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THE THREE-STEP RHYTHMIC BREATHING: A KEY TO BALANCE MIND AND BODY

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Abstract : This paper presents empirical observations on the roots and progression of structured breathing practices in India, ranging from techniques like Pranayama to scientifically resonant practices like Three-Step Rhythmic Breathing. This paper examines the historical as well as philosophical framework of such techniques. This study on 3-step rhythmic breathing gives valuable outputs to better understand the impact on various demographic groups, including students, working professionals, and regular practitioners. This research integrates a comprehensive methodology of result-oriented questionnaires and statistical analysis of collected data. This research aims to evaluate the impact of 3SRB on stress levels, anxiety, and overall well-being in these groups. The study will effectively contribute to understand the benefits of the 3SRB technique for individuals and society at a large level.

IndexTerms **- 3SRB, rhythmic breathing, harmony, prana, holistic well-being**

1. INTRODUCTION

1.1 THE BREATH: ANCIENT INDIAN PERSPECTIVE

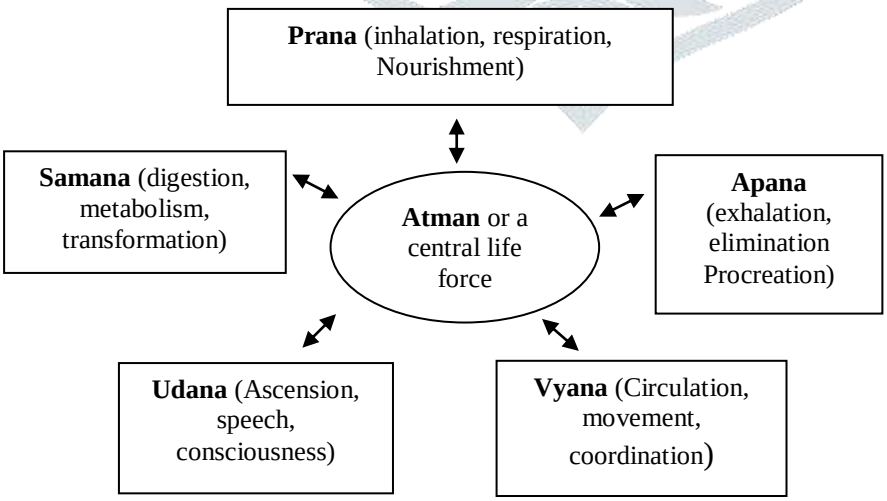

Chart 1) Five life forces (Panch-pranas) of the human body as described in Atharvaveda

Prakriti is considered the source of the universe by ancient Indian philosophy. Prakriti is said to be made up of *Akash Tatva* – the space element, and *Prana Tatva* – the force behind life. Akasha Tatva gives rise to the 24 Gunas or qualities in creation. Meanwhile, Prana Tatva – a dynamic energy- drives all movement and transformation within the universe. Ancient Indians considered Prana as a crucial element for sustained human life, so they developed practices like Pranayama to manage its flow in the human body.

Ancient Indian philosophy essentially describes the five life forces (*Panch-Pranas*), which are responsible for maintaining the effective physiological and psychological conduct of the human body. *Prana* is the life force associated with inhalation, maintained respiration, and nourishment of the body. *Apana* is responsible for exhalation, termination, and procreation. *Vyana* is the circulating energy ensuring smooth movement, coordination, and the distribution of nutrients throughout the body. *Udana* is the force that ascends and enables the vocal function, spiritual upliftment, and consciousness. Whereas the *Samana* is digestive energy that promotes efficient nutrient absorption and metabolism (Zysk, 1993). Chart 1 illustrates the dynamic nature of the five life forces, which ultimately converge upon the central life force, or *Atman*, as described in Indian philosophy.

1.2 Pranayama: The Foundation of Structured Breathing Practices in India

The roots of structured breathing in India can be inferred from various ancient texts, such as the *Bhagavad Gita* and *Upanishads*. *Yoga Sutras*, written by Patanjali between 500 BCE and 400 CE, also describe that one can become a master of *Prana Vayu* by the conscious control of inhalation and exhalation in human breathing (Singh, Wilczyńska-Kwiatek, Fedacko, Pella, & De Meester, 2009). The word *Pranayama* is composed of two words: *Prana*, referring to the life-sustaining force, and *Yama*, referring to control or regulation.

The multi-faceted characteristic of the human body is often described as "*Pancha-Kosha*" in ancient Indian thinking. One of them in this system is the "*Pranayama Kosha*". The *Pranayama Kosha* is the layer of energy, including the five Pranas. It is considered to be a bridge between the five elements and our sensory mind. The intent behind practicing pranayama was to purify the energy flow mediums in our body known as "*Nadis*". Thousands of these flow mediums are believed to exist that serve as a medium for the flow of Prana (Pandey, Gupta, & Garg, 2020).

