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ASSESSMENT OF RELATION BETWEEN DEHABALA AND SHUKRA
SARATA IN MARRIED MALES.

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ABSTRACT

The growth and existence of the human body is dependent on these seven *Dhatus*. These seven *Dhatus* are composed of five elements or *Panchmahabhutas*. *Dhatu Sarata* or Tissue excellence is a quality assessment of seven dhatu. Examination of *Dhatu Sarata* is done at physical and psychological level. Here '*Shukra*' not only as reproductive tissue but as a whole representation of mental, physical & spiritual aspects of reproduction is very important. The completely healthy aspects of all these are manifested in *Uttam Shukra sara* person. For determining the *sarata*, when the positive features are present above 75 %, it will be considered as best tissue quality (*Uttam Sarata*). When the positive features are present between 75 % and 25 %, it will be considered as moderate tissue quality (*Madhyam sarata*). When positive features are present below 25 %, it will be labelled as poor tissue quality (*Heen sarata*). The bodily movements which are meant for producing firmness and strength in the body are known as *Vyayama* or physical exercises. '*Dehabala*' (Physical fitness) of subjects will be determined by Harvard step test. "Harvard Step Test" is a practical application of Ayurvedic Principal that "*Bala* should be measured by *vyamshakti*" (*Balam Vyayamshakty Parikshet*). The person should be examined with reference to his capacity for exercise which is determined by one's ability to perform work. Therefore this study will estimate *Dehabala* and study the *Shukra sarata* and their association between them.

Keyword: *Shukrasarata*, *Dehabala*, Tissue excellence, Harvard Step Test

INTRODUCTION:-

According to Ayurvedic system of medicine, the seven *Dhatus* are chiefly responsible for the immunity. Ayurvedic system of medicine follows a very rational and specific method for treatment for diseases having relation to the particular *Dhatus*. The growth and existence of the human body is dependent on these seven *Dhatus*. These seven *Dhatus* are composed of five elements or *Panchmahabhutas*. When there is an imbalance or disequilibrium in functioning of the *Dhatus*, the result is the manifestation of the disease.¹

Among all the *Dhatus*. *Shukradhatu* is important for fertility and body strength. *Acharya Sushruta* stated the function of *Shukradhatu* as ; *Shukra* in normal state gives *Dhairya*(courage); *Chyavan* (Timely ejaculation); *Preeti* (Attraction of opposite sex and progeny); *Dehabala* (physical strength and stamina); *Harsh* (psychological and physical healthy background for reproduction); *Bijartham* (fertility).²

Dhatu Sarata is described with respect to *Sapta Dhatu*, as *Rasa*, *Rakta*, *Mamsa*, *Medas*, *Asthi*, *Majja*, *Shukra* & *Satva*. i.e. *Ashtavidhasarata*. *Dhatu Sarata* or Tissue excellence is a quality assessment of seven *Dhatu*. Examination of *Dhatu Sarata* is done at physical & psychological level. To

assess the *Dhatu Sarata*; when the positive features are present above 75%, it will be considered as best tissue quality (*Uttam Sarata*). When the positive features are present between 75% and 25% it will be considered as moderate quality (*Madhyam Sarata*). When the positive features are present below 25% it will be labelled as poor tissue quality (*Heen Sarata*).³

Sushruta says the supreme essence of all the *Dhatus* beginning with *Rasa* and ending with *Shukra* is known as *Ojas* and the same is also called *Bala*. And in *Shukra Sara Laxanas Charak* explains that Physical Strength or *Dehabala* is more in *Shukra Sarata* *Dehabala* is measured with help of ability to perform *Vyayamshakti*; which means physical work. capacity for exercise which is determined by one's ability to perform work like lifting weight etc; according to modern science the Harvard Step Test is measure to assess the *Sharirik Bala* or Physical Strength .⁴

AIM:-

To study the relation between *Dehabala* & *Shukrasarata* in married males.

OBJECTIVES :-

- 1)To assess the *Shukra Dhatu Sarata* of subject.
- 2)To measure the *Dehabala* of subject according to Harvard step test method

3)To establish the relation between *Dehabala* and *Shukra Dhatu Sarata*

MATERIAL AND METHODS:-

INCLUSION CRITERIA :-Married males between the age group of 25yrs to 35yrs with characters of *Uttam Shukra Sarata* and also having child or children will be included in the study.

METHODS:-

Previously detected 60 male volunteers of *Uttam Shukra Sara* was selected according to inclusion criteria.-Detection of *Dehabala* was assessed with help of Harvard step test. Assessment criteria, & gradation chart for *Sarparikshan*, Harvard step test was attached.-The observational data arranged systematically & analysed statistically for establishment of relation between *shukrasarata* and *dehabala*. Spearman rank correlation test was applied.-conclusion was drawn based on data, result of statistical analysis and discussion.

