

## Observational study of Sara - Asara Parikshana - specially "Majja Sara - Parikshana"

### Research Article

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### Abstract

In *Charaka Samhita* 10 assessment criteria are described to judge the strength and immunity of a diseased person which are called as 'Dashavidha Pariksha'. Sara Lakshana of all seven dhatus along with Satva sara are described under it. This study mainly focussed to screen and assess Majja sara Lakshana. Majja is 6<sup>th</sup> dhatu among 7 dhatus by order. Total 17 characteristics were compiled mainly from Brihatrayi. In this study population of 100 individuals were screened for Sara parikshana and also for 'Majja sara' based on the results of basic screening of Sara Parikshana. The participants who were found 'Majja sara' by even minimum one characteristic were further evaluated by marking method on basis of the exclusiveness of the present characteristics. The results of this were analysed further to get clear view about grade ( Uttama, Madhyama, Alpa, Asara ) of the Sarata depending upon the exclusiveness of the characteristics.

Majja Dhatu by order is 6<sup>th</sup> dhatu, is called 'gambhir' (deeper) dhatu. That might be the reason, Sarata of this dhatu has very rare occurrence. In this study 100 participants were screened for general Sara Parikshana. Among them only 12 individuals were found having Madhyam Majja sara lakshana. Remaining 88 fell in category of Alpa Majja sara individuals. Madhyam sara individuals were showing very high occurrence of exclusive Majja sara lakshana (above 80%). So the quality of their Majjasarata is definitely superior.

**Keywords :** Sarata, Majjasarata, Exclusive characteristics of Majja sarata, Occurrence of Majja sarata, Anthropometric measurements.

### Introduction

The main aim of *Ayurved* is to maintain health and to get rid of any diseased condition (1). To achieve this aim one has to understand the basic formative elements of human body i.e. *Dosha, Dhatu* and *Mala* (2).

Human body is microcosm which is a representation of macrocosm. *Panchamahabhutas* are the basic formative elements of living human body (3). Under the assessment criteria in a patient, 10 different criteria are described in *Charak Samhita* (4). *Dhatu sara Parikshana* or Assessment of *Dhatu sarata* is one of them.

*Sarata* of any *Dhatu* is nothing but the purest form or part of that *Dhatu* (5). It is the essence of best virtues of that *Dhatu*. For examination of patient *Dhatu sara parikshana* is included in *Dashavidh Pariksha* (10 assessment criteria) in *Charak Samhita*. All these assessment criteria help us to assess the *Bala* (6) i.e. strength of the patient or the immune power of that individual to fight against the disease. Strength or immunity of an individual should not be correlated with the body volume, is the main concept, upon which *Samhitakar* wants to focus. To elaborate this

concept they have given an example of an ant, who can lift up the weight, manifold of its own weight, which is applicable in humans also. Even a person of medium or lean built can do the tough jobs which are apparently not expected from him. Therefore to assess the inner strength of a person *Sara Pariksha* (assessment of *Dhatu saratva*) is recommended by *Acharya Charak* in *Vimaansthana* under *Dashavidha Pariksha* (10 criteria of assessments).

### Selection of subject :

In *Charak Samhita*, "Sara Parikshana" is described in 3<sup>rd</sup> section *Vimaansthana* 8<sup>th</sup> chapter (7) where as in *Sushrut Samhita* it has been described in 1<sup>st</sup> section *Sutrasthana* 35<sup>th</sup> chapter (8). Incomplete description is available in *Kashyapa Samhita* also (9).

In all *Samhitas* description of *Sarata* concept is in broad sense, one has to unfold their hidden meanings. In *Samhitas* no objective parameters are described while describing the concept, so establishing new parameters is the prime aim of the study.

*Sarata* or the excellent qualities of the tissues of the body are highly influenced by genetic factors. Which, one inherits from father and mother. It is possible to enhance the *Sarata* or excellence of *Dhatu* in foetus right from intrauterine life, prior to the birth or even prior to the conception. Any individual having poor qualities in *Dhatu* by birth can improve them by following proper diet regimen and medication.

