IJFANS INTERNATIONAL JOURNAL OF FOOD AND NUTRITIONAL SCIENCES

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

OBSERVATIONAL STUDY OF SHAWASA KASHTATA LAKSHAN PARIKSHAN IN MEDOVRIDDHI INDIVIDUAL WITH SPECIAL REFERENCE TO VITAL CAPACITY

Dr. Deepali Kohale

Proffesor, Department of Sharir Kriya

M. S. Ayurvedic Medical College, Hospital And Research Institute, Gondia

ABSTRACT

Ayurveda, an ancient medical science, focuses on maintaining human health. It emphasizes the equilibrium of various structural and functional units of the body, including Dosha, Dhatu, Mala, Agni, and Indriya, to promote well-being. Imbalances in these units can lead to diseases. The functioning of the body is governed by the three Doshas, which control the seven bodily tissues (Rasa, Rakta, Mamsa, Meda, Asthi, Majja, and Shukra) and ensure its continuous operation. Waste products generated during daily activities are referred to as Malas, and our daily life activities depend on this functioning.

The definition of a healthy body, according to Sushruta, is crucial for achieving the ultimate goal among the Chaturvidha Purushartha. Sushruta considers "Madhyam Sharira" (moderate body) as the best, while "Atisthula" (excessive weight) or "Ati krusha" (excessive thinness) is associated with complaints. Charak and Vagbhat, on the other hand, believe that a lean body ("krusha sharir") is ideal. Charak also highlights eight impediments known as "Nindita purusha."

Medo dhatu, the fourth bodily tissue, is formed and nourished by Ahara rasa (food essence). It provides lubrication to the body and can be correlated with adipose tissue in modern terms. Adipose tissue consists of fat cells that give shape to the body, protect the organs, and regulate body temperature.

Medovriddhi, the accumulation of fat tissue, is increasingly prevalent in today's societies. Factors such as overeating sweet, oily, and heavy foods, as well as a lack of exercise, contribute to an increase in Medo dhatu. This excess fat accumulation can lead to complications, including respiratory diseases. Obesity and overweight are defined as abnormal conditions characterized by excessive fat accumulation, which can impair health. Obesity can be diagnosed earlier by identifying overweight individuals. The fundamental cause of overweight is an energy imbalance between calorie intake and expenditure, attributed to an increased consumption of energy-dense, high-fat foods and sedentary lifestyles due to urbanization and sedentary habits.

Obesity can reduce forced vital capacity, impacting chest wall compliance and respiratory muscle strength. Obese individuals may exhibit low tidal volumes, particularly in the expiratory reserve volume, which can be measured using spirometry. Spirometry is a

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

functional test of lung function that measures vital capacity, the maximum amount of air expelled from the lungs after a deep inhalation.

In today's competitive world, people's busy routines often lead to unhealthy habits such as consuming fast food and bakery products, resulting in weight gain and various health effects. Therefore, it becomes essential to assess the vital capacity of individuals in such circumstances. This abstract introduces an observational study on "Shwasakashtata Lakshana Parikshan in Medovriddhi Individuals with Special Reference to Vital Capacity" to address the need for research in this area.

INTRODUCTION

Ayurveda is an ancient medical science related to maintain healthiness of human being. As it is a complete science of health; care should be taken by all people. Health of an individual can be maintained only if there is equilibrium of various structural and functional units of body named as *Dosha, Dhatu, Mala, Agni, Indriya* results in health and their disequilibrium causes disease (1).

All *Sharir-kriya* carried out by 3 *Doshas*, 7 *Dhatu* & 3 *Malas*, so *Sharir-kriya vidhyan* is also known as *Doshadhatumalavidhyan*(2). The three *doshas* control the *sapta dhatu* i.e. *Rasa, Rakta, Mamsa, Meda, Asthi, Majja* and *Shukra*, hence the body continuous to function. Waste product which are by-product of our daily activities are called *Malas*. Thus our daily life activities are as a result of this functioning.

According to definition of *Swastha Purusha* by *Sushruta* a healthy body is only one media to achieve ultimate goal among the *Chaturvidha Purushartha*. Thus, *Sushruta* said that "*Madhyam Sharira*" is the best but "*Atisthula"* or "*Ati krusha"* is always affected with some complaints. *Charak* and *Vagbhat* says that "*krusha sharir*" is the best. *Charak* has also thrown light on the eight varieties of impediement which are designated as "*Nindita purusha*" (3).

Medo dhatu is the fourth *dhatu* formed and nourished by *Ahara rasa*. It provides oleation to our body. Thus it is important for our daily routine. *Meda dhatu* can be correlated with adipose tissue in modern. The Adipose tissue is characterised by containing free fat inside the fat cells. The cells are generally large, round or oval in shape. It gives shape to the limbs and body, keep the viscera in positional and prevents injury, regulates body temperature.

Medovriddhi is increasingly prevalent condition among all societies in today‟s era. Overeating of sweet, oily, heavy food, lack of body exercise leads to increase in *Medo dhatu*. Lots of complication occurs due to increased *meda* such as respiratory diseases, etc. Fat tissue accumulation impairs ventilator functions. Increasing Body Mass Index is typically associated with a reduction in forced vital capacity. Overweight as well as obesity are defined as abnormal along with excessive fat accumulation which can impair health. This condition of obesity can be diagnosed earlier and that is overweight. The term overweight is generally used to indicate excess weight that may impair health. The fundamental cause of overweight is energy imbalance between calories consumed with calories expended. Globally, there has been:-

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

- an increased intake of energy dense foods which are high in fat
- an increase in physical inactivity because of increase in sedentary lifestyle, increased urbanization etc.

Obesity can cause reduction in forced vital capacity due to the reduction in both chest wall complianace along with respiratory muscle strenght. Obese patient may have low tidal volumes, especially expiratory reserve volume. Which can be measured by spirometry.

Spirometry means measurement of our breathing system (Spiro= Breathe; Meter= Measuring Device). It is known as functional test of the lungs. Vital capacity is the maximum amount of air that can be expel from lungs after maximum inhalation.

Every person wants to be healthy but due to today's competitive world, everyone is busy in their routine work which causes various health effect because such people eats fast foods, bakery products which leads to increase in weight and many other side effects and due to these factors, there is a need to check vital capacity of such individuals. Till now no research work has been done regarding this topic. Hence I selected this topic for my dissertation- Observational Study of Shwasakashtata Lakshana Pariksha n in Medovriddhi Individuals with Special Reference to Vital Capacity.

AIM AND OBJECTIVES

AIM: -To study *Shwasa Kashtata lakshana parikshan* in *Medovriddhi* individuals with special reference to vital capacity.

OBJECTIVES

Primary Objectives: -

1. To evaluate *medovriddhi* individuals as described in *Ayurvedic* text (ÍxTMüxiÉlÉÉåSUsÉqoÉlÉç¦) with the help of Chest circumference, abdominal girth, waist-hip ratio.
2. To evaluate *medovriddhi* individuals as described in modern text with the help of Body Mass Index.
3. To do *shwasan parikshan* with the help of spirometry.

Secondary objectives: -

1. To Check vital parameters with the help of Gradation scale of dyspnoea.
2. To correlate between *medovriddhi* individuals and their vital capacity.

Material and Method

This study was designed to observe the *shwasa kashtata lakshana* in *medovriddhi* individual, by measuring vital capacity with the help of spirometry.

The material and methodology used here to fulfil the demand of the study is as follows-

This study was done in two parts:

1. Conceptual based

a. *Ayurvedic* literature. b. Modern literature

2. Observational study: The aim is to study the *shwasa kashtata lakshana parikshan* in *medovriddhi* individuals with special reference to vital capacity.

