughts that obstruct your thinking process. [4]

MATERIAL AND METHODS

This is prospective and observational study. Males and females with Age group 20–30 years old were included. Significant cardiovascular and respiratory systems complications were excluded. Addiction to alcohol and Smoker were excluded.

METHOD:

Total 80 students of Medical and paramedical students were participated for this study. They were divided into study group (40) and control group (40).

The study group were practice Om Mantra chanting along with Anulom Vilom Pranayama daily for 40 minutes.

Anulom Vilom Pranayama for 10 minutes. OM Mantra chanting meditation for 20 minutes and 10 minutes for relaxation (5 minutes preceding the OM Mantra Chanting and 5 minutes post meditation).

The control group were not practice Om Mantra chanting along with Anulom Vilom Pranayama) during study.

Study group were not performed any physical exercises or any type of yogic exercises during the study.

Perceived stress scale

All the subjects were then administered PSS. It comprises of 10 items, four of which are reverse-scored, measured on a 5-point scale from 0 to 4. PSS scores are obtained by reversing responses (e.g., 0 = 4, 1 = 3, 2 = 2, 3 = 1 and 4 = 0) to the four positively stated items (items 4, 5, 7, and 8) and then summing across all scale items. Total score ranges from 0 to 40.

RESULTS

Table 1: Age distribution of patients studied

Age in groups (Years)	Study Group		Control Group	
	No	Percentage	No	Percentage
20-22	19	47.5	21	52.5
23-25	13	32.5	11	27.5
26-28	7	17.5	6	15
29-30	1	2.5	2	5
Total	40	100	40	100
Mean ± SD	21.43 ± 1.21		22.02 ± 1.43	

In table 1, the mean age of the subjects was 21.43 ± 1.21 for study group, 22.02 ± 1.43 for control group. These differences were not statistically significant (p=0.342)

Table 2: Comparison of Before and After 3 months PSS between study and control group

PSS	Study Group	Control Group	p value
Before (n=40) Mean ± SD	19.10±4.53	19.60±3.06	0.623
After 3 months (n=40) Mean ± SD	14.43±4.24	19.16±3.31	0.001
p value	0.001	0.564	

Perceived stress scale (PSS) values, Values are expressed as mean ± SD.

In the pre-intervention, study group had a Perceived stress scale value of 19.10±4.53, which has been decreased to 14.43±4.24 in the post intervention, which was found to be highly significant (P=0.001). Similarly, the control group had a mean PSS value of 19.60±3.06 which has been decreased to 19.16±3.31, the decrease was not statistically significant (P=0.564).

In the post intervention, study group had a mean PSS (14.43±4.24) and control group had a mean heart rate (19.16±3.31) the change in the PSS in the two groups differed. Whereas study group had greater decrease in PSS compared to control group. which was found to be highly significant (P=0.001).

Table 3: Pulmonary function parameters before and after between study and control group

Parameters	Study Group		Control Group	
	Before (n=40) Mean ± SD	After (n=40) Mean ± SD	Before (n=40) Mean ± SD	After (n=40) Mean ± SD
FVC	3.23±0.93	3.43±0.93	3.55±0.79	3.60±0.81
FEV1	2.62±0.67	2.80±0.7	2.76±0.59	2.80±0.58
FEV1 /FVC (%)	81.35±7.08	82.19±5.24	77.32±3.31	79.41±3.56
SVC	2.84±0.80	3.20±0.83	3.24±0.88	3.29±0.77
MVV	74.31±20.11	85.33±24.42	75.86±20.11	74.84±26.11

Forced vital capacity (FVC), Forced expiratory volume in 1st sec (FEV1), Maximum voluntary ventilation (MVV) and Slow vital capacity (SVC)

DISCUSSION

We observed significant reduction in PSS scores in Anulom Vilom pranayama groups. Therefore, both types of Anulom Vilom pranayama practice were equally effective in reducing perceived stress in both Group 1 and Group 2 subjects. Reduction in stress may have occurred due to better autonomic tone (higher parasympathetic and lesser sympathetic tone) observed in Group 1 and 40 subjects and reduced stress may have resulted in improved cardiovascular functions in the Anulom Vilom pranayama groups. Anulom Vilom pranayamas can be considered as deep breathing exercises performed at different frequencies of respiration. One study has hypothesized how pranayamic breathing interacts with the nervous system affecting metabolism and autonomic functions.^[5]

During above tidal inspiration (as seen in Hering Breuer's reflex), stretch of lung tissue produces inhibitory signals by action of slowly adapting stretch receptors and stretch of connective tissue (fibroblasts) localized around the lungs generates hyperpolarization currents, which are propagated through neural and non-neural tissues and both of them cause synchronization of neural elements in heart, lungs, limbic system and cortex.^[6] Inhibitory current synchronizes rhythmic cellular activity between cardiopulmonary center and central nervous system and also regulates excitability of nervous tissues indicative of state of relaxation.^[7] Hyperpolarization of tissues manifests itself in parasympathetic like change. Synchronization within the hypothalamus and the brain stem is mainly responsible for the parasympathetic response. Modulation of the nervous system and decreased metabolic activity is indicative of the parasympathetic state.^[8]

The decrease of oxygen uptake due to meditative practice influenced the reduction of the total caloric expenditures that, as a variable derived from VO₂, also had a statistically significant reduction of 35% which proves that oxygen consumption increases with pranayama practice.^[11-17] Results of our study indicate that there was trend towards increase in

the ventilatory function parameters including FEV1, FVC, FEV1/FVC, SVC and MVV between before and after 3 months. Improvement in the study subjects may have occurred due to strength and endurance of respiratory muscles and improvement in cardio, respiratory parameters. Our findings are in congruence with the previous studies of Udupa et al.^[18] Our study substantiates the claim that yoga practice is beneficial on the pulmonary function in normal subjects.

CONCLUSION

To summarize, our study demonstrates that pranayama practice is effective in reducing perceived stress but significant benefit on physiological parameters is seen in only study subjects practicing pranayama. Pulmonary function test parameters were recorded as before and after sessions. Our results showed significant increase in pulmonary function parameters after regular practice of pranav Anulom Vilom pranayama. The present study has shown that adding comprehensive yoga based breathing exercises (OM Mantra Chanting along with Anulom Vilom Pranayama) to the daily life to improve the lung function.

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