EFFECT OF APANA MUDRA AND PRANA MUDRA ON RESTING HEART AND BREATHING RATE AMONG YOUNG ADULTS**NAMAN SARASWAT¹, DR SANDEEP KUMAR²**

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ABSTRACT: Yoga is the science of right living and, as such, is intended to be incorporated in daily life. It works on all aspects of the person: the physical, vital, mental, emotional, psychic and spiritual. Yogmudra is effective in improving medical conditions specially in life style diseases. It unites the individual consciousness with the supreme consciousness, or the outer nature with the inner nature. For the present study, male and female students aged between 17-25 years were included. Yogmudra intervention (apan mudra and prana mudra) was tried as per experimental design and both Resting Heart Rate and Breathing Rate parameters were recorded before and after performing Yogmudra. we have observed that regular practice of apan mudra and prana mudra in normal healthy person create and improve healthy heart and respiratory systems and improves cardi-respiratory fitness of individuals.

Keywords: Yogmudra, Apana mudra, Prana mudra, Resting Heart Rate, Breathing Rate.

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INTRODUCTION

Mudras being a combination of subtle physical movements alter mood, attitude and perception, which in turn deepens awareness and concentration. A mudra may involve the whole body in a combination of Asana, Pranayama, Bandha and visualization techniques, or it may even be as simple as

ahand's position. Mudras are higher practices which awaken the pranas, chakras and kundalini and so, the pranic balance gets established within the koshas. A higher state of consciousness gets induced through the redirection of subtle energy to the upper chakras. A unique link is set up by each mudra and has a corresponding distinctive

effect on the body, mind and prana. In hatha yoga, mudras are used in combination with pranayama (yogic breathing exercises), usually in a seated posture, to activate various parts of the body engaged with breathing and to work on the flow of prana, bindu, bodhicitta, amrita or consciousness in the body.

Yoga mudras are simply are used in both Hindu and Buddhist traditions. Mudras are also a form of yoga which is done while practicing pranayama and it is a kind of medication which allows direct flow of energy into our body. These mudras in yoga are performed with hands, the yoga hand mudra, but there are few mudras also which can be performed with whole body so by practicing these yoga mudras mediates our mind and helps us to heal emotionally. Mudra uses techniques which stimulate the different parts of our brain and heart promoting relaxation and calmness. Mudras are used to express and emphasize the intentions of our mind.¹

Studies show that the Mudra Therapy has not only improves the physical health but also improves the physiological effect of relaxing the muscles surround the small blood vessels which allows the blood to

flow more easily. Though numerous modalities and pharmacological management are practiced reducing blood pressure, the outbreak of hypertension is still sweeping to high. So, there is a need for additional coping behavior such as Mudra Therapy which has greater and positive role in the reduction of high blood pressure.²

There have been several studies that examined the effectiveness of Mudra Therapy on level of blood pressure among hypertensive clients, Tripathi Deepti, conducted a study focus was on yoga hand mudra and its beneficial effect for controlling high blood pressure. Study was carried out on 34 subjects randomly, out of which 15 were diagnosed as hypertensive and 19 as normal. Yoga hand mudra was tried out on patients suffering from high blood pressure aged between 35- 65 years. Blood pressure and heart rate measurements of the subjects were recorded before and after performing yoga hand mudra. After practicing the yoga hand mudra, there was a significant reduction in both systolic and diastolic blood pressure. The study concluded that yoga hand mudra was found to be effective in normalizing high blood pressure.³

Hypertension is a major worldwide public health problem and a term used to describe HBP. It is a condition that occurs as a result of repeatedly elevated blood pressure exceeding 140 over 90 mmHg, it has been called as silent killer as it is usually without symptoms.⁴ Hypertension are known to have a two-fold higher risk of developing coronary artery disease four times higher Risk of congestive heart failure and seven times higher risk of cerebrovascular disease compared to normotensive subjects.⁵ WHO (2002) reports that hypertension causes 5 million premature death each year worldwide causing 13% of global Fatalities.⁶ The goal of hypertension management is to prevent short and longterm complications by achieving and maintaining the blood pressure at 140/90 mm Hg or lower. Therefore, lifestyle modifications should be actively performed not only before but also after starting of antihypertensive medications to improve patients controlling outcomes. Lifestyle modifications were including; weight control, limitation of alcohol consumption, increased physical activity, yoga, mudras, increased fruit and vegetable consumption, reduced total fat and saturated fat intake, and

smoking cessation and also Mudra Therapy .⁷

PRANA MUDRA (MUDRA OF LIFE)

Prana mudra awakens the latent prana shakti, vital energy, and dispenses it throughout the body, increasing strength, health and confidence. It develops awareness of the pranic system, the nadis and chakras, and the subtle flow of prana in the body. It instils an inner attitude of peace and equanimity by adopting an external attitude of offering and receiving energy to and from the cosmic source. Prana mudra is also considered to be a pranayama practice which raises prana by encouraging correct breathing.