*Sarata Parikshana* is recommended in pre marriage counselling for having physically and mentally better progeny, provided the compatibility of the

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partners is assessed before marriage. *Sarata* of both partners could be improved by improving their diet and advising diet supplements. *Sarata* or the qualities of *Dhatu* in particular of foetus could be improved by improving mother's diet and giving *Rasayana Chikitsa*.

In prophylactic period after any long term disease *Sara Parikshana* may help in rebuilding the body strength. By following recommended diet and specific *Rasayana Chikitsa* for specific *Dhatu*, one can regain the immunity sooner. *Sara Parikshana* gives clear vision about the individual's exclusive physical and mental abilities. This enables the physician to provide vocational counselling to that individual considering his interest of work and also his own mental, physical abilities to cope up with the demands of work pattern. *Majja* is a deeper (*gambhir*) *dhatu*. It is associated with higher mental faculties and abilities (10) so to observe the occurrence of *Majja Sarata* in general population is also the aim of the study.

**Aim :**

To observe occurrence of *Majja Sarata* in common population.

**Objectives :**

- 1) To elaborate the meaning of concept of *Sara*
- 2) To grade the characters described under *Majja sarata* in all important treatises, depending upon their exclusiveness
- 3) To objectivise the characters mentioned in *Majja sarata*

**Materials & Methods :**

**1.Literature search:**

*Brihatrayi, Laghutrayi*, modern texts were searched wherever necessary.

Taking help of all the important treatises proforma for *Dhatu Sara Parikshana* was designed. According to that proforma total 17 characters were found in *Majjasarata*(11) among which 8 were exclusively in *Majjasarata*, 5 were common in *Majja dhatu* and one more *Dhatu* and 4 were found common in more than two *Dhatu*.

Based on these findings classification and evaluation was done of all these 17 characters. In the first classification of 8 characteristics which were found exclusively in *Majjasarata* were given 4 points each so total of all 8 points in this group was 32 points.

In second classification of characteristics, being present in *Majja* and one more *Dhatu* were given 2 points each so total points of this group of characteristic was 10.

In third classification of characteristics present in more than two *Dhatu*s along with *Majja Dhatu* were given 1 point each so total of this group of characters was 4.

Thus the sum total of all points in three groups was 46 points.

**Table 1**

Characteristics only in <i>Majja Sarata</i> (carries 4 points each)	Characteristics common in <i>Majja</i> & one more <i>Dhatu</i> (carries 2 points each)	Characteristics common in more than two <i>Dhatu</i> s along with <i>Majja Dhatu</i> (carries 1 point each)
1. <i>Mrudwang</i>	1. <i>Gambhirsvara</i>	1. <i>Balwant</i>
2. <i>Sthulasandhi</i>	2. <i>Saubhagyopapanna</i>	2. <i>Snigdhavarna</i>
3. <i>Deerghasandhi</i>	3. <i>Deerghayushya</i>	3. <i>Snigdhaswar</i>
4. <i>Vrittasandhi</i>	4. <i>Apatya bhaj</i>	4. <i>Vitta bhaj</i>
5. <i>Mahanetra</i>	5. <i>Sanman bhaj</i>	
6. <i>Shruta bhaj</i>		
7. <i>Vidnyanbhaj</i>		
8. <i>Akrusham</i>		
<b>Total of all points - 32</b>	<b>Total of all points - 10</b>	<b>Total of all points - 4</b>

**2.Sample size :** 100 subjects of either sexes were randomly selected for the study.

**3.Type of study :** Prospective observational study.

**4.Study site :** Residential area at Mulund east.

**5.Criteria for selection of subjects :**

**Inclusion criteria –**

- a. Age : in between 20 - 40 as this period of age is considered as the age of complete growth of *Dhatu*s by *Acharya Charak* and *Sushrut*(12).
- b. Sex : of either sexes
- c. Community : Indian
- d. Socio economic class : Higher middle class
- e. According to diet : mix diet (veg & non veg)

**Exclusion criteria :**

- a. Below 20 & above 40 years of age
- b. Pregnant ladies
- c. Any major illness

**6. Plan of study :**

- a. Two proformas were created one for general *Sara Parikshana* of all *Dhatu*s and the other for observation of *Majjasarata*
- b. Prior written informed consent was taken of all included participants.