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

Sample Selection: Individuals were selected from *Ayurvedic* hospitals and its periphery. All the selected individuals were screened as per inclusion and exclusion criteria, irrespective of sex.

The individuals of age groups between 25-45 years with Body Mass Index between 25-29.9 were included in the study. Total 60 individuals were included in the study.

LOCATION OF STUDY:- *Ayurvedic* college and hospital and its periphery.

Research Tools:

- Measuring tape
- Weighing machine
- BMI
- Syhgmomanometer
- Stethoscope
- Watch
- Spirometer: Introduction:
- Parts of Spirometer
- Nose clip
- Mouth piece
- Transducer
- Turbine Transducer

ELIGIBILITY CRITERIA: -

INCLUSION CRITERIA: -

- Individuals of age group 25-45years are selected.
- Individual selection will be irrespective of sex, religion, socio-economic status.
- Individuals whose abdominal girth will be between -for male 100-120 cm and for female 90-109cm and also waist hip ratio for male->0.90 and for female->0.85 taken.
- Individuals with BMI between 25-29.9.
- Individual willing to participate in the study.

EXCLUSION CRITERIA: -

- Individuals suffering from any systemic disorders or any acute and chronic illness like Asthma, Pneumonia, Chronic obstructive disease.
- Individuals age group below 25 years and above 45 years.
- Individuals with any recent surgery (3 month)
- Pregnant and Lactating mothers. Sampling method: Randomly selected Type of study: Observational study Method:

OBSERVATION AND RESULT

The age group criteria for the study was between 25 to 45 years of age. In *medovriddhi* individuals,

50 Individuals are between 25 to 35 years of age and 10 Individuals are between 36 to 45 years of age. This study was done in total 60 individuals. 28 individuals i.e.46.67% were male and 32 individuals i.e. 53.33% were female.

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

Table 1: Showing Marital Status of 60 *Medovriddhi* Individuals in frequency and percentage

Marital Status	No. of individuals	Percentage
Married	18	30
Unmarried	42	70
Total	60	100

Table 2: Showing Religion status of 60 *Medovriddhi* individual in frequency and percentage.

Religion Status	No. of individuals	Percentage
Hindu	58	96.67
Muslim	2	3.33
Other	0	0
Total	60	100

Among 60 individuals; 15 individuals i.e. 25% were vegetarian means which include foodstuffs in diet. 45 individuals i.e. 75% were taking mixed diet which include vegetarian and non-vegetarian diet.

Table 3: Showing Socio-economical Status of 60 *Medovriddhi* individual in frequency and percentage

Economical Status	No. of individuals	Percentage
Upper	0	0
Middle	55	91.67

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

Lower	5	8.33
Total	60	100

Majority of *Medovriddhi* Individuals included here is student as per availability. 4 Individuals i.e. 6.67% were Housewife, 6 Individuals i.e. 10% were doing service, 48 Individuals i.e. 80% were Students, 2 Individuals i.e. 3.33% were Government worker.

Table 4: Showing Baseline anthropometry parameters of *Medovriddhi* Individuals along with mean and SD

Parameters	Mean	SD	Range
Height	161.53	9.45	142 – 185
Weight	69.55	8.66	51 – 95
BMI	26.55	1.47	25 – 30
Around *Nipple* (chest circumference)	91.0	10.98	57 – 108
Around Umbilicus (Abdominal circumference)	94.05	5.88	80 – 109
Waist	98.4	8.47	53 – 110
Hip	102.03	9.30	55 – 118
WHR	0.95	0.069	0.86 – 1.21

The Systolic Blood Pressure of all *medovriddhi* individuals ranges between, 100 to 132 mmHg, there mean is 113.76 and SD value is 10.60, The Diastolic Blood Pressure of all *medovriddhi* individuals ranges between 60 to 90 mmHg, there mean is 75.73 and SD value is 10.02, The Respiratory rate of all *medovriddhi* individuals ranges between 16 to 22 per minute, there mean value is 18.56 and SD is 1.9. The Pulse rate of all *medovriddhi* individuals ranges between 60 to 96 per minute, there mean value is 72.70 and SD is 8.54.

Table 5: Showing distribution of grades of Dyspnoea in *medovriddhi* individuals there frequency and percentage

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

Grade of Dysponea	No. of individuals	Percent
I	16	26.67
II	38	63.33
III	6	10.0
Total	60	100

Table 6: Showing comparison of vital parameters; before and after dyspnoea for Male and Female

Parameter	Sex	Before		After		t-value	p-value
		Mean	SD	Mean	SD		
SBP	Male	122	7.90	126.14	7.38	5.4851	<0.0001,HS
	Female	106.56	7.45	112.81	8.88	6.3867	<0.0001,HS
DBP	Male	80.71	10.15	84.12	10.54	3.4088	0.0021,HS
	Female	71.37	7.19	74.06	12.59	1.1079	0.2764,NS
RR	Male	19	1.67	21.28	10.97	11.5292	<0.0001,HS
	Female	18.18	2.05	20.43	2.31	15.1087	<0.0001,HS
PR	Male	76.0	7.73	80.0	8.09	8.6948	<0.0001,HS
	Female	69.81	8.27	74.62	9.38	9.4943	<0.0001,HS

* **SBP-** Systolic Blood Pressure *__DBP-__ Diastolic Blood Pressure

* **RR-** Respiratory Rate * **PR**- Pulse Rate

Showing Correlation of BMI and WHR separate for

ISSN PRINT 2319 1775 Online 2320 7876

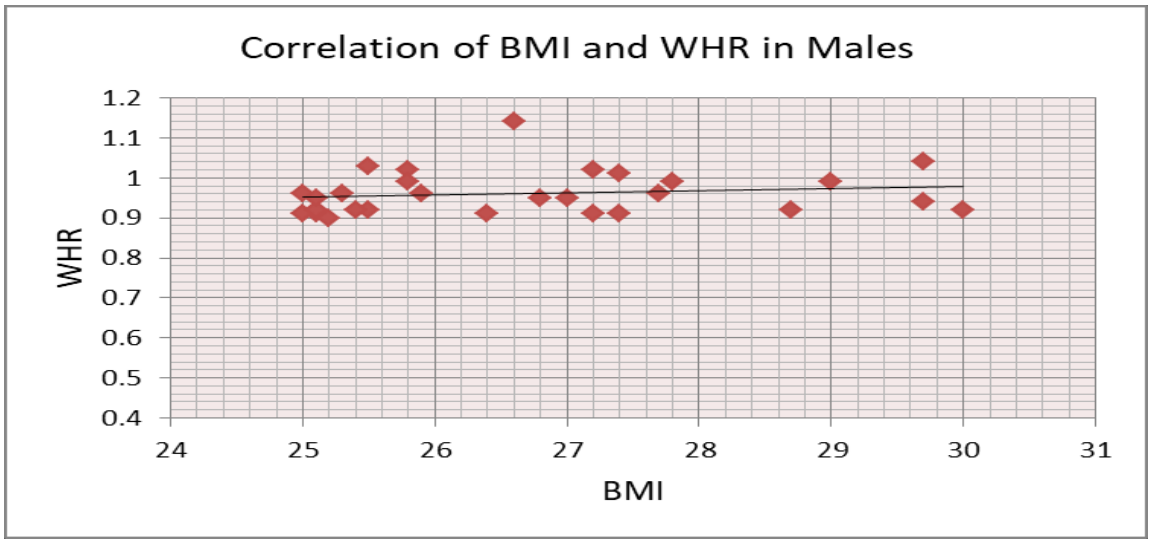
Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