Cardiovascular health is life-supporting for human beings. The regular practice of Pranayama can improve heart rate variability (HRV) (Nivethitha, Mooventhan, & Manjunath, 2016), which is the variation in time between heartbeats. HRV is an indicator of autonomic nervous system function. Higher HRV is associated with better cardiovascular health and lower stress. Pranayama and meditation, when practiced together, have shown beneficial effects on cardiovascular function in healthy individuals. Previous studies have also seen a considerable reduction in resting heart rate, systolic blood pressure, and diastolic blood pressure in participants after a short intervention program (Ankad, Herur, Patil, Shashikala, & Chinagudi, 2011).

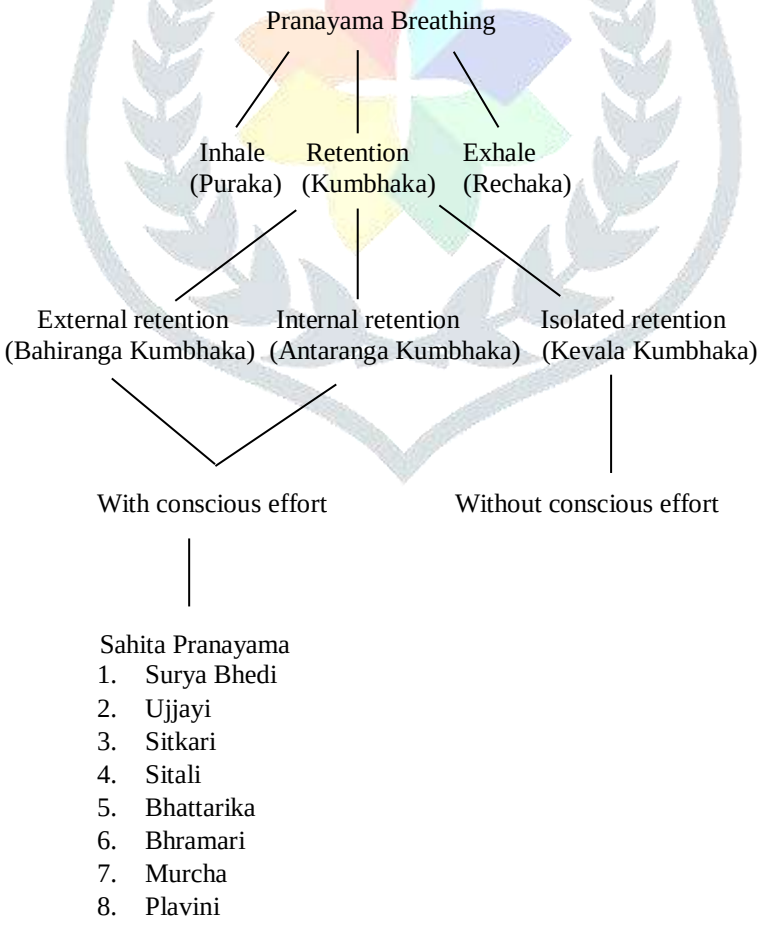

Chart – 2) Types of Pranayama techniques according to Hath Yoga Pradipika (Adapted from Ashish, 2024)

1.3 Synchronizing the Self: The Dynamics of Mind-Body Balance

Human life can be made more effective by diligently integrating our thoughts, feelings, and physical actions. "A balanced mind can be understood by the characteristic of maintaining the effective psychological functioning of an individual regardless of any situation." A sound mind is very helpful in making logical and intelligent decisions in different situations.

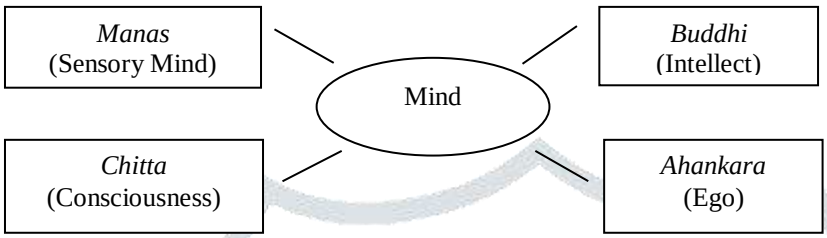

Chart 3) Four parts of the mind as described in the Sarika Upanishad

"A balanced body can be defined as the harmonious and effective physiological functioning required for reaching the potential of an individual." An individual human being possesses numerous capabilities to physically act. The potential is not fixed for everyone, so it varies from person to person, and it can also be developed over a while.