**7. Criteria for Assessment :**

For the assessment of *Dhatu Sarata* a specially designed proforma was used. This proforma was consisting all the characters of all the *dhatu*s. By this proforma general *Sara Parikshana* was done of all participants. After assessing by this proforma for general *Dhatu sarata*, all participants were assessed especially for *Majja sarata* in whom it was present by minimum or maximum limit.

Participants having minimum 1 character and maximum all (17) characters of *Majjasarata* were considered as *Majjasara* individual.

This is a prospective observational study for which 100 healthy individuals of either sexes were taken between the age group of 20 to 40, as this age span is considered as the age of complete growth of *Dhatu*s(12).

For *Sara Parikshana* a standard proforma was

used to see whether the individual is having *Majjasara Lakshana* or not.

If participant were found having even minimum 1 character was considered as *Majjasara*. If the participants were found *sara* in other *Dhatus* than *Majja Dhatu* also were mentioned accordingly in proforma.

Assessment of *Sara Lakshana* in proforma was done by *Darshana* (by observation), *Sparshana* (by touch) and *Prashna* (by interrogation)(13). Various instruments and objects like Measuring tape, Vernier calliper, Til oil etc. were used to assess the characters described in *Samhitas*. Memory test and IQ test were done with the modern methods adopted from modern tests in Psychiatry as *Majjasarata* is associated with higher mental, intellectual abilities.

In *Sarata Parikshana* characteristics like *Sthulasandhi* (broad joints), *Deerghasandhi* (elongated joints), *Vruttsasandhi* (joints which are round in shape) were assessed in knee joint with the help of measuring tape as it is a major weight bearing joint of the body.

Measurements of *Lalat* (forehead), *Hanu* (chin), *Greeva* (neck), *Skandh*(shoulders),, *Gulfa*(ankle joint), *Shir* (head circumference), *Aratni* (length between tip of elbow joint and tip of extended middle finger) were measured by measuring tape.

*Danta* (teeth), *netra* (ocular bony orbit), *Parva* (carpal,metacarpal joints) were measured by using Vernier calliper.

*Snigdghata* (unctuousness) of body was assessed by *Til* drop test for which drop of *til* oil was dropped on outer surface of palm on marked area by pen. Absorption time of oil was observed. Depending upon *Snigdghata* in body, oil will take less or more time to get absorbed.

Many characteristic in *Sara Parikshana* were done by *Darshana Pariksha* ( by observation ) e.g. skin texture,lustre, complexion, body hair distribution in *Rasa Sara*, coppery red complexion, lustre in *Rakta Sara*, tone of the body, built and musculature of the body in *Mansa Sara*, lustre and unctuousness of skin,hair,teeth,voice in *Meda Sara*, prominent eyes, lustre in eyes in *Majja Sara*, milky white teeth, eyes lustre of skin, melodious voice in *Shukra Sara*.

Some characteristics in *Sara parikshana* are observed by *Prashna* or interrogation e.g. strength of body, tolerance to hunger, heat, physical hardships ; recognition of work in life,libido,any diseases etc.

Skin,hair - softness, texture, warmth ; firmness, compactness of bones and muscles etc are examined by *Sparshana* i.e. by touch.

Characteristic of *Sarata* like *Shrut bhaj*,*Vidnyan bhaj*, *Sanman bhaj*, *Saubhagyopapanna* were tested according to their academic status and the achievements in life

Following are the anthropometrical measurements done either by measuring tape or by Vernier calliper.

