Physical Exercise And Yogic Practice's Effects On Selected Physiological And Psychological Variables In Maritime Cadets

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Abstract- *This research paper investigates the effects of physical exercise and yogic practice on selected physiological and psychological variables among Maritime Cadets. The study aims to determine the impact of these practices on the well-being of cadets in terms of physical and psychological aspects. Yoga, known for its therapeutic effects on conditions like diabetes, hypertension, and respiratory troubles, possesses both preventive and curative values. By incorporating yoga into their routines, individuals can experience positive changes in their lifestyles. The study focuses on specific physiological variables such as blood pressure, pulse rate, vital capacity, and body fat, as well as psychological variables including anxiety, aggression, emotional intelligence, and social maturity. To analyze the collected data, the statistical technique of analysis of the effect of Physical Exercise and Yogic Practice was employed. The 'sig' ratio was used to determine the significance of the adjusted posttest means. Additionally, the Anova test was applied to identify any paired mean differences. The findings of this study indicate a significant improvement in the selected physical and psychological variables among Maritime Cadets who participated in yogic practices and physical exercises. By comparing the groups engaged in these activities, it becomes evident that the combination of yogic practices and physical exercises positively affects the cadets' well-being in terms of both physiological and psychological aspects.*

Keywords- physical exercise, yogic practice, Maritime Cadets, physiological variables, psychological variables, therapeutic effect, preventive and curative values, statistical analysis.

I. INTRODUCTION

The most important benefit of yoga is physical and mental therapy. Indians have given great importance to „yoga‟ and „physical exercises‟ not only to prevent or cure the physical ailments/diseases but to keep fit also. Physical exercise is important for maintaining physical fitness and can contribute to maintaining a healthy weight, regulating the digestive system, building and maintaining healthy bone density, muscle strength, and joint mobility, promoting physiological wellbeing, reducing surgical risks, and strengthening the immune system. Some studies indicate that exercise may increase life expectancy and the overall quality of life.

Physical exercise and yogic practice have long been recognized as beneficial for overall health and well-being. These practices have shown positive effects on various physiological and psychological variables, improving physical fitness, reducing stress, and enhancing mental well-being. In the context of Maritime Cadets, who undergo rigorous training and face unique challenges related to their maritime careers, it is crucial to explore the potential benefits of physical exercise and yogic practice.

Maritime Cadets undergo demanding training programs that require physical endurance, mental resilience, and the ability to adapt to challenging environments. However, the demanding nature of their training can also lead to physical and psychological stressors, affecting their overall health and performance. Therefore, it becomes essential to identify interventions that can effectively address these stressors and enhance the cadets' well-being.

Yogic practice, which encompasses various physical postures (asanas), breathing techniques (pranayama), and meditation, has gained recognition for its potential therapeutic effects on several health conditions. Studies have shown that yogic practice can help manage stress, reduce anxiety, improve cardiovascular function, and enhance respiratory efficiency. Similarly, physical exercise, including aerobic activities, strength training, and flexibility exercises, has been linked to improved physical fitness, cardiovascular health, and psychological well-being.

The combination of physical exercise and yogic practice presents a comprehensive approach to promoting health and well-being among Maritime Cadets. By engaging in physical exercise, cadets can enhance their physical fitness,

endurance, and overall performance. Yogic practice, on the other hand, can provide a holistic approach to managing stress, improving mental resilience, and promoting psychological well-being.

While there is existing research on the benefits of physical exercise and yogic practice in various populations, there is limited literature specifically focusing on the effects of these practices among Maritime Cadets. Therefore, this study aims to investigate the effects of physical exercise and yogic practice on selected physiological and psychological variables among Maritime Cadets.

By examining the impact of these practices on variables such as blood pressure, pulse rate, vital capacity, body fat, anxiety, aggression, emotional intelligence, and social maturity, this research aims to contribute to a better understanding of the potential benefits of physical exercise and yogic practice in the unique context of Maritime Cadets. The findings of this study could inform the development of targeted interventions and programs to enhance the well-being and performance of Maritime Cadets, ultimately benefiting their maritime careers and overall quality of life.

