

STUDY OF BALA IN DIFFRENT PRAKRUTI WITH THE HELP OF GRIP STRENGTH METER (DYANAMOMETER)**¹Dr. Smita S. Kadu, ²Dr. Krishna Deshapande and ³Dr. Kanchan Y. Hinge***

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ABSTRACT

Ayurveda has emerged as a new hope for the world in terms of its usefulness in treating various diseases with minimal adverse effects. It is important that the system is explained to the modern world in the language and the terminology they understand. Prakruti Parikshan, Bala Parikshan are the important physical and functional examination of the body. According to Bruhtrayee Heen, Mdhyam and Uttama Bala are seen in Vata, Pitta and Kapha Prakruti individuals respectively. To calculate the Bala of person we can use Grip Strength Meter. So it may be useful to develop some parameter while assessing Prakruti of the individuals. This article is an effort to explain the Bala Parikshan explained in Ayurvedic texts in view of modern day knowledge.

KEYWORDS: Grip Strength Meter, Dyanamomter, Bala, Prakruti.

INTRODUCTION

Ayurveda is a way of life, a culture, a complete health science and moreover, across section of the scientific thought of many generations. Ayurveda defines a healthy individual a way back classical text of Charak, Sushrut and Vagbhatta. Ayurveda aims to prevention of an individual's health and for pacification of disease. Prakruti, Dhatusarata, Dosha are the pillars of Ayurveda, which help in diagnosis, treatment and research.

In Ayurveda Prakruti Parikshan is one of the important Parikshan. It decided the Mul Prakruti of the individuals. Vagbhatta define Bala as a Heen, Madhyam and Uttam in Vata, Pitta and Kapha Prakruti respectively.

With the help of grip strength meter we can calculate Bala of an individual. So it may be useful to develop some parameter while assessing Prakruti. So I decided to work on it.

AIM

To determine the Bala in different Prakruti with the help of grip strength meter.

OBJECTIVES

To compile references regarding Bala in different Prakruti

To compare study of Prakruti and Bala with the help of dyanamometer.

MATERIAL AND METHODOLOGY

Material

1. Detail description of Prakruti in ayurvedic text.
2. Detail description of grip strength meter Dynamometer.
3. Randomly selection of 60 subjects, age between 18yrs to 23yrs. 30 male and 30 female subjects will be taken after filling consent form. Subject will be from Dr. D.Y. Patil College of Ayurved and Research Center Pimpri Pune 18.

Method

The subjects are examine in following manner.

1. The individual access with standard Prakruti format.
2. 30 male and 30 female subjects are randomly selected.
3. Written consent is taken.
4. The assessment of Prakruti is carried out by filling standard format.
5. Grip strength reading is taken from right hand with the help of hand Dynamometer.
6. These recordings Is tabularized.

INCLUSION CRITRERIA

1. Age group subject having age 18-23 yrs is included.
2. Subject is included only after informed consent.
3. Healthy individuals are taken.
4. No past history of illness regarding muscles.

EXCLUSION CRITERIA

1. Below 18 yrs and above 23yrs are excluded.
2. Not willing subject.
3. Past history of illness.
4. On regular medicine.

Information about Handgrip Strength Test

The purpose of this test is to measure the maximum isometric strength of the hand and forearm muscles. Handgrip strength is important for any sport in which the hands are used for catching, throwing or lifting. Also, as a general rule people with strong hands tend to be strong elsewhere, so this test is often used as a general test of strength.

Equipment required: Handgrip Dynamometer.

Procedure: The subject holds the dynamometer in the hand to be tested, with the arm at right angles and the elbow by the side of the body. The handle of the dynamometer is adjusted if required - the base should rest on first metacarpal (heel of palm), while the handle should rest on middle of four fingers. When ready the subject squeezes the dynamometer with maximum isometric effort, which is maintained for about 5 seconds. No other body movement is allowed. The subject should be strongly encouraged to give a maximum effort. See videos of the Handgrip Strength Test.

Variations: The position of the arm and hand can vary in different grip strength protocols. Various positions include the elbow being held at right angles as per the above procedure, the arm hanging by the side, and the extended arm being swung from above the head to by the side during the squeezing motion. The Eurofit Test Manual recommends squeezing for 3 seconds. The procedure for the Groningen Elderly Tests has the subject hang their hand by their side, one practice trial, best of three attempts with 30 seconds rest between.

Scoring: The best result from several trials for each hand is recorded, with at least 15 seconds recovery between each effort. The values listed below (in kg and lbs) give a guide to expected scores for adults. These values are the average of the best scores of each hand. See more Hand Grip Strength Norms. Other protocols will just use the score from the dominant hand, or compare the left and right hand results. See also examples of some actual athlete results.