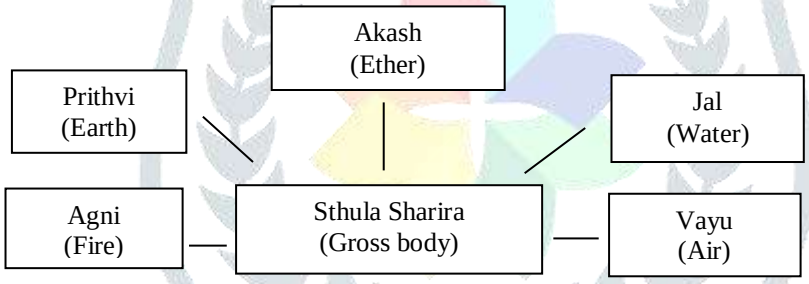

Chart 4) Sthula Sharira and its 5 main elements as per Indian Philosophy

The "balance mind and body" leads to powerful synergy, ultimately directing to a life filled with inner peace, physical potentialities, and purpose-driven actions. The concept of the mind-body balance can also be understood by its mutually affecting characteristics. Practices of ancient Indians such as *Samkhya*, *Yoga*, and *Vedanta*, as well as traditional medicine like *Ayurveda*, have both investigated and developed practical strategies, including breath control, body posture, and mindfulness training, to balance the mind and body (Kumar & Shashirekha, 2023).

2. The 3-step Rhythmic Breathing

2.1 Historical Overview of 3-Step Rhythmic Breathing

It is complicated to perfectly trace the origin of the 3SRB in India. However, it mostly engages with the concepts of sage Patanjali in the Yogasutra. Although no solid evidence of a 3-step approach exactly like this one that was known before the last century has been found. More recently, the technique was introduced by spiritual figure Shri S. N. Tavaria, who made this technique simple for the modern world.

2.2 The 3-Step Rhythmic Breathing: A Detailed Examination

Table 1**)** The methodology of the 3SRB Technique

Step	Action	Duration/Count	Key focus
Inhalation	Simultaneous rise of chest and abdomen	1-2-3	A Deep breath from the chest to lower abdomen
Hold	Brief pause	Silent	Maintaining the breath
Exhalation	Simultaneous drop of chest and abdomen	5-6	Air being released in a controlled manner
Cycle	Complete Inhale-Hold-Exhale	6 beats	Smooth and harmonious transition
Target	Repetitions per minute	36 cycles	Consistent practice for optimal benefit

Here is the simple breakdown of the key components of 3-step rhythmic breathing technique: 1) Technique – The simple nature of 3SRB includes coordinated movement between chest and abdomen 2) Volume – In this step deep natural air is filled in the lungs, all the way from down to the lower abdomen 3) Rhythm – The three step approach of breathing involves rhythmic pattern of 3-second inhale and 2-second exhale, hence each full breath is about five seconds long, roughly the same as six heartbeats (Tavaria, n.d.).
One way that is useful to keep rhythm is to count "one, two, three" while breathing in, hold for a silent "four," and then count "five, six" while exhalation. The goal is to eventually breathe this way comfortably for twelve full cycles every minute. The given Table-1) best describes the methodology.

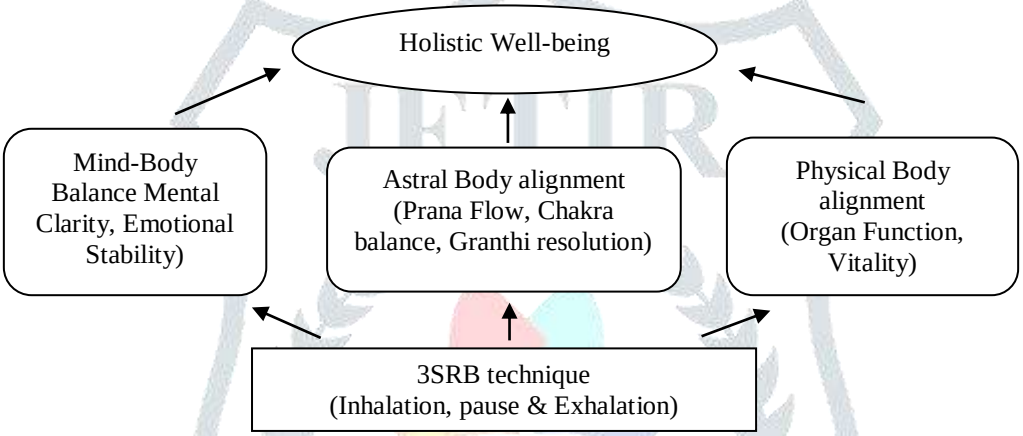

Chart 5) The impact of the 3SRB technique aligning with holistic well-being of human beings

The name “rhythmical breathing” comes from the fact that it coordinates the breathing rhythm of the physical and the astral bodies (Tavaria, n.d.), synchronizing as much as possible at a rate of 12 breaths per minute for the intake of the astral body prana.
3SRB focuses on aligning the prana intake of the astral body with the physical body's breathing. It was pointed out by Tavariaji that the origin of diseases is closely linked to astral body. To achieve synchronization between the physical and astral bodies, Dissolving *Granthis*, which obstruct Prana flow in the human body, is highly essential. It enhances the quality of Prana and restores proper functioning of the chakra between the physical and astral bodies (Tavaria, n.d.).
The 3SRB practice suggested by Tavariaji is a scientifically aligned practice performed in a specific order to circulate energies effectively. The chart-5) best describes the effectiveness of 3-step rhythmic breathing, aligning ultimately with the holistic well-being of an individual human being.