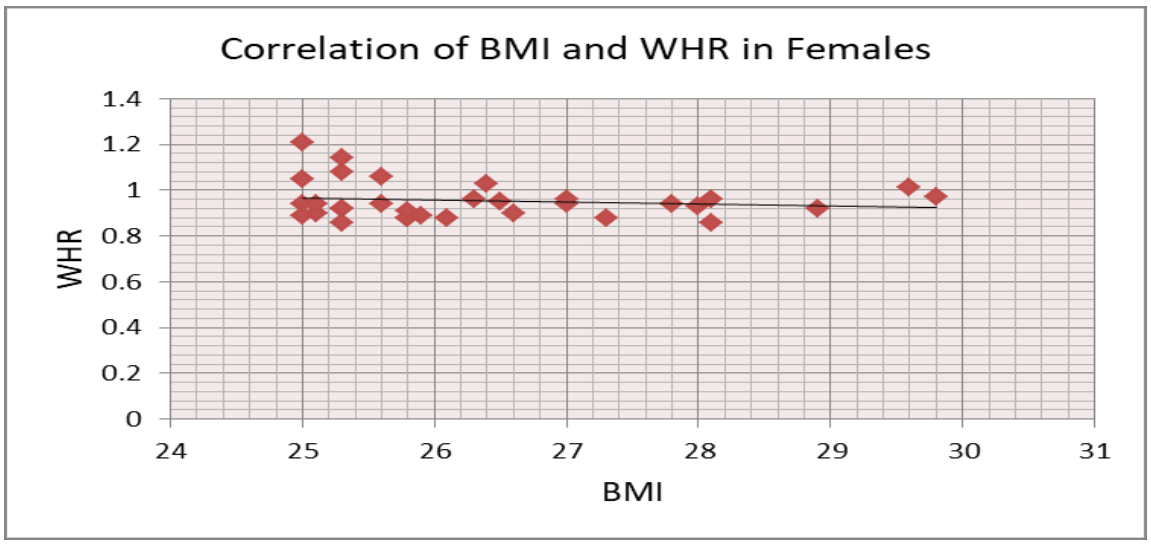
Male and Female.

	WHR			
	Male		**Female**	
	r-value	p-value	r-value	p-value
BMI	0.1454	0.4004,NS	-0.1441	0.4313,NS

* **BMI**- Body Mass Index * **WHR**- Waist Hip Ratio

Scatter diagram Showing correlation of BMI and WHR of the study individual





ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

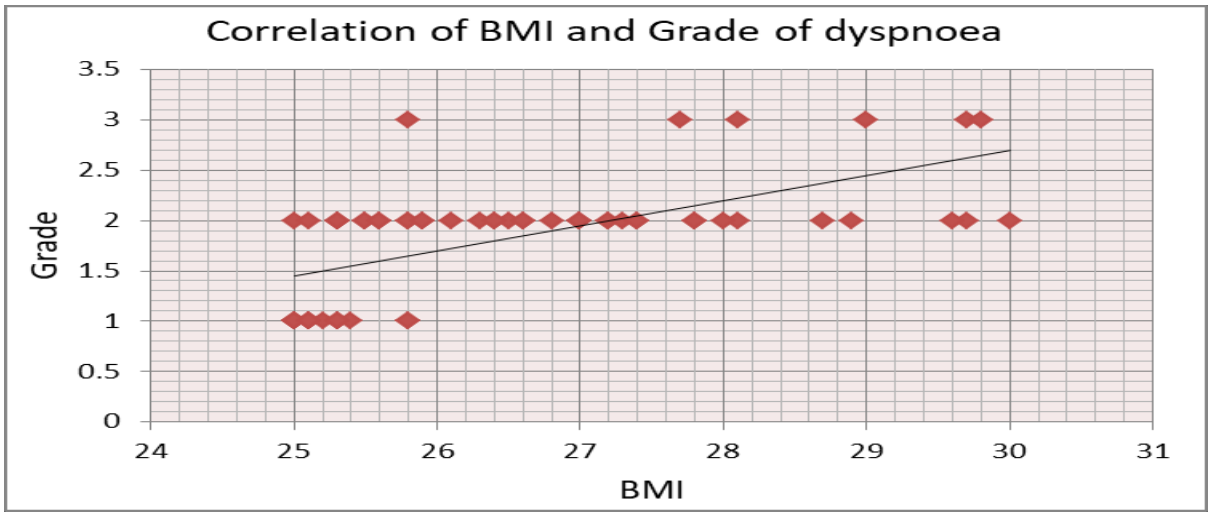
There is a positive correlation between BMI and WHR in male but statistically it was not significant. In female there was a negative correlation between BMI and WHR but statistically not significant.

Showing Correlation of BMI and Grades of dyspnoea.

Grade of dyspnea	Mean BMI	SD
I	25.21	0.26
II	26.82	1.32
III	28.35	1.50
Spearman correlation (rho)	0.7003	
p-value	<0.0001,HS	

Scattered diagram Showing Correlation of BMI and Grades of

Dyspnoea



In Grade I type of dyspnoea, the mean BMI was 25.21 and SD value 0.26
In Grade II type of dyspnoea, the mean BMI was 26.82 and SD value 1.32
In Grade III type of dyspnoea, the mean BMI was 28.35 and SD value 1.50

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

There is a strong positive correlation between grades of dyspnoes and BMI. As Grades of dyspnoea get increased result into increase in BMI and its SD value; satistically it is highly significant.

Showing Correlation of change in SBP, DBP, RR and PR before and after Grades of dyspnoea.

Grades of Dysnpnoea	SBP		DBP		RR		PR	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
I	2.75	3.17	4.1	5.56	2.12	0.85	4.5	2.96
II	5.84	4.37	1.89	12.21	2.26	0.94	4.21	2.49
III	8.33	9.15	8.0	9.46	2.66	1.03	5.66	3.21
Spearman correlation (rho)	0.3044		0.0713		0.1395		0.0651	
p-value	0.0180, S		0.5882,NS		0.2878,NS		0.6210,NS	

*__SBP__- Systolic Blood Pressure *__DBP__- Diastolic Blood Pressure

*__RR__- Respiratory Rate *__PR__-Pulse Rate

Showing correlation bwteen FVC with BMI and WHR

	FVC	
	r-value	p-value
BMI	-0.1402	0.2852,NS
WHR	-0.1604	0.2208, NS

Correlation of BMI and Change in FVC from observed

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

to Normal value

BMI	Change in FVC from observed to Normal value		
	Mean	SD	Range
25 – 27.5	0.64	0.38	0.12 – 1.89
27.5 - 30	0.70	0.29	0.18 – 1.15
t-value	0.5479		
p-value	0.5855,NS		

*__FVC__- Forced Vital Capacity *BMI – Body Mass Index

It shows that, In BMI between 25-27.5; mean FVC value from observed to normal value comes as 0.64 and SD as 0.38, Whereas, in BMI between 27.5-30; mean FVC value from observed to normal value comes as 0.70 and SD as 0.29.

DISCUSSION

Discussion is the most important and essential part of any study. In this part it is needed to discuss and analyze the facts according to the observations and results. The aim of the present study was to observe the *shwasakashtata lakshana* in *medovriddhi* individuals with the help of spiromtery. For any study *Panchavyaya* concept is must. Among these *Nigamana* (conclusions) is the fifth one, before establishing conclusion its prior compulsion step is *Upanaya* i.e. discussion.

The individuals were assessed for *lakshana* of *medovriddhi* and the forced vital capacity was measured. All the individuals were assessed with diferent parameters. Total 60 individuals were included in the study and which was registered in OPD.