**Table 2.**

Sr.No.	Body part	Anatomical markings for Measurement of bodyparts	Average measurement
1	<i>Lalat</i>	Distance between hairline and upper edge of eyebrow	3.4 cms
2	<i>Danta</i>	Length and width of upper incisors	A-1.24 cms V- 1.10 cms
3	<i>Netra</i>	Length and width of bony orbit	A-3.46 cms V- 3.34 cms
4	<i>Sandhi</i>	Length and width of knee joint –length between upper and lower border of patella and width is distance between lateral and medial condyles	C- 34.22 cms A- 13.32 cms V-14.43 cms
5	<i>Sharir</i>	<i>Aayam</i> –height between highest point on head and planter surface of foot in standing position <i>Vistaar</i> - If hands are spread at shoulder level in erect position length between the two middle fingers of hands	A- 160.64 cms V- 163.08 cms
6	<i>Hanu</i>	<i>Gher</i> (circumference)-circumference of head at tempero- mandibular joint <i>Vistar</i> (width) – circumference of jaw at mandibular angle	A- 26.90 cms V- 25.79 cms
7	<i>Greeva</i>	Circumference of neck at midpoint	32.56 cms
8	<i>Skandha</i>	Distance between the base of neck and acromioclavicular joint	13.93 cms
9	<i>Parva</i>	Width between metacarpo phalangeal joints of first 4 fingers of palm except thumb	5.67 cms
10	<i>Aratni</i>	Length between Olecranon tip and tip of stretched middle finger of fore arm	24.27 cms
11	<i>Gulfa</i>	Circumference of ankle joint at the tips of lateral and medial malleolus	23.92 cms
12	<i>Jatru</i>	Length of sternum	19.27 cms
13	<i>Parshni</i>	Circumference of heel	24.45 cms
14	<i>Shir</i>	Circumference of skull at temporal level	52.95 cms
15	<i>Shankha</i>	Distance between lateral edge of orbit and tempero-mandibular joint	1.17 cms
16	<i>Ganda</i>	Distance between the maxillary prominences	2.20 cms

[Abbreviations A- *Aayam* ie.length, V- *Vistaar* ie.width & C-Circumference]

These are the average anthropometrical measurements. Individuals having 2+ measurement was assumed as having big measurements or *Maha* and 2- was interpreted small or *Alpa*.

As there are no standard known measurements according to *Ayurvediya* surface anatomical markings, average of each measurement was taken for comparison.

**Observation**

In study population, among 100 individuals 56 were male and 44 were females. Participants of the study were found predominantly *Rasa, Rakta, Mansa Sara* and rarely *Asthi* and *Shukra sara* in combination with other *sara*.

No individual was found exclusively *Majjasara* but range of characteristics from *Majjasarata* were found in almost all individuals.

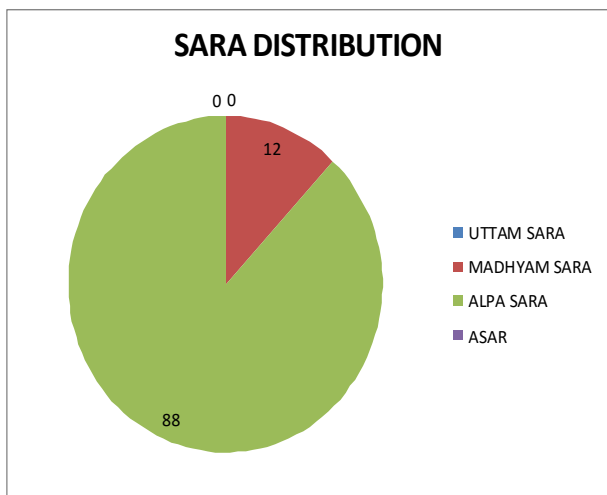
According to the occurrence of *Majjasarata* characteristics points were given to them depending upon the exclusiveness of the characteristic, as described in methodology. Percentages of the total points were obtained in each individual. According to following range of percentage *Uttam, Madham,Alpa* and *Asarata* was decided (14).