2.3 The Practice Procedures of The 3SRB Technique Refining Exercises

The power of rhythmic breathing expands to a significant extent when refining exercises are performed along with the regular 3SRB technique. The refining exercises are pertinent in nature with physiological well-being as compared to the regular 3SRB technique that possesses dynamic characteristics for practice. This section provides a procedure-based overview of the refining exercise of the 3SRB technique.
Phase 1: - In this first body is stretched to its potential, then a circular core motion is performed by moving the hands. This phase initially follows normal breathing, though while performing SWISO - stretch with inhale, stretch out (3SRB, n.d.) deep inhalation pattern is followed. Key focus of this phase is to prepare the body for deeper breathing.
Phase 2: - It comprises various steps, including chest rhythmic breathing, abdominal rhythmic breathing, Leg and Torso Rhythmic Breathing, stepped inhalation with forceful exhalation, and equal interval breathing (3SRB, n.d.). The diverse array of body movements takes place to perform these steps.
Phase 3: - In the final act of refining exercise, the chin lock position is maintained, and the mouth is salivated to bring a sense of tranquillity to oneself. Although the benefits of refining exercises remain lucrative, however situational and pre-requisite nature of the exercise makes them difficult to practice at different places or at times.

3. Practical Implementation and Statistical Overview of 3SRB Effects

Based on the data obtained from a small sample size of 10 participants, this study relies on the foundation of statistical input to provide insights on the potential impact of the 3SRB technique.

- Strengths and limitations of the study: -

  This study provides valuable practical applications and potential effects of the 3SRB technique, which is a relatively under-researched area. Since the sample size was limited to 10 participants, Tenacious analytical and statistical inference cannot be achieved. However, a foundation to provide legitimate guidance for future research in this area is established through this data.

3.1 Survey Methodology

The conceived effect of the 3SRB technique was primarily analysed through an observational approach, where a small group of 10 participants provided feedback through a digital survey based on their existing knowledge and experience.

The selected Data collection methodology included Google Forms as the primary instrument to collect and analyse data from participants due to its accessible and convenient characteristics. Out of several question categories embedded in the survey majority followed types such as closed-ended questions, Dichotomous questions (Yes/No), and Likert-scale questions.

A total of 13 questions were decided to employ in our study, specifically aligning with our statistical output consideration. These questions were fundamentally divided into 3 different categories. **Category 1** included questions related to personal practice patterns that eventually helped draw conclusions on practice intensity with perceived outcomes. **Category 2** comprises questions related to demographic information, such as age and occupation (working/student) of practitioners. **Category 3** questions were deployed to evaluate the experiential benefits of the 3SRB practitioners. This category of questions was the essence of our study to obtain results, which is the reason behind its significant proportion in question nature distribution.