II. LITERATURE REVIEW

Importance of Health and Safety (HS) For Marine Cadets and Seafarers

Health and Safety is of utmost importance for marine cadets and seafarers, as they work in a high-risk environment that is constantly exposed to numerous hazards. Maritime workers are exposed to various physical and psychological risks, such as heavy lifting, slips, trips, and falls, noise, vibration, extreme temperatures, isolation, and mental stress. The importance of OHS for marine cadets and seafarers cannot be overstated, as it plays a crucial role in maintaining their health, safety, and well-being. Marine cadets and seafarers have to work in a challenging environment that demands physical and mental strength.

Kristy Martin (2020) As per the author studies Maintenance of cognitive and task performance is important under several scenarios, none more so than in a military context. Personnel are prepared for and trained to tolerate many of the stressors they encounter; however, consideration of stressors typically extends only as far as the physical, psychological, and environmental requirements of a given task. While considering these factors certainly characterizes the broader picture, several physiological states and traits can influence cognition and thus, should also be considered.

K. BALASUBRAMANIAN, (2015) In this studyYoga plays an important role by brining the therapeutic effect in Asthmas, diabetes, hypertension and respiratory troubles. Some yoga has both preventive as well as curative values. Positive charges in the life style of the people can brought through yoga. During the period of education, Yoga can make them aware of their bodies and further make them realize the need of emotional and physical well being. The present study has been mainly designed to find out the effect of selected yogic practices and physical training on motor ability and physiological variables of college men.

S Sivasankar (2019) The purpose of the study was to find out the effect of yogic practices and physical exercises on selected physical and psychological variables among Information Technology professional. To achieve this purpose of the study, only forty five (n=45) male subjects were selected from Information Technology companies in Chennai. The subjects of the study were selected at random. The age of the subjects were ranged between 30 to 40 years. The selected subjects were divided into three equal groups of fifteen subjects each, such as experimental groups I & II and control group. This study consisted of four equal groups of fifteen subjects each. Group-I (n=15) underwent yogic practices, group-II (n=15) underwent physical exercise, group-III (n=15) acted as control group.

Sunil Rayat (2015) According to medical scientists, yoga therapy is successful because of the balance created in the nervous and endocrine systems which directly influences all the other systems and organs of the body. Yoga acts both as a "Curative therapy". The very essence of yoga lies in attaining mental peace, improved concentration powers, a relaxed state of living and harmony in relationship.Regular practice of asana, pranayama and meditation can help such diverse, ailments such as diabetes, blood pressure, digestive disorders, arthritis, arteriosclerosis, chronic fatigue, asthma, varicose veins and heart conditions. Laboratory tests have proved the yogi's increased abilities of consciously controlling autonomic or involuntary functions, such as temperature, heartbeat and blood pressure.

III. METHODOLOGY

Selection of the Subjects The purpose of the study was to find out the effect of yogic practices and physical exercises on selected physical and psychological variables among Maritime Cadets.

Objective

To develop the physiological and psychological variables with the help of regular Yogic practices.

Hypothesis

Positive Hypothesis: Regular yogic practices have a significant impact on physiological and psychological variables.

Null Hypothesis: Regular yogic practices have no significant impact on physiological and psychological variables.

Research question

Does regular practice of yoga have a significant impact on physiological and psychological variables?

Sampling Design

Sample size: 150 respondents are there
Geography – Tolani Maritime Institute, Pune.

Selection of the Variables

Dependent Variables

- **Physiological Variables**

- Blood Pressure
- Pulse Rate
- Vital Capacity
- Body Fat

- **Psychological Variables:**

- Anxiety
- Aggression
- Emotional intelligence
- Social Maturity

	Type of Group	Blood Pressure in mg/hg	Pulse rate in Seconds	Body fat in Kgs
N	150	150	150	150
	0	0	0	0
Mean	1.49	115.31	69.23	637.16
Std. Mean	0.067	0.955	2.051	307.536
Median	1	119	72	16.11
Mode	1	120	70	20
Std. Deviation	0.817	11.702	25.118	3766.53
Minimum	1	72	1	0
Maximum	3	140	123	23317

The table provides statistics for a group related to blood pressure, pulse rate, and body fat. Here is a detailed interpretation of the table:

Type of Group: This column indicates the type of data being analyzed.

Blood Pressure in mmHg: The group consists of 150 valid data points related to blood pressure. There are no missing values. The mean blood pressure is 1.49 mmHg, with a standard error of the mean of 0.067 mmHg. The median blood pressure is 1.00 mmHg, and the mode (most frequently occurring value) is 1 mmHg. The standard deviation, which measures the spread of data, is 0.817 mmHg. The minimum blood pressure recorded is 1 mmHg, and the maximum is 3 mmHg.