HARVARD STEP TEST

Principle & Procedure: Physical fitness of each person is determined by Harvard step test. This test is a practical application of Ayurvedic principle that *Bala* should be measured by *Vyayamshakti (bala vyayamshaktya parikshet)*. -The subject steps up and down on the bench of having height 20 inches stepping at rate of 30

steps/minutes. It will be performed for period of 5 minutes or until exhaustion.⁵

Physical efficiency index is calculated with following formula:

$$\frac{\text{duration of exercise in seconds} \times 100}{2 \times (A+B+C)}$$

$$PEI= \frac{\text{duration of exercise in seconds} \times 100}{2 \times (A+B+C)}$$

Where,

A= pulse of 1 to 1.5 minutes during recovery

B= pulse of 2 to 2.5 minutes during recovery

C= pulse of 3 to 3.5 minutes during recovery

GRADATION:-

Each point in above assessment carries maximum 4 & minimum 0 point

- Maximum points = 68
- Minimum points = 0

Type of sara	Points	Considered %
Uttam	45-68	65-100%
Madhyam	18-44	26-64%
Heen	0-17	Up to 25%

(Sara Assessment & Gradation based on previous work done)

Classification of index according to fitness

Physical Efficiency Index	Fitness
Below 55	Poor
55-64	Low Average
65-79	Average
80-89	Good
90 and above	Excellent

OBSERVATION AND RESULT:-

Distribution Of Volunteers According To Age:-

Sr no.	Age group	Count	%
1	25-28	17	28.33
2	26-32	25	41.67
3	33-36	18	30.00
Total		60	100

Out of 60 volunteers, 17 volunteers (28%) were having age between 25 –28 years, 25 volunteers (42%) were from age group 29 –32 years while 18 volunteers (30%) were with age between 33 –36 years. The mean age of volunteer was 30.5 years with S.D of 3.15 years.

Distribution Of Volunteers According To Shukra Sarata Points:-

Sr no	Shukra sarata points group	Count	%
1	46-50	05	08.33
2	51-55	07	11.67
3	56-60	15	25.00
4	61-65	26	43.33
5	66-70	07	11.67
Total		60	100

Out of 60 volunteers, 5 volunteers (8%) were having *shukra Sarata* point between 46 –50, 7 volunteers (12%) were with *Sarata* points between 51 –55, 15 volunteers (25%) were with *Sarata* points 56 –60, 26 volunteers (43%) were having *Sarata* points between 61 –65 while

remaining 7 volunteers (12%) were having *Sarata* points between 66 –70.

Distribution Of Volunteers According To Ardhashakti Vyayam Time:-

Sr no.	Ardhashakti Vyayam time	count	%
1	Up to 220	04	06.67
2	220-240	00	00.00
3	240-260	01	01.67
4	260-280	53	88.33
5	280-300	02	03.33
Total		60	100

Out of 60 volunteers, 4 volunteers (7%) were with *Ardhashakti Vyayam* time up to 220 sec, 1 volunteer (2%) was with *Ardhashakti Vyayam* time between 240 – 260, 53 volunteers were with *Ardhashakti Vyayam* time between 260 –280 while remaining 2 volunteers (3%) were having *Ardhashakti Vyayam* time between 280 – 300. *Ardhashakti Vyayam* Criteria was based on *Shushrut Samhita (su.chi.24/47)*.^{6,7,8}

Distribution Of Volunteers According To Pei Score:-

Sr no.	PEI score Group	Count	%
1	50-60	01	01.67
2	60-70	04	06.67
3	70-80	06	10.00
4	80-90	15	25.00
5	90-100	30	50.00

6	100-110	03	05.00
7	110-120	01	01.67
Total		60	100

Out of 60 volunteers, 1 volunteer (2%) was having PEI score between 50 –60, 4 volunteers (7%) were found with index score between 60 –70, for 6 volunteers (10%), fitness score was between 70 –80, 15 volunteers (25%) were with fitness score range 80–90, maximum 30 volunteers (50%) were having score between 90 –100, 3 (5%) were with score between 100 –110 while 1 volunteer (2%) was with PEI score ranging between 110 - 120

Distribution Of Volunteers According To Fitness Gradation:-

Sr. no.	Fitness gradation	count	%
1	poor	00	00
2	Low average	04	06.67
3	Average	07	11.67
4	Good	15	25.00
5	Excellent	34	56.67
Total		60	100

Out of 60 volunteers, 4 volunteers (7%) were having low fitness grade, 7 volunteers (12%) were with low average fitness grades, 15 volunteers (25%) were with good fitness while 34 volunteers (57%) showed excellent fitness grade.

Correlation Between Shukra Sarata And Dehabala Findings :-

Spearman rank correlation test:

The procedure for calculating Spearman rank correlation test is:

- 1) Assigns ranks in ascending order to *Shukra Sarata* points and PEI scores, separately
- 2) Calculate d = difference in ranks between those of *shukra Sarata* points and PEI score for each of 60 observations.

The “Spearman rank correlation coefficient” is calculated as

$$r = \frac{6d^2}{1-n(n^2-1)}$$

the correlation between *Shukra Sarata* points and PEI score was found to be rho = 0.448 which was significantly positive (P-value < 0.001). Thus, it can be said that, *Shukra Sarata* and PEI score were positively associated in married males.

The correlation between *Shukra Sarata* points and *Ardhashakti Vyayam* time was found to be rho = 0.371 which was significantly positive (P-value = 0.004). Thus, it can be said that, *Shukra Sarata* and *Ardhashakti Vyayam* time were positively associated in married males. Thus, it can be concluded that, *Shukra Sarata* and *Dehabala* are positively associated in married males.

CONCLUSION:-

At the end of this study, conclusions are drawn on the basis of the observations noted, results obtained and discussion with experts. These are as follows: Thus, it can be said that, *Shukra Sarata* and PEI score were positively associated in married males.

Thus, it can be said that, *Shukra Sarata* and *Ardhashakti Vyayam* time were positively associated in married males.

Thus, age and *Deahabala* were not significantly associated.

Thus, it can be concluded that, *Shukra Sarata* and *Dehabala* are positively associated in married males

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