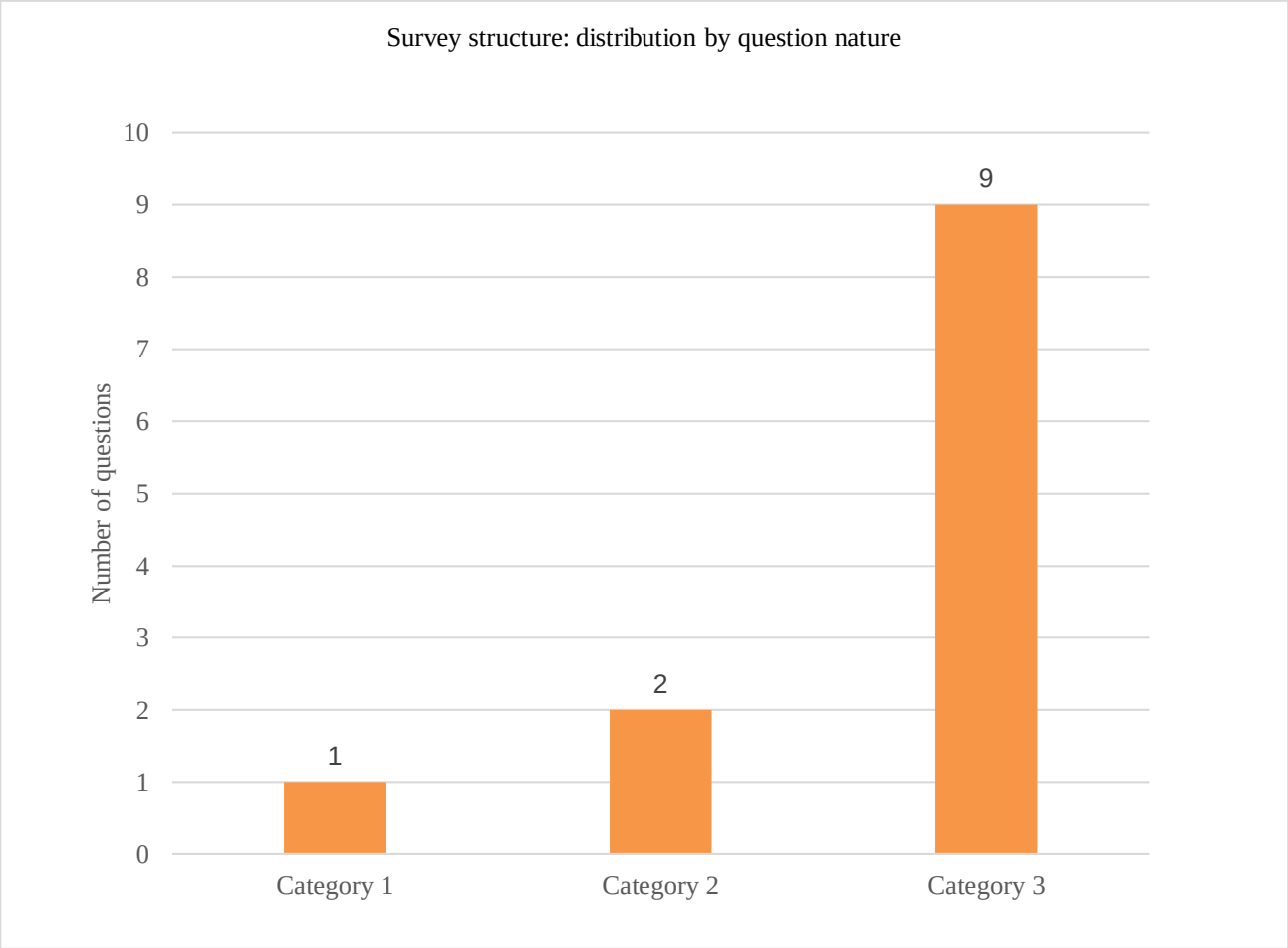

Chart 6) Categorization of survey question

The question category was broadly classified into 4 types, such as Multiple choice (categorical), Dichotomous (Yes/No), True Likert scale question (with numerical ordinal scale), Likert type statement (with ordered agreement options in non-numeric manner). Each of these categories of questions and their nature is strategically framed to curate effective participant engagement that ultimately reveals optimal results as a form of response. The below given chart describes survey question category distribution in terms of percentage out of the total number of questions (i.e.13).

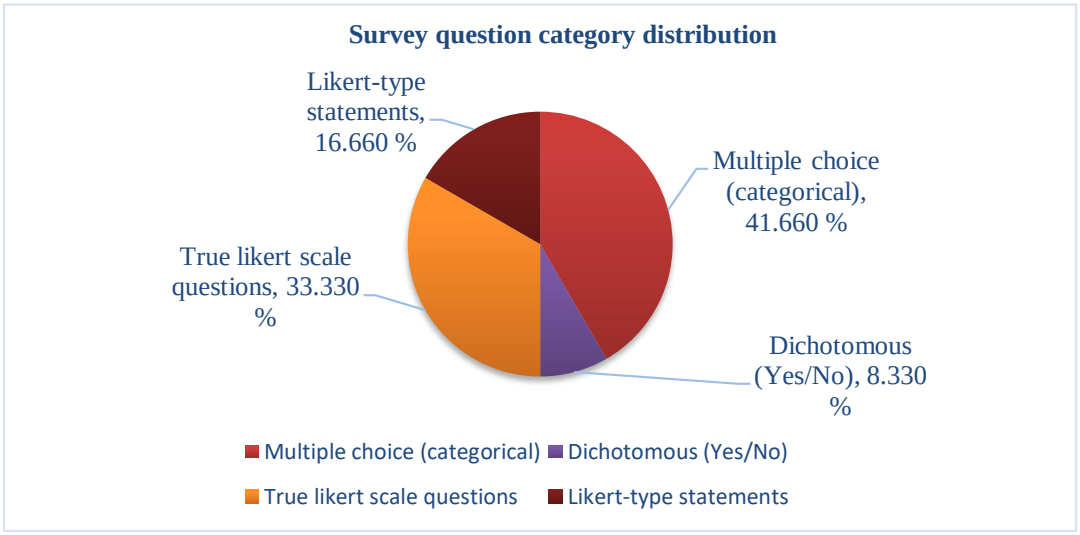

Chart 7) Distribution of question category

3.2 Data Analysis and Results

The survey included a diverse range of participants, starting from beginners (with one to four weeks of experience) to advanced practitioners (with one to more years of experience). The majority of participants, who were either students or working professionals, were between the ages of 15 and 40.