	MALES		FEMALES	
rating*	(lbs)	(kg)	(lbs)	(kg)
Excellent	> 141	> 64	> 84	> 38
very good	123-141	56-64	75-84	34-38
above average	114-122	52-55	66-74	30-33
Average	105-113	48-51	57-65	26-29
below average	96-104	44-47	49-56	23-25
Poor	88-95	40-43	44-48	20-22
very poor	< 88	< 40	< 44	< 20

* norms for adults. Source and population group unknown

Validity: The validity of this test as a measure of general strength has been questioned, as the strength of the forearm muscles does not necessarily represent the strength of other muscle groups. If you wish to measure the strength of a particular muscle group, there are other specific tests that can be performed.

Reliability: the dynamometer may need to be calibrated regularly to ensure consistent results. Having consistent technique and adequate rest is required to ensure reliability.

Advantages: This is a simple and commonly used test of general strength level, well researched and many norms are available.

Disadvantages: The dynamometer must be adjusted for hand size, how successfully this is done will affect the accuracy of the measurement.

Ayurvedic view related to Bala in different deha prakruti

Vata prakriti

Due to all these properties of vatadosha person of vata prakrti is physically weak, has less children, lives short span life, gets less facilities for living, and are crooked minded.(i)

He remains poor in wealth. He is weakling. He possesses short span of life. he sleep little: his voice bears one of more of these qualities- it is obstructed, interrupted, unsteady or harsh. He is an atheists, gluttons, pleasure seeking. He adores music, humor, hunting or gambling.(ii)

Pitta prakrit

Pitta prakrti is endowed with moderate strength, moderate span of life, moderate spiritual and materialistic knowledge, wealth and the accessories of life. (i)

Pitta prakriti person is of moderate strength and life span. (ii)

Persons of pitta prakrti are medium life span, medium strength, highly learned, afraid of comfort and resemble animals like the tiger, bear, ape, cat and yaksha. (ii)

Kapha prakriti

Kapha prakrti persons is endowed with the excellence of strength, wealth, knowledge, energy, peace. (i)

OBSERVATION

	Male			Female		
	n	Am	sd	N	Am	Sd
kp	13	51	15	12	17	8
pk	7	39	15	8	13	5
vk	1	36	0	1	12	0
kv	2	49	14	0	0	0
pv	2	42	7	2	12	2
vp	5	37	18	7	12	4
	30	253.6363	69.45111	30		

kp- Kapha Pradhan pitta prakruti.

kv- Kapha Pradhan vata prakruti.

pk – pitta Pradhan kapha prakuti.

pv – pitta Pradhan vata prakruti.

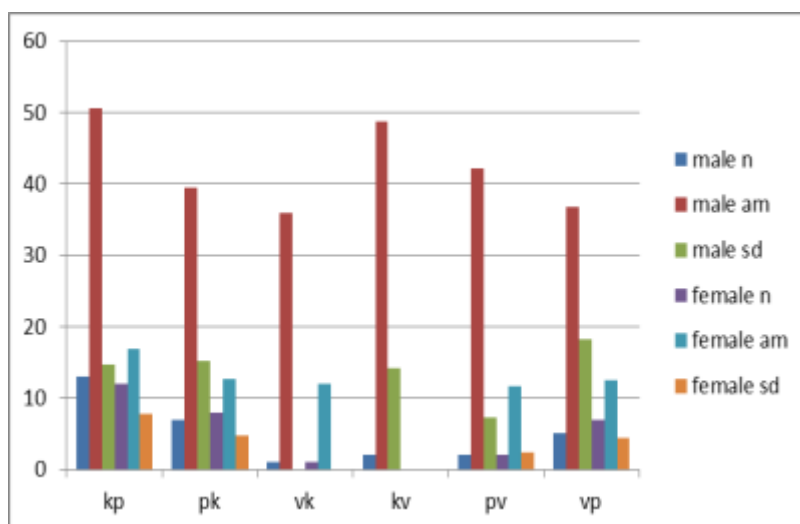
vk – vata Pradhan kapha prakruti

vp – vata Pradhan pitta prakruti.

am- average mean.

sd- standard deviation.

n- no. of individual.



DISCUSSION

On the basis of observation, collected data and statistical analysis, we can conclude that

1. Kapha pradhan prakuti people shows high dyanamometer reading compare to pitta Pradhan and vata pradhan prakuti people.
2. Pitta pradhan prakuti individuals shows higher dyanamometer reading than vata pradhan prakuti.
3. Vata pradhan prakuti individuals shows lower dyanamometer reading.
4. According to gender male individuals shows higher dyanamometer reading.

CONCLUSION

On the basis of above observation and discussion grip meter test can be used to detect Bala and ultimately type of Prakruti of an individuals.

One of deciding factor for type of prakruti.

Futher study with larger sample size may define ranges of dyanomometer reading for different types of prakruti.

SUMMARY

Male shows higher muscle strength (bala) than female.

Kapha Pradhan prakruti shows high muscle strength that means uttam bala.

Vata pradhan prakruti shows lower muscle strength that means heen bala.

Pitta Pradhan prakruti shows ni middle muscle strength that means madhyam bala.

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