Discussions on Grades of dyspnoea: Out of the total no. of 60 individual, 38 individual came in the category of type II grade of dyspnoea. While 16 no. of individual came in the class of type I grade of dsypnoea and the remaining no of 6 individual were of type I grade of dyspnoea. This may be due to individuals selected for the study was overweight not obesity.

Discussions on forced vital capacity (FVC): FVC% compared with BMI, Grades of dyspnoea. All the values shows that when BMI increases FVC% also increases along with gradation scale but statistically it is not significant.

Discussions on relation between vital parameters and grades of dyspnoea before and after in both male and female:

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

- Before performing gradation scale of dyspnoea, the mean value of SBP in male was 122 mmHg and SD comes as 7.90 and the same SBP after doing gradation scale the mean comes as 126.14 and SD as 7.38. p value is <0.0001 which is highly significant.
- Same way in male DBP was measure before gradation the mean obtained as 80.71 SD as 10.15 while after gradation DBP measure in the same individual, mean obtained as 84.12 and SD as 10.54. P value 0.0021 which is highly significant.
- This shows that after exercise or some sort of work, SBP increases above the basal level. This may be due to increase in force of contraction and stroke volume.
- Before performing gradation scale of dyspnoea, the mean value of SBP in female was 106.56 mmHg and SD comes as 7.45 and the same SBP after doing gradation scale the mean comes as 112.81and SD as 8.88. p value is <0.0001 which is highly significant. This may be because during excitement or anxiety, the SDP increases. As in females due to hormonal changes mood swings which result in increase SDP.
- Same way in female DBP was measure before gradation the mean obtained as 71.37 SD as 7.19while after gradation DBP measure in the same individual, mean obtained as 74.06.12 and SD as 12.59. p value 0.2764 which is not significant.
- As DBP does not affected with moderate exercise. It is because the DBP depends upon peripheral resistance. As while performing gradation scale of dyspnoea female get exhaust quickly as compared to male so the changes in DBP is not much.Before performing gradation scale of dyspnoea, the mean value of R.R in male was 19/min and SD comes as 1.67 and the same R.R after doing gradation scale the mean comes as 21.28 and SD as 10.97; p value is <0.0001 which is highly significant.
- Same way in male P.R. was measure before gradation the mean obtained as 76.0 SD as 7.73 while after gradation P.R measure in the same individual, mean obtained as 80.0 and SD as 8.09. p value is <0.0001 which is highly significant.
- This shows that after exercise or some sort of work, R.R and P.R increases above the basal level. This may be due to increase in force of contraction and stroke volume.
- Before performing gradation scale of dyspnoea, the mean value of R.R in female was 18.18/min and SD comes as 2.05 and the same R.R after doing gradation scale the mean comes as 20.43 and SD as
- 2.31; p value is <0.0001 which is highly significant.
- Same way in female P.R. was measure before gradation the mean obtained as 69.81 SD as 8.27 while after gradation P.R measure in the same individual, mean obtained as 74.62 and SD as 9.38 and p value is <0.0001 which is highly significant.
- This shows that after exercise or some sort of work, R,.R and P.R increases above the basal level. This may be due to increase in force of contraction and stroke volume.

Discussions on relation between grades of dyspnoea and vital parameters:

Vital parameters were compared with gradation of scale and shows that as the grades goes on increasing the vital parameters also increases. But statistically significant seen in only SBP. This may be due to less sample size.

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

Discussions on relation between BMI and WHR:

There is a positive correlation between BMI and WHR in male i.e. r value was 0.1454, it means that when BMI increases WHR also increases but statistically it was not significant as p value obtained as 0.4004. Whereas in case of female,

In female there is a negative correlation between BMI and WHR as r value comes as -0.1441 but statistically not significant with p value 0.4313.

This may be due to study population was having BMI till 29.9 not more than that as well as due to less sample size.

Discussions on BMI with Grades of dyspnoea:

Mean BMI in type I grade of dyspnoea was 25.21 and SD comes as 0.26. In type II grade of dyspnoea mean BMI obtained was 26.82 and SD comes as 1.32

In type III grade of dyspnoea mean BMI comes as 28.35 and SD as 1.50. It is statistically significant as p value is <0.0001. It means that as BMI increases grades of dyspnoea also increases. It is the most important concept that forced expiratory flow is not limited with expiratory muscles efforts it also depends on the elasticity of lungs. The lungs and the chest wall are the elastic structure balanced against each other. The expelling air out is its potential energy stored in the elastic tissue, Just like releasing a stretched rubber band. Due to intake of excess of food containing snigdha guna will increase the Aap mahabhuta. So this abnormal quantity of sgnigdha guna looses the elasticity of the lungs and chest wall.

Discussions on relation between BMI and FVC%:

- FVC% is negatively correlated with BMI with r value equal to -1402, it means that when BMI increases the FVC% value will decrease but p value comes as 0.28 which means that there is no significant relation between BMI and FVC%.
- For detail study purpose the BMI was further classified into two groups i.e. between 25-27.5 and between 27.5-30. It has been found that mean value of BMI between 25-27.5 comes as 0.64 and SD as 0.38 while mean value of BMI between 27.5-30 comes as 0.70 and SD as 0.29.

This shows that as BMI increases the difference between normal FVC value and predicted value also increases i.e. inversely proportional. But p value is 0.598 which is non-significant.

Discussion on relation between FVC and WHR:

FVC% is negatively correlated with WHR with r value as -0.1604, it means that when WHR increases FVC will decreases but p value comes as 0.2208 with is not significant.

FVC% was statistically not significant. This may be due to less sample size and also the individual included in the study was having BMI less than 30 i.e. overweight not obesity.

CONCLUSION

After completion of the dissertation work the conclusion is the major part without it the study can‟t be said as complete. From the present study the conclusion has been drawn as follows:

1. After studying literature review, *medovriddhi* and overweight can be

correlated with each other. Due to excess of accumulation of *meda* in the body it can hamper the lung capacity.

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

2. *Medovriddhi* was diagnosed with the help of *Ayurved* parameters (as per *Aacharya Vagbhata*) and modern parameters like BMI. Lung capacity with the help of spirometer. Result obtained as-

- The result obtained as inversely proportional between BMI and FVC but statistically it was not significant. This may be due to less sample size as well as the individual included in the study was having BMI between 25-29.9 i.e. overweight and not above 30 i.e. obese.

3. In *Medovriddhi* like condition it was observed that though the pathology of the lung was normal but still the FVC value decreases. It may be due to reduced *Bala* of the individual. As per modern concept it may due to reduction in both chest wall complianace and respiratory muscle strength. Accumulation of fat in the abdomen will push the diaphragm upward and hampers the respiration process.

However, the present study was carried out in small data, but the sincere efforts were made to put forward the conclusion. By taking large sample size, the further better results can be expected. The outcome of these study also clearly give the importance of diagnosing *medovriddhi* individuals and to aware about its associated complication.

SUMMARY

Ayurveda is an ancient medical science that focuses on maintaining the health of individuals. It emphasizes the importance of balance among various structural and functional units of the body, known as Dosha, Dhatu, Mala, Agni, and Indriya, to promote health. Imbalances in these units can lead to diseases. The study of these units and their functions is referred to as Doshadhatumalavidhyan.

The three Doshas, namely Vata, Pitta, and Kapha, are responsible for regulating the seven bodily tissues known as Rasa, Rakta, Mamsa, Meda, Asthi, Majja, and Shukra. These tissues ensure the proper functioning of the body. Waste products produced during daily activities are referred to as Malas.