**Table 3.**

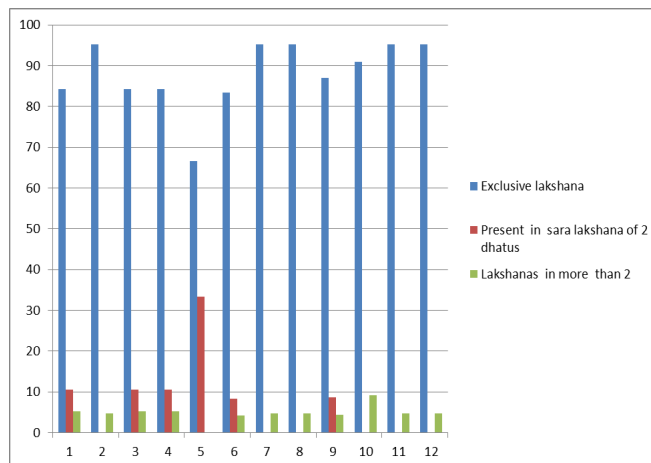
<i>Uttam Sarata</i>	Points above 70 %
<i>Madhyama Sarata</i>	Points between 40 -70 %
<i>Alpa Sarata</i>	Points below 40 %
<i>Asarata</i>	0 points / no characteristics atall

Among all 100 participants nobody was *Uttamsara* (*Majjasarata* percentage above 70%), 11 individuals were *Madhyamsara* (*Majjasarata* percentage between 40-70%)and 89 individuals were found *Alpasara* (*Majjasarata* percentage below 40%) according to accepted range.

**Fig.1 Majja Sara Distribution of 100 participants**



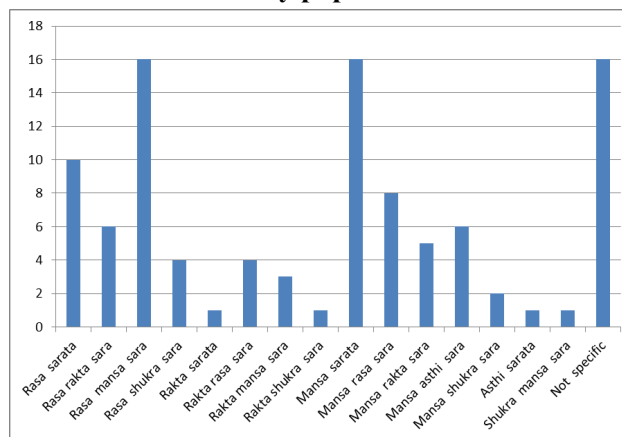
**Fig.2 Combination of Sara characteristics of "12" Madhyam Majjasara individuals based on their exclusiveness**



**Table 4. Occurrence of Sarata of Dhatus in study population.**

Sr No	Sarata observed	No. of Individuals
1	Rasa sarata	10
2	Rasa rakta sara	6
3	Rasa mansa sara	16
4	Rasa shukra sara	4
5	Rakta sarata	1
6	Rakta rasa sara	4
7	Rakta mansa sara	3
8	Rakta shukra sara	1
9	Mansa sarata	16
10	Mansa rasa sara	8
11	Mansa rakta sara	5
12	Mansa asthi sara	6
13	Mansa shukra sara	2
14	Asthi sarata	1
15	Shukra mansa sara	1
16	Not specific	16
<b>Total No.</b>		<b>100</b>

**Fig 3. Percentage of occurrence of Dhatu sarata in study population.**



As said earlier nobody from study population was very clearly *Majja Sara* but at the same time all participants showed more or less *Majja Sara* characters. These *Majjasara* characters from all the participants were assessed giving them points or marks based on their exclusiveness.

From this table it's showing that in population of 100 individuals majority were of *Rasa Mansa Sara* or *Mansa Sara* (16 each), *Rasa Sarata* (10), *Mansa Rasa Sarata* (8). All other types of *Sara* are seldomly observed.

### Discussion :

Health is not just merely disease free condition of the body but one also need to have healthy positive mind with it, which is collectively called Positive health. To achieve this positive health *Saraparikshana* is useful, because it gives you perfect understanding of strength or immunological status of the seven *Dhatus* in the body, and can be improved if lacking.