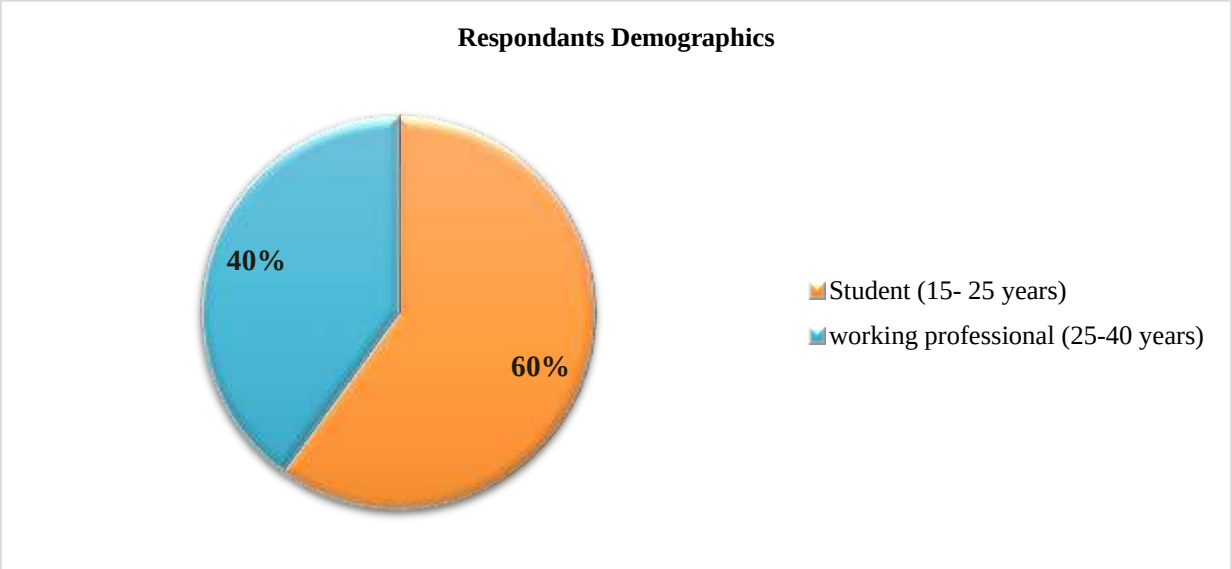

Chart 8) Demographics of respondents

All the participants (100%) confirmed that their sleep quality was improved after practicing the 3SRB technique. Also, 80% of the total participants from the survey reported a reduction in their work errors. Participants reported a mean happiness of 4.4 out of 5, as well as a mean stress and anxiety of 4.4 out of 5. Energy levels are rated 3.8 out of 5. The creative thinking capabilities were rated at 3.8 out of 5 by the participants described in the chart, 60% of participants were students between the age group of 15-25 years, while the other 40 % were working professionals between the age group of 25- 40 years. Out of the total 10 participants, 60 % of participants were practicing the 3SRB technique for 1-4 weeks of the timeline, while 20% reported more than one month, and the remaining were having more than one year of 3SRB practicing experience.

All the survey participants (100%) agreed regarding the improvement of cognitive functions (Focus, presence of mind, and memory) after practicing the 3-step rhythmic breathing technique.