A healthy body, according to Sushruta, is essential for achieving the ultimate goal of life. Different scholars have differing views on the ideal body type, with some considering "Madhyam Sharira" (moderate body) as the best, while others favor "krusha sharir" (lean body). Certain conditions, such as being excessively thin or overweight, are associated with complaints and health issues.

Medo dhatu, the fourth bodily tissue, is nourished by food and provides lubrication to the body. In modern terms, it can be correlated with adipose tissue. Excessive intake of sweet, oily, and heavy foods, combined with a lack of physical exercise, can lead to an increase in Medo dhatu. This accumulation of fat tissue can result in various complications, including respiratory diseases. Obesity, defined as excessive fat accumulation, can impair health and is often associated with a sedentary lifestyle and increased consumption of energy-dense, high-fat foods.

Obesity can affect respiratory functions, leading to a reduction in forced vital capacity, which can be measured using spirometry. Spirometry is a functional test of the lungs that measures the maximum amount of air that can be exhaled after a deep inhalation. Due to the prevalence

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

of unhealthy lifestyle habits, such as fast food consumption and sedentary behavior, it becomes crucial to assess the vital capacity of individuals, especially those with excess weight or obesity.

The topic of the study mentioned in the summary is "Observational Study of Shwasakashtata Lakshana Parikshan in Medovriddhi Individuals with Special Reference to Vital Capacity." It aims to investigate the effects of excess weight on vital capacity, focusing on individuals with obesity and overweight. The importance of studying vital capacity in such individuals arises from the need to understand the respiratory health implications associated with weight gain and to address the lack of existing research on this topic.

REFERENCES

1. Sharma. Anantram , Sushruta Samhita, Vol.1, Chaukhamba Surbharati Prakashan, Varanasi, 2013, sutrasthana, adhyaya 15,verse no.47, page no.130.

2. Sharma. Anantram, Sushruta Samhita, Vol.1, Chaukhamba Surbharati Prakashan, Varanasi, 2013, sutrasthana, adhyaya 15,verse no.3, page no.114.

3. Sharma. Anantram, Sushruta Samhita, Vol.1, Chaukhamba Surbharati Prakashan, Varanasi, 2013, sutrasthana, adhyaya 15,verse no.40, page no.129.

4. Atrideva Gupta Kaviraja, Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sutrasthana, adhyaya 11, verse no.1, page no.114.

5. Krishnaji Govind Oka, Amarakosha, Law printing press, poona city, 1913.

6.Maharshi Sushrut, Sushrut Samhita with Nibandh Sangraha Commentary of Shri Dalhanacharya and Nyayachandrika Panjika, edited by Vd. Yadavji Trikamji Acharya, Chaukhmabha Orientalia, Varanasi, 7th edition:2002, sutra sthana, adhyaya 15, verse no.3, page no.67.

7.Tripaṭhi Bramhanand, Charaka samhita, Volume 1, Chaukhambha Surbharati Prakashan, Varanasi, 2015, sutrasthana, adhyaya 9, verse no.4, page no.208.

8. Sharma. Anant Ram, Sushruta Samhita, Vol.1, Chaukhamba Surbharati Prakashan, Varanasi, 2013, sutrasthana, adhyaya 14,verse no.20, page no.105.

9.Maharshi Sushrut, Sushrut Samhita with Nibandh Sangraha Commentary of Shri Dalhanacharya and Nyayachandrika Panjika, edited by Vd. Yadavji Trikamji Acharya, Chaukhmabha Orientalia, Varanasi, 7th edition:2002, sutra sthana, adhyaya 14, verse no.20, page no.64.

10.Gupta Kaviraja Atrideva, Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sutrasthana, adhyaya 1, verse no.13, page no.8.

11.Tripaṭhi Bramhanand, Charaka samhita, Volume 1, Chaukhambha Surbharati Prakashan, Varanasi, 2015, sutrasthana, adhyaya 28, verse no.4, page no.545.

12. Gupta Kaviraja Atrideva, Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015,

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

sutrasthana, adhyaya 11, verse no.34, page no.118.

13. Gupta Kaviraja Atrideva, Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sutrasthana, adhyaya 11, verse no.35, page no.118.

14. Gupta Kaviraja Atrideva, Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sutrasthana, adhyaya 11, verse no.4, page no.114.

15. Taranatha Tarkavachasyapatya, Vachaspatyam, chowkhamba Sanskrit

Series, Varanasi, 1990, volume IV

16. Raja Radhakanta deo, the shabdakalpadrum, part 3, reprint 1987, pubished by Nag Sharan Singh for Nag Publisher,Delhi, page no.779.

17. Raja Radhakanta deo, the shabdakalpadrum, part 3, reprint 1987, pubished by Nag Sharan Singh for Nag Publisher,Delhi, page no.778.

18.Tripaṭhi Bramhanand, Sharangdhar samhita, Chaukhambha

Surabharati Prakashan, Varanasi, 2013, Purvakhanda, adhyaya 5,verse no. 21, page no.40.

19. Raja Radhakanta deo, the shabdakalpadrum, part 3, reprint 1987,

pubished by Nag Sharan Singh for Nag Publisher, Delhi, page no: 778.

20. Vidyadhara Shukla and Prof. Ravidatta Tripathi, Charaka Samhita of Agnivesha, Volume 2, Chaukhamba Sanskrit Pratishthan, Delhi, 2012, chikitsa sthana, adhyaya 15, verse no. 16, page no. 361.

21. Raja Radhakanta deo, the shabdakalpadrum, part 3, reprint 1987, pubished by Nag Sharan Singh for Nag Publisher,Delhi, page no.779.

22. Vidyadhara Shukla and Prof. Ravidatta Tripathi, Charaka Samhita of Agnivesha, Volume 2, Chaukhamba Sanskrit Pratishthan, Delhi, 2012, chikitsa sthana, adhyaya 15, verse no. 16, page no. 361.

23. Shrujanza, Madanmohan, Amarkosha, dwitiya kanda, manushya

varga 64.

24. Sharma Anant Ram, Sushruta Samhita, Vol.2, Chaukhamba Surbharati Prakashan, Varanasi, 2013, sharir sthana, adhyaya 4,verse no.13, page no.49.

25. Shukla Vidyadhara and Prof. Ravidatta Tripathi, Charaka Samhita of Agnivesha, Volume 2, Chaukhamba Sanskrit Pratishthan, Delhi, 2012, chikitsa sthana, adhyaya 15, verse no. 3, page no. 358.

26. Shukla Vidyadhara and Prof. Ravidatta Tripathi, Charaka Samhita of Agnivesha, Volume 2, Chaukhamba Sanskrit Pratishthan, Delhi, 2012, chikitsa sthana, adhyaya 15, verse no. 30, page no. 366.

27. Shukla Vidyadhara and Prof. Ravidatta Tripathi, Charaka Samhita of Agnivesha, Volume 2, Chaukhamba Sanskrit Pratishthan, Delhi, 2012, chikitsa sthana, adhyaya 15, verse no. 6-8, page no. 358.

28. Shukla Vidyadhara and Prof. Ravidatta Tripathi, Charaka Samhita of Agnivesha, Volume 2, Chaukhamba Sanskrit Pratishthan, Delhi, 2012, chikitsa sthana, adhyaya 15, verse no. 13, page no. 360.

29. Ya. Go. Joshi, Charaka Samhita with Chakrapani Tika, Volume 2, Vaidya mitra prakashana, pune, 2016, chikitsa sthana, adhyaya 15, verse no 13, page no.343.