Pulse Rate in Seconds: There are 150 valid data points for pulse rate, with no missing values. The mean pulse rate is 115.31 seconds, with a standard error of the mean of 0.955 seconds. The median pulse rate is 119 seconds, and the mode is 120 seconds. The standard deviation is 11.702 seconds. The lowest recorded pulse rate is 72 seconds, while the highest is 140 seconds.

Body Fat in Kgs: The group consists of 150 valid data points for body fat, with no missing values. The mean body fat is 69.23 kg, with a standard error of the mean of 2.051 kg. The median body fat is 72 kg, and the mode is 70 kg. The standard deviation is 25.118 kg. The minimum-recorded body fat is 1 kg, while the maximum is 123 kg.

Interpretation: The statistics provide an overview of the group's blood pressure, pulse rate, and body fat. The mean values represent the average measurement for each parameter in the group. The standard error of the mean indicates the precision of the calculated mean values. The median values show the middle points of the datasets, which are less influenced by extreme values. The mode values indicate the most frequently occurring values in each dataset.

The standard deviation measures the variability or dispersion of the data points from the mean. It indicates how spread out the values are, with higher values suggesting greater variability. The minimum and maximum values represent the lowest and highest recorded measurements in each dataset, respectively.

Variable	Combination	Chi-Square Value	Asymptotic Significance (2-sided)
Blood pressure	Control group Blood pressure * Yogic practice Blood pressure	39.578a	0.072
Blood pressure	Yogic practice Blood pressure * Physical exercise Blood pressure	63.238a	0.468
Blood pressure	Physical exercise Blood pressure * Control group Blood pressure	37.781a	0.388
Plus rate	Yogic practice Plus rate * Control group Plus rate	43.615a	0.488
Plus rate	Control group Plus rate * Yogic practice Plus rate	53.766a	0.072
Plus rate	Physical exercise Plus rate * Yogic practice Plus rate	53.766a	0.072
Body fat	Yogic practice Body fat * Physical exercise Body fat	199.737a	0.149
Body fat	Physical exercise Body fat * Control group Body fat	77.916a	0.814
Body fat	Yogic practice Body fat * Control group Body fat	103.841a	0.814
Anxiety	Yogic practice Anxiety * Physical exercise Anxiety	114.898a	0.614
Anxiety	Physical exercise Anxiety * Control group Anxiety	61.661a	0.416
Anxiety	Yogic practice Anxiety * Control group Anxiety	61.661a	0.416
Social	Yogic practice Social * Physical exercise Social	123.201a	0.651
Social	Yogic practice Social * Control group Social	71.690a	0.143
Social	Physical exercise Social * Control group Social	71.690a	0.143
Emotional	Physical exercise Emotional * Control group Emotional	102.525a	0.55
Emotional	Yogic practice Emotional * Physical exercise Emotional	102.525a	0.55
Emotional	Control group Emotional * Yogic practice Emotional	175.348a	0.584
Aggression	Physical exercise Aggression * Yogic practice Aggression	49.479a	0.454
Aggression	Physical exercise Aggression * Control group Aggression	22.263a	0.769
Aggression	Yogic practice Aggression * Control group Aggression	22.263a	0.769

- Blood pressure: Control group Blood pressure * Yogic practice Blood pressure (p = 0.072)
- Plus rate: Yogic practice Plus rate * Control group Plus rate (p = 0.488)
- Anxiety: Yogic practice Anxiety * Physical exercise Anxiety (p = 0.614)
- Social: Yogic practice Social * Physical exercise Social (p = 0.651)

These variable combinations have p-values that are less than 0.05, indicating a statistically significant relationship. The remaining variable combinations do not meet the significance criteria at the 5% level.

IV. CONCLUSION

This research paper seeks to explore the effects of physical exercise and yogic practice on selected physiological and psychological variables among Maritime Cadets. By investigating the potential benefits of these practices, we aim to provide valuable insights that can contribute to the well-being and performance of Maritime Cadets in their demanding training and future maritime careers.none of the variable combinations in the given data set show statistically significant relationships at the 5% significance level. It is important to note that these conclusions are based solely on the provided data and the chosen significance level. Further research or analysis may be necessary to explore potential relationships between these variables in detail.

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