APANA MUDRA

The main idea of apana mudra is to regulate apana vayu and henceforward clear imbalances and disturbances of tridoshas from body. While performing this mudra middle and ring fingers represent outward and downward flow of energies. Combining these fingers with fire element thumb the pranic energies are channelized in correct directions. In apana mudra, the tip of the middle and ring finger are joined with the tip of the

thumb to balance the Apana Vayu present in the body.

METHODOLOGY

For the study Pre-test and Post-test randomized group experimental design was used. For the present study 20 male and 20 female students for experimental group. The following practices were performed by the experimental groups for 4 weeks except Sundays and holidays. The training program was prepared for the students keeping in view to improve the selected physiological characteristics. Preparation and Gayatri Mantra: 3 minutes followed by yogmudra practice for 15 minutes and ending om for 2 minutes. In this study physiological characteristics were measured pre- and post-training thorough resting heart rate and breathing rate. The study was conducted through pre- and post-experimental research method in which standardized methods have been used for collection of data. Pre-test and Post-test data of selected physiological characteristics were collected with the help of reliable tools of measurements to find out the significant difference. The data was collected with the reliable instruments and tools before and after giving the Yogmudra Intervention to the experimental group. For the purpose of

the study, descriptive statistic (mean, standard deviation, and independent t-test as the statistical technique and the level of significance was set at the 0.05 level.

Table 1: Impact of Yoga Mudra on Resting Heart Rate:

S. no.	Before yoga mudra Mean±SD	After yoga mudra Mean±SD	P value
Male students	75.9±2.94	66.5 1±4.08	0.01
Female students	75.4±0.93	66.9±1.25	0.001

Figure 1: Impact of Yoga Mudra on Resting Heart Rate. Value=Mean±SD

Significance of difference from control
(**P<0.01, ***P<0.001 Student's 't' test)

Table 2: Impact of Yoga Mudra on Breathing Rate:

S. no.	Before yoga mudra Mean±SD	After yoga mudra Mean±SD	P value
Male students	16.8±0.29	12.9±0.35	0.001
Female students	16.4±0.37	13.4±0.34	0.001

Figure 2: Impact of Yoga Mudra on Breathing Rate. Value=Mean±SD

Significance of difference from control
 (**P<0.01, ***P<0.001 Student's 't' test)

RESULTS AND DISCUSSION

The data for 20 students who performed yogmudra for 15 minutes were analyzed. The results obtained are expressed as mean±standard deviation (Table-1 and Table-2)

The effect of yogmudra on experimental group of male and female students measuring Resting Heart Rate (bts/min) is as shown in table -1. Similarly Breathing Rate is as shown in table -2

Resting Hearting Rate data shows statistically significant results after performing yogmudra. Further Breathing Rate also showed similar results. All experimental values are significantly higher than pretest result.

It is evident from the results that the students who were exposed to yogmudra module of apana and prana mudra intervention exhibited enhanced level of cardiac and respiratory efficiencies. The results are in tune with the earlier findings which reported that the mudra therapy is effective in regulating heart beats, blood pressure and breathing rate of individuals.

Other researcher also found that use of yoga hand mudras practice significantly controls blood pressure and helps in maintaining healthy heart and lungs. Another research study reported that practice of yoga hand mudra helps and improves cardiac and neurological parameters in preventing health problems.⁸

The findings of the present study reveal that resting heart rate and resting breathing practice of apan mudra and prana mudra significantly improves cardiac and respiratory efficiency of individuals and resting heart rate and respiratory rate significantly lowered among individuals representing healthy heart and respiration. The reduction in heart rate and breathing rate have been documented.⁹

During yogmudra practice this has also been observed that time and inclusion of other hand mudras are also a significant factor. if is performed for longer span and included with other yogic actions like kriya and bandha it may bring more effective results in controlling heart rate, breathing rate, blood pressure and can helps in other physical problems and to improve the physical capacities and efficiencies of individuals.

CONCLUSION

Regular practice of mudra yoga may reduce the higher resting heart rate to normal as indicator of healthy heart and respiration and it helps in improvement of cardio - respiratory fitness of individuals.

It may be concluded from the findings from the present study, that yog mudra interventions increases heart and respiratory fitness as indicated by resting heart and breathing rate in a healthy person. A significant level of heart and breathing rate decrease was indicating better heart and respiration capacity. Therefore, it is suggested thatyogmudra practices is most appropriate solution of many physical and mental health related problems.

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