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

30. Shukla Vidyadhara and Prof. Ravidatta Tripathi, Charaka Samhita of Agnivesha, Volume 2, Chaukhamba Sanskrit Pratishthan, Delhi, 2012, chikitsa sthana, adhyaya 15, verse no. 15 page no. 361.

31. Ya. Go. Joshi, Charaka Samhita with Chakrapani Tika, Volume 2, Vaidya mitra prakashana, pune, 2016, chikitsa sthana, adhyaya 15, verse no 16, page no.344.

32. Ya. Go. Joshi, Charaka Samhita with Chakrapani Tika, Volume 1, Vaidya mitra prakashana, pune, 2017, sutra sthana, adhyaya 28, verse no

3, page no.388.

33. Tripaṭhi Bramhanand, Charaka samhita, Volume 1, Chaukhambha Surbharati Prakashan, Varanasi, 2015, sutrasthana, adhyaya 28, verse no.3, page no.545.

34. Sharma Anant Ram, Sushruta Samhita, Vol.1, Chaukhamba Surbharati Prakashan, Varanasi, 2013, sutrasthana, adhyaya 14,verse no.10, page no.102.

35. Ya. Go. Joshi, Charaka Samhita with Chakrapani Tika, Volume 1, Vaidya mitra prakashana, pune, 2017, sutra sthana, adhyaya 28, verse no

4, page no.390.

36. Ya. Go. Joshi, Charaka Samhita with Chakrapani Tika, Volume 1, Vaidya mitra prakashana, pune, 2017, sutra sthana, adhyaya 28, verse no

4, page no.390.

37. Ya. Go. Joshi, Charaka Samhita with Chakrapani Tika, Volume 1, Vaidya mitra prakashana, pune, 2017, sutra sthana, adhyaya 28, verse no

4, page no.390.

38. Ya. Go. Joshi, Charaka Samhita with Chakrapani Tika, Volume 1, Vaidya mitra prakashana, pune, 2017, sutra sthana, adhyaya 28, verse no

4, page no.390.

39. Tripaṭhi Bramhanand, Charaka samhita, Volume 1, Chaukhambha Surbharati Prakashan, Varanasi, 2015, sutrasthana, adhyaya 21, verse no.4, page no.399.

40. Gupta Kaviraja Atrideva, Asthanga Hridaya of Vagbhata, Chaukhamba

Prakashan, Varanasi, 2015, sutrasthana, adhyaya 11, verse no.26, page no.117.

41. Asthanga Hridaya of Vagbhata with the commentaries: Sarvanga- Sundara of Arundatta and Ayurvedarasayana of Hemadri, by Dr. Anna Moreshwar Kunte, Chaukhambha Surbharati Prakashan,Varanasi Sutra sthana, adhyaya no.11, verse no.26, page no.186.

42. Asthanga Sangraha of Vagbhata, Text English Translation, Translated by Prof. K.R. Shrikantha Murthy, Chowkhambha Orientalia, Varanasi, fourth edition 2003, Volume 1, Sutra sthana, adhyaya no.19, verse

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

no.14, page no.360.

43. Asthanga Sangraha of Vagbhata, Text English Translation, Translated by Prof. K.R. Shrikantha Murthy, Chowkhambha Orientalia, Varanasi, fourth edition 2003, Volume 1, sutra sthana, adhyaya no.19, verse no.21, page no.361.

44. Ya. Go. Joshi, Charaka Samhita with Chakrapani Tika, Volume 2, Vaidya mitra prakashana, pune, 2016, chikitsa sthana, adhyaya 15, verse no 24, page no.350.

45.Tripaṭhi Bramhanand, Sharangdhar samhita, Chaukhambha Surabharati Prakashan, Varanasi, 2013, Purvakhanda, adhyaya 5,verse no. 21, page no.40.

46. Vidyadhara Shukla and Prof. Ravidatta Tripathi, Charaka Samhita of Agnivesha, Volume 2, Chaukhamba Sanskrit Pratishthan, Delhi, 2012, chikitsa sthana, adhyaya 15, verse no. 21, page no. 365.

47. Kaviraja Atrideva Gupta, Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sharira sthana, adhyaya 3, verse no.65, page no.258.

48. Padmawara R., kriya-sharir vidgyana, Shree Baidynath Bhavan
Ayurved limited, Nagpur, edition 2000, chapter no.19, page no.166.

49. Anant Ram Sharma, Sushruta Samhita, Vol.1, Chaukhamba Surbharati Prakashan, Varanasi, 2013, sutrasthana, adhyaya 14,verse no.14, page no.104. 50. Maharshi Sushrut, Sushrut Samhita with Nibandh Sangraha Commentary of Shri Dalhanacharya and Nyayachandrika Panjika, edited by Vd. Yadavji Trikamji Acharya, Chaukhmabha Orientalia, Varanasi, 7th edition:2002, sutra sthana, adhyaya 15, verse no.10, page no.69.

51. Vidyadhara Shukla and Prof. Ravidatta Tripathi, Charaka Samhita of Agnivesha, Volume 2, Chaukhamba Sanskrit Pratishthan, Delhi, 2012, chikitsa sthana, adhyaya 15, verse no. 30, page no. 366.

52. Bramhanand Tripaṭhi, Charaka samhita, Volume 1, Chaukhambha Surbharati Prakashan, Varanasi, 2015, vimana sthana, adhyaya 5, verse no.10, page no.697.

53. Anant Ram Sharma, Sushruta Samhita, Vol.2, Chaukhamba Surbharati Prakashan, Varanasi, 2013, Sharira sthana, adhyaya 9,verse no.12, page no.122.

54. Asthanga Sangraha of Vagbhata, Text English Translation, Translated by Prof. K.R. Shrikantha Murthy, Chowkhambha Orientalia, Varanasi, fourth edition 2003, Volume 2, sharir sthana, adhyaya no.6, verse no.18, page no.80.

55. Ya. Go. Joshi, Charaka Samhita with Chakrapani Tika, Volume 1, Vaidya mitra prakashana, pune, 2017, vimana sthana, adhyaya 5, verse no 8, page no.542.

56. Sharma Anant Ram, Sushruta Samhita, Vol.2, Chaukhamba Surbharati Prakashan, Varanasi, 2013, sharira sthana, adhyaya 4,verse no.31, page no.54.

57. Maharshi Sushrut, Sushrut Samhita with Nibandh Sangraha

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

Commentary of Shri Dalhanacharya and Nyayachandrika Panjika, edited by Vd. Yadavji Trikamji Acharya, Chaukhmabha Orientalia, Varanasi, 7th edition:2002, nidana sthana, adhyaya 9, verse no.18, page no.303.

58. Ya. Go. Joshi, Charaka Samhita with Chakrapani Tika, Volume 1, Vaidya mitra prakashana, pune, 2017, vimana sthana, adhyaya 5, verse no 8, page no.542.

59. Bramhanand Tripaṭhi, Charaka samhita, Volume 1, Chaukhambha Surbharati Prakashan, Varanasi, 2015, vimana sthana, adhyaya 5, verse no.16, page no.699.

60. Kaviraja Atrideva Gupta, Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sharira sthana, adhyaya 3, verse no.9, page no.250.

61.Sharma Anant Ram, Sushruta Samhita, Vol.2, Chaukhamba Surbharati Prakashan, Varanasi, 2013, sharira sthana, adhyaya 4,verse no.12-13, page no.49.

62.Sharma Anant Ram, Sushruta Samhita, Vol.1, Chaukhamba Surbharati Prakashan, Varanasi, 2013, sutra sthana, adhyaya 15,verse no.42, page no.129.