As mentioned earlier *Dhatusarata* is described under 10 Assessment Criteria i.e. *Dashavidha Pariksha* of a patient. Though it's an assessment of *Rugna* can also be used to assess a healthy individual as it is a parameter to assess strength of a person. Strength in terms of immunity of any *Dhatu* is very necessary to know for a physician as if it is lacking, can be boosted giving proper diet regimen and *Rasayan Chikitsa*. It is equally important to know it (*Dhatusarata*) to maintain the health and to correct if short.

This study is an attempt to objectivise the criteria of *Majjasarata* described in different treatises is mainly through different objective tests (such as *Snigdghata* test with til oil, psychological test for IQ memory) and also anthropometric measurements of the study individuals. These are very basic tests used in this study as we could not find any established tests for the same. If these tests would be improvised to higher level results would be better.

Some anthropometric measurements as *Mahanetra* and *Sthula -Deergha -Vritta Sandhi* which are signature characteristics of *Majjasarata* needs a really larger population to set the standards, as it's very hard to decide them with such a small study population.

All the participants were from higher socio economic background and highly qualified. Still the percentage of *Majjasarata* is very low than expected. *Majja dhatu* and *Majja sarata* is associated with high intellectual quotient and high mental abilities. The participants though having good academic background, it's not reflecting in the results. *Majja Sarata* might be expecting very high intellectual scores or high mental skills. The tests used to objectivise this intellectual quotient were very basic. Higher IQ tests might improve the assessment of IQ of the participants.

The group of participants included in the study was a mix group of individuals comprising from a house wife to self-made intellectuals, this reason might have affected the quality of the results. Study in specific class of individuals eg. General Practicing Doctors, businessmen, surgeons, singers may give us different insights in the subject of *Majja Sarata*.

Study population was limited to 100 individuals

in this study, further in larger population same study could be done to get more accurate results and more occurrence of *Majja Sarata*.

*Sarata* of any *Dhatu* is assessed in two ways, quantitatively and qualitatively. All objective parameters assessing mainly physical characteristics of the person i.e. *Sthulata, Deerghata, Vrittata* of *Sandhi* or *Mahanetra* fall in quantitative parameters whereas *Vidnyanbhajata, Shrutbhajata* are more qualitative in nature though attempt has been done to bring objectivity in them. In *Majjasarata* along with quantitative characteristics much emphasis has to be given to qualitative characteristics as they are quite distinguishing characteristics of *Majjasara*. More accurate and elaborative parameters should be applied to objectivise *Vidnyanbhajata* and *Shrutbhajata*.

*Majjasarata* has very exclusive characteristics, especially associated with high IQ level or having very unique abilities of mental and intellectual faculties which can be called as *Dhee, Pradnya, Medha* in *Ayurvediya* terminology. Though this *Dhatu* is being associated with higher intellectual abilities, physical characteristics (like *Mrudwang, Sthulasandhi, Deerghasandhi, Vrittasandhi, Mahanetra, Akrusham*) are major distinguishing characteristics of *Majjasarata*. More accurate anthropometric standards may give us proper direction to the interpretation of *Majjasarata*.

More extensive and accurate anthropometric parameters and IQ tests can throw more light on the meanings of characteristics described under *Majjasarata* and also will help to enhance it's applicability.

### Conclusion :

*Majja Dhatu* by order is 6<sup>th</sup> *dhatu*, is called '*gambhir*' (deeper) *dhatu*. That might be the reason, *Sarata* of this *Dhatu* has very rare occurrence. In this study 100 participants were screened for general *Sara Parikshana*. Among them only 12 individuals were found having *Madhyam Majja Sara Lakshana*. Remaining 88 fell in category of *Alpa Majja Sara* individuals.

If graph in Fig 2. is analysed having the distribution of *Majja Sara lakshana* according to their exclusiveness (in group of *Madhyam Sara* individuals), one can observe that most of the participants in this group show above 80% of occurrence of exclusive characteristics. It means they are *Madhyam Sara* individuals showing very high occurrence of exclusive *Majja Sara lakshana*. So the quality of their *Majjasarata* is definitely superior.

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