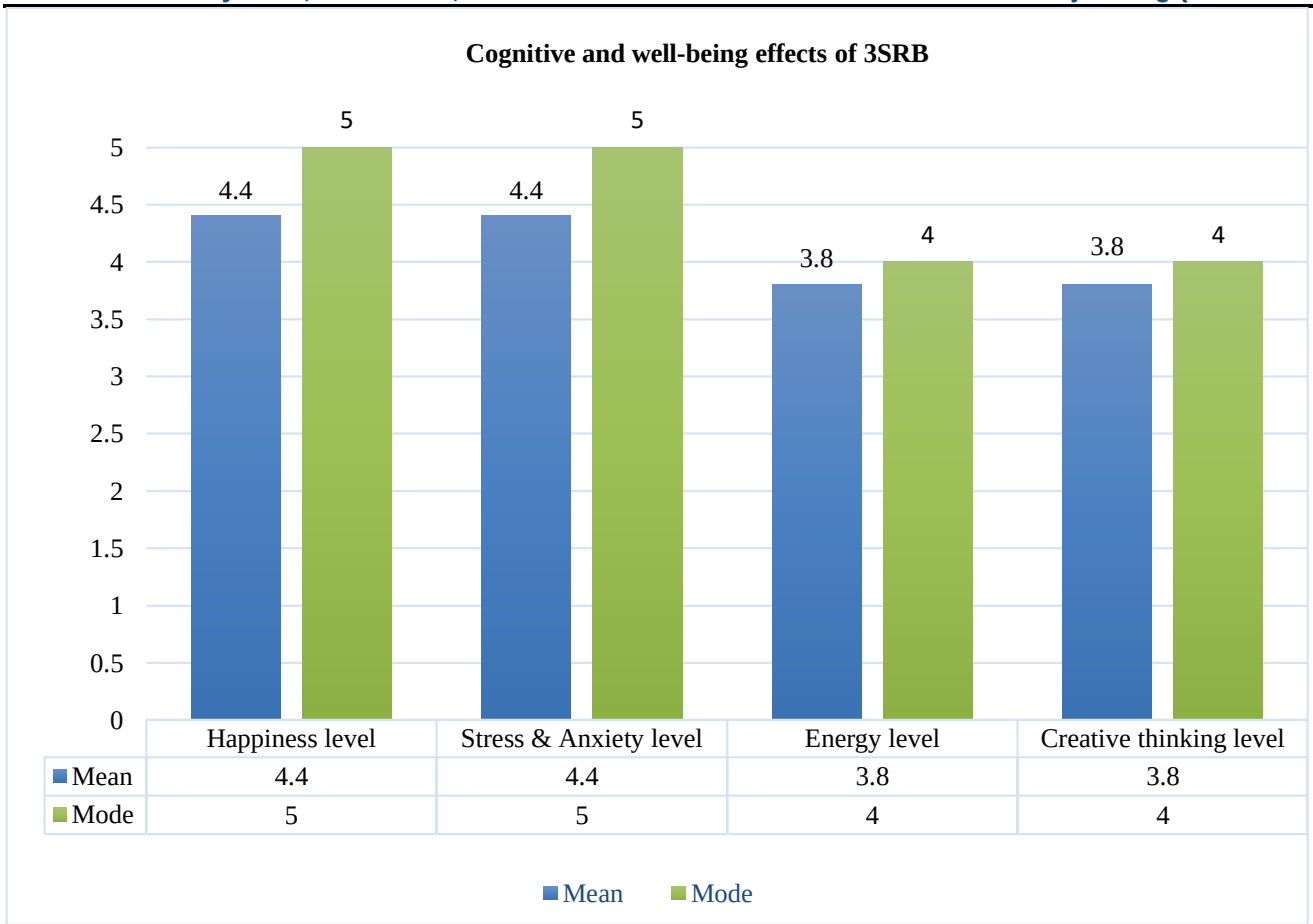

Chart – 9) Mean and mode calculation from collected data

From the survey, it was evident that greater effects (positive effects) of the 3SRB technique are observed as the duration of practice increases (i.e., more than 1 year). Cognitive functions and physiological functions are also observed to be improved for experienced practitioners from the results obtained from this study.

The overall participant pool, including 60% students and 40% working professionals, agreed on their improvement in work quality. The working professional also suggested through their responses that their error in performing tasks also reduced significantly.

The question regarding the cognitive function (focus, presence of mind & memory) indicated that 80% agreed and 20% strongly agreed on a Likert-type statement, thereby providing fairly consistent answers in positive terms. A similar pattern was observed in responses to the question, 'Do you agree that 3SRB helps you to stay calm?' (Question 10): result pattern of 'strongly agreed' and 'agreed' responses was obtained, showing positive effects.

The inference from the above analysis can be made that the rhythmic breathing technique shows an effective nature for a diverse array of people. The 3SRB technique indicated positive trends. Participants reported better sleeping (see also Phillipson, 1978), reducing the mistakes of doing any work, and being calmer. Happiness (see also Homma & Masaoka, 2008) and energy levels (see also Ashhad, Kam, Del Negro, & Feldman, 2022) were rated high. Consistent agreement implied certain perceived beneficial effects in calmness and cognitive function. Generalizability would be hampered by the small sample size.

The above results suggest that 3SRB, as an evolved and thoughtfully adapted model from ancient Indian practices, holds an untapped potential to act as a valuable tool for the holistic well-being (see also Kitko, 2007) of an individual.

4. Conclusion

The powerful synergy of mind and body balance brings scope for a life filled with inner peace and potentialities. This research elucidates the prosperous nature of structured breathing in human life. Pranayama, as an established practice, holds a compelling standpoint to bring various health benefits to individuals. Moreover, the 3-Step Rhythmic Breathing can alternatively be termed as an enriching practice useful to inculcate the stage of mind-body balance in an individual. The detailed technical aspects of the 3SRB frameworks presented in the paper reflect the intricacies of the technique, including breathing patterns and various phases of practice.