63.Tripaṭhi Bramhanand, Charaka samhita, Volume 1, Chaukhambha Surbharati Prakashan, Varanasi, 2015, sharira sthana, adhyaya 7, verse no.15, page no.927.

64. Gupta Kaviraja Atrideva, Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sharira sthana, adhyaya 3, verse no.80, page no.260.

65.Sharma Anant Ram, Sushruta Samhita, Vol.1, Chaukhamba Surbharati Prakashan, Varanasi, 2013, sutra sthana, adhyaya 15,verse no.7, page no.115.

66. Gupta Kaviraja Atrideva, Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sutra sthana, adhyaya 11, verse no.4, page no.114.

67. Asthanga Hridaya of Vagbhata with the commentaries: Sarvanga- Sundara of Arundatta and Ayurvedarasayana of Hemadri, by Dr. Anna Moreshwar Kunte, Chaukhambha Surbharati Prakashan,Varanasi, sutra sthana, adhyaya no.11, verse no.4, page no.183

68. Asthanga Hridaya of Vagbhata with the commentaries: Sarvanga- Sundara of Arundatta and Ayurvedarasayana of Hemadri, by Dr. Anna Moreshwar Kunte, Chaukhambha Surbharati Prakashan,Varanasi, sutra sthana, adhyaya no.11, verse no.4, page no.183

69. Asthanga Sangraha of Vagbhata, Text English Translation, Translated by Prof. K.R. Shrikantha Murthy, Chowkhambha Orientalia, Varanasi, fourth edition 2003, Volume 1, Sutra sthana, adhyaya no.19, verse no.2, page no.350.

70. Acharya Vidyadhara Shukla and Ravidatta Tripathi, Charaka Samhita of Agnivesha, Volume 2, Chaukhamba Sanskrit Pratishthan, Delhi, 2012, chikitsa sthana, adhyaya 15, verse no. 17, page no.361.

71. Sharma Anant Ram, Sushruta Samhita, Vol.2, Chaukhamba Surbharati Prakashan, Varanasi,

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

2013, sharira sthana, adhyaya 4,verse no.29, page no.54.

72. Tripaṭhi Bramhanand, Sharangdhar samhita, Chaukhambha Surabharati Prakashan, Varanasi, 2013, Purvakhanda, adhyaya 5,verse no. 29, page no.41.

73. Padmawara R., kriya-sharir vidgyana, Shree Baidynath Bhavan Ayurved limited, Nagpur, edition 2000, chapter no.19, page no.166.

74. Vidyadhara Shukla and Prof. Ravidatta Tripathi, Charaka Samhita of Agnivesha, Volume 2, Chaukhamba Sanskrit Pratishthan, Delhi, 2012, chikitsa sthana, adhyaya 15, verse no. 18, page no.364.

75. Kaviraja Atrideva Gupta, Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sharira sthana, adhyaya 3, verse no.63, page no.258.

76. Bramhanand Tripaṭhi, Sharangdhar samhita, Chaukhambha Surabharati Prakashan, Varanasi, 2013, Purvakhanda, adhyaya 5,verse no. 27, page no.40.

77. Bramhanand Tripaṭhi, Sharangdhar samhita, Chaukhambha Surabharati Prakashan, Varanasi, 2013, Purvakhanda, adhyaya 5,verse no. 26, page no.40.

78. Kaviraja Atrideva Gupta, Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, nidana sthana, adhyaya 12, verse no.1, page no. 120.

79. Gupta V., A concept of Medoroga and hyperlipidemia in Ayurveda: A Scientific review, European Journal of Pharmaceutical and Medical Research 2017; 4(10): 220-223.

no.32, page no. .

81. Kaviraja Atrideva Gupta, Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sutra sthana, adhyaya 1, verse no.13, page no. 9.

82. Kaviraja Atrideva Gupta, Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, nidana sthana, adhyaya 1, verse no.17, page no. 296.

83. Kaviraja Atrideva Gupta, Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sutra sthana, adhyaya 11, verse no.10, page no.115.

84.Anant Ram Sharma, Sushruta Samhita, Vol.1, Chaukhamba Surbharati Prakashan, Varanasi, 2013, sutra sthana, adhyaya 15,verse no.18, page no.122. 85. Asthanga Sangraha of Vagbhata, Text English Translation, Translated by K.R. Shrikantha Murthy, Chowkhambha Orientalia, Varanasi, fourth edition 2003, Volume 1, Sutra sthana, adhyaya no.19, verse no.4, page no.351.

86. Tripaṭhi, Bramhanand, Charaka samhita, Volume 1, Chaukhambha Surbharati Prakashan, Varanasi, 2015, sutra sthana, adhyaya 17, verse no.66, page no.350.

87. Sharma Anant Ram, Sushruta Samhita, Vol.1, Chaukhamba Surbharati Prakashan, Varanasi, 2013, sutra sthana, adhyaya 15,verse no.13, page no.119.

88. Kaviraja Atrideva Gupta, Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sutra

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

sthana, adhyaya 11, verse no.18, page no.116.

89. Asthanga Sangraha of Vagbhata, Text English Translation, Translated by Prof. K.R. Shrikantha Murthy, Chowkhambha Orientalia, Varanasi, fourth edition 2003, Volume 1, Sutra sthana, adhyaya no.19, verse no.6, page no.353.

no.8:4, page no.205.

91. Krishnaji Govind Oka, Amarkosha Law printing press, Poona city 1993.

92. Tripaṭhi Bramhanand, Charaka samhita, Volume 1, Chaukhambha Surbharati Prakashan, Varanasi, 2015, vimana sthana, adhyaya 8, verse no.106, page no.764.

93. Sharma Anant Ram, Sushruta Samhita, Vol.1, Chaukhamba Surbharati Prakashan, Varanasi, 2013, sutra sthana, adhyaya 35,verse no.16, page no.273.

94. Tripaṭhi Bramhanand, Charaka samhita, Volume 1, Chaukhambha Surbharati Prakashan, Varanasi, 2015, sutra sthana, adhyaya 21, verse no.4, page no.399.

95. Shastri. Hargovinda, Namalinganushasana or Amarkosha of Amarsimha, chaukhambha Sanskrit samsthana, swarga varga, page no.31.

96. Acharya Shukla V. and Tripathi R., Charaka Samhita of Agnivesha, Volume 2, Chaukhamba Sanskrit Pratishthan, Delhi, 2012, chikitsa sthana, adhyaya 11, verse no. 1.

97. Acharya Shukla V. and Tripathi R., Charaka Samhita of Agnivesha, Volume 2, Chaukhamba Sanskrit Pratishthan, Delhi, 2012,

98. Tripathi Bramhanand, Charaka samhita, Volume 1, Chaukhambha Surbharati Prakashan, Varanasi, 2015, vimana sthana, adhyaya 5, verse no.3, page no.695.

99. Tripaṭhi Bramhanand, Charaka samhita, Volume 1, Chaukhambha Surbharati Prakashan, Varanasi, 2015, vimana sthana, adhyaya 5, verse no.7, page no.696.

Surbharati Prakashan, Varanasi, 2013, sharira sthana, adhyaya 9,verse no.12, page no.122.

101. Tripaṭhi Bramhanand, Sharangdhar samhita, Chaukhambha Surabharati Prakashan, Varanasi, 2013, Purvakhanda, adhyaya 5,verse no. 76, page no.46.

102. Desai. Ranjitrai, textbook of kriya-sharir; Shree Baidyanath Ayurved bhavan limited, Nagpur; 2010, chapter no.18, page no.594

103. Desai. Ranjitrai, textbook of kriya-sharir; Shree Baidyanath Ayurved bhavan limited, Nagpur; 2010, chapter no.18, page no.594

104. Tripaṭhi Bramhanand, Sharangdhar samhita, Chaukhambha Surabharati Prakashan, Varanasi, 2013, Purvakhanda, adhyaya 5,verse no. 89, page no.47.

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

105. Gupta K.A., Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan,
Varanasi, 2015, sutra sthana, adhyaya 12, verse no.4, page no.120.

106. Gupta K.A., Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sutra sthana, adhyaya 1, verse no.11, page no.8.

107. Tripaṭhi Bramhanand, Sharangdhar samhita, Chaukhambha
Surabharati Prakashan, Varanasi, 2013, Purvakhanda, adhyaya 5,verse no. 88, page no.47.

108. Tripaṭhi Bramhanand, Sharangdhar samhita, Chaukhambha
Surabharati Prakashan, Varanasi, 2013, Purvakhanda, adhyaya 5,verse no. 89-91, page no.47-48.

109. Tripaṭhi Bramhanand, Sharangdhar samhita, Chaukhambha
Surabharati Prakashan, Varanasi, 2013, Purvakhanda, adhyaya 5,verse no. 61, page no.44.

110. Sharma Anantram, Sushruta Samhita, Vol.2, Chaukhamba Surbharati Prakashan, Varanasi, 2013, sharira sthana, adhyaya 4,verse no.31, page no.54.

111. Tripaṭhi Bramhanand, Sharangdhar samhita, Chaukhambha Surabharati Prakashan, Varanasi, 2013, Purvakhanda, adhyaya 5,verse no. 91, page no.48.

112. Gupta K.A., Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sutra sthana, adhyaya 20, verse no.1, page no.172.

113. Sharma Anantram, Sushruta Samhita, Vol.2, Chaukhamba
Surbharati Prakashan, Varanasi, 2013, sharira sthana, adhyaya 6, verse no.28, page no.97.

114. Tripaṭhi Bramhanand, Sharangdhar samhita, Chaukhambha Surabharati Prakashan, Varanasi, 2013, Purvakhanda, adhyaya 5,verse no. 79, page no.46.

115. Tripaṭhi Bramhanand, Sharangdhar samhita, Chaukhambha Surabharati Prakashan, Varanasi, 2013, Purvakhanda, adhyaya 5,verse no. 80, page no.46.

116. Gupta K.A., Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sutra sthana, adhyaya 11, verse no.1, page no.114.

117. Gupta K.A., Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sutra sthana, adhyaya 11, verse no.1, page no.114.

118. Tripaṭhi Bramhanand, Sharangdhar samhita, Chaukhambha
Surabharati Prakashan, Varanasi, 2013, Purvakhanda, adhyaya 5, verse no. 43, page no.42.

119. Gupta K.A., Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sutra sthana, adhyaya 12, verse no.4, page no.120.

120. Gupta K.A., Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan,
Varanasi, 2015, sutra sthana, adhyaya 12, verse no.5, page no.120.

121. Gupta K.A., Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sutra sthana, adhyaya 12, verse no.2, page no.120.

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

122. Gupta K.A., Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sutra sthana, adhyaya12, verse no.13, page no.121.

123. Gupta K.A., Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sutra sthana, adhyaya 12, verse no.3, page no.120.

124. Gupta K.A., Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sutra sthana, adhyaya 12, verse no.15-16, page no.122.

125. Sharma Anant Ram, Sushruta Samhita, Vol.1, Chaukhamba Surbharati Prakashan, Varanasi, 2013, sutra sthana, adhyaya 14, verse no.3, page no.100.

126. Sharma Anant Ram, Sushruta Samhita, Vol.2, Chaukhamba Surbharati Prakashan, Varanasi, 2013, sharira sthana, adhyaya 7, verse no.14, page no.104.

127. Gupta K.A., Asthanga Hrudaya of Vagbhata, Chaukhamba Prakashan, Varanasi, 2015, sutra sthana, adhyaya 11, verse no.4, page no.114.

128. Gupta K.A., Sushruta Samhita, Vol.1, Chaukhamba Surbharati Prakashan, Varanasi, 2013, sutra sthana, adhyaya 15, verse no.5, page no.115.

129. www.sciencedaily.com

130. https://en.m.wikipedia.org

131. Dhargalkar N.D., Sharira-Kriya-Vidnana (A Text Book Physiology in Ayurveda), Chowkhambha Sanskrit Series Office, Varanasi, volume 2, Ayurveda part-Meda dhatu- pg no.477.

132. Dhargalkar N.D., Sharira-Kriya-Vidnana (A Text Book Physiology in Ayurveda), Chowkhambha Sanskrit Series Office, Varanasi, volume 2, Ayurveda part-Meda dhatu- pg no.477.

133. Dhargalkar N.D., Sharira-Kriya-Vidnana (A Text Book Physiology in Ayurveda), Chowkhambha Sanskrit Series Office, Varanasi, volume 2, Ayurveda part-Meda dhatu- pg no.477.

134. Dhargalkar N.D., Sharira-Kriya-Vidnana (A Text Book Physiology in Ayurveda), Chowkhambha Sanskrit Series Office, Varanasi, volume 2, Ayurveda part-Meda dhatu- pg no. 478

135. Dhargalkar N.D., Sharira-Kriya-Vidnana (A Text Book Physiology in Ayurveda), Chowkhambha Sanskrit Series Office, Varanasi, volume 2, Ayurveda part-Meda dhatu- pg no. 478

136. Dhargalkar N.D., Sharira-Kriya-Vidnana (A Text Book Physiology in Ayurveda), Chowkhambha Sanskrit Series Office, Varanasi, volume 2, Ayurveda part-Meda dhatu, chapter no.21, pg no. 309

137. Dhargalkar N.D., Sharira-Kriya-Vidnana (A Text Book Physiology in Ayurveda), Chowkhambha Sanskrit Series Office, Varanasi, volume 2, Ayurveda part-Meda dhatu, chapter no.21, pg no. 309

138. Dhargalkar N.D., Sharira-Kriya-Vidnana (A Text Book Physiology in Ayurveda), Chowkhambha Sanskrit Series Office, Varanasi, volume 2, Ayurveda part-Meda dhatu, chapter no.21, pg no. 310

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,S Iss 3, Dec 2022

139. Dhargalkar N.D., Sharira-Kriya-Vidnana (A Text Book Physiology in Ayurveda), Chowkhambha Sanskrit Series Office, Varanasi, volume 2, Ayurveda part-Meda dhatu, chapter no.21, pg no. 481.

140. Dhargalkar N.D., Sharira-Kriya-Vidnana (A Text Book Physiology in Ayurveda), Chowkhambha Sanskrit Series Office, Varanasi, volume 2, Ayurveda part-Meda dhatu, chapter no.21, pg no.483-4

141. www.who.int

142. Diabetes Metab Syndr. 2019 PUBMED

143. Sembulingam K. and Sembulingam P., Essentials of Medical Physiology, Jaypee Brothers, New Delhi, fourth edition: 2006, section:9, chapter no: 118, page no: 609-611.

144. Sembulingam K. and Sembulingam P., Essentials of Medical Physiology, Jaypee Brothers, New Delhi, fourth edition: 2006, section:9, chapter no: 120, page no: 615-616.

145. Chatterjee C.C., Human Physiology, Volume 1, Medical Allied Agency, Culcutta, eleventh edition reprint May, 1987, chap name- respiratory system, chap no. 8, page no 372-373.

146. Chatterjee C.C., Human Physiology, Volume 1, Medical Allied Agency, Culcutta, eleventh edition reprint May, 1987, chap name- respiratory system, chap no. 8, page no 373.