Further, the effectiveness of the three-step rhythmic breathing technique is established by the questionnaire curated for genuine results, presenting the perceived benefit for various demographic pool of students as well as working professionals. The statistical analysis, though based on a small sample size of 10 participants, reveals affirmative results. The data offers substantial evidence that the participant group, including students (60% of the total & between the age group of 15-25 years), as well as working professionals (40% of the total & between the age group of 25-40 years) notably reported a considerable improvement in their

physiological (see also Sharma et al., 2015), cognitive (see also Carter & Carter III, 2016), and mental well-being (see also Fincham, Strauss, & Cavanagh, 2023) concerns.

References

Zysk, K. G. (1993). The science of respiration and the doctrine of bodily winds in ancient India. *Journal of Indian Philosophy*, *21*(2), 183–205. Retrieved from https://doi.org/10.1007/BF01094061

Singh, R. B., Wilczyńska-Kwiatek, A., Fedacko, J., Pella, D., & De Meester, F. (2009). Pranayama: The power of breath. *International Journal on Disability and Human Development*, *8*(2), 141–154. Retrieved from https://doi.org/10.1515/IJDHD.2009.8.2.141

Pandey, S., Gupta, B., & Garg, K. (2020). A study of prana and pranayama. *Mukt Shabd Journal*, *9*(8), 1582–1592. Retrieved from https://www.researchgate.net/publication/343831251_A_STUDY_OF_PRANA_AND_PRANAYAMA

Nivethitha, L., Mooventhan, A., & Manjunath, N. K. (2016). Effects of various prānāyāma on cardiovascular and autonomic variables. *Ancient Science of Life*, *36*(2), 72–77. Retrieved from https://doi.org/10.4103/asl.ASL_178_16

Ankad, R. B., Herur, A., Patil, S., Shashikala, G. V., & Chinagudi, S. (2011). Effect of short-term pranayama and meditation on cardiovascular functions in healthy individuals. *International Journal of Yoga*, *12*(2), 58–62. Retrieved from https://doi.org/10.4103/1995-705X.86016

Ashish. (2024, March 9). 15 types of pranayama breathing techniques and benefits [Explained]. *Fitsri*. Retrieved from https://www.fitsri.com/articles/types-of-pranayama

Kumar, D., & Shashirekha, H. K. (2023). A critical analysis of mind-body complex in Indian tradition. *Research Highlights*, *10*(4), 44–55. Retrieved from https://www.researchgate.net/publication/385040547_A_critical_analysis_of_mind_-body_complex_in_Indian_tradition

Tavaria, S. N. (n.d.). *Total health through rhythmic breathing: The way of living according to Yoga Sutras of Sage Patanjali*. 3SRB. Retrieved from https://www.3srb.org/publications-music/books-by-tavariaji

3SRB. (n.d.). *Refining exercises*. 3SRB. Retrieved from https://www.3srb.org/exercises/refining-exercises

Phillipson, E. A. (1978). Control of breathing during sleep. *American Review of Respiratory Disease*, *118*(5), 909–939.

Homma, I., & Masaoka, Y. (2008). Breathing rhythms and emotions. *Experimental Physiology*, *93*(9), 1011–1021. https://doi.org/10.1113/expphysiol.2008.042424

Ashhad, S., Kam, K., Del Negro, C. A., & Feldman, J. L. (2022). *Breathing rhythm and pattern and their influence on emotion*. *Annual Review of Neuroscience*, *45*(1), 223–247. Retrieved from https://doi.org/10.1146/annurev-neuro-090121-014424

Kitko, J. (2007). Rhythmic breathing as a nursing intervention. *Holistic Nursing Practice*, *21*(2), 85–88. Retrieved from https://doi.org/10.1097/01.HNP.0000262023.27572.65

Sharma, P., Thapliyal, A., Chandra, T., Singh, S., Baduni, H., & Waheed, S. M. (2015). Rhythmic breathing: Immunological, biochemical, and physiological effects on health. *Advances in Mind-Body Medicine*, *29*(1), 18–25. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/25607119

Carter, K. S., & Carter III, R. (2016). Breath-based meditation: A mechanism to restore the physiological and cognitive reserves for optimal human performance. *World Journal of Clinical Cases*, *4*(4), 99–102. https://doi.org/10.12998/wjcc.v4.i4.99

Fincham, G. W., Strauss, C., & Cavanagh, K. (2023). Effect of coherent breathing on mental health and wellbeing: A randomised placebo-controlled trial. *Scientific Reports*, *13*(1), 22141. https://doi.org/10.1038/s41598-023-49279-8