

AN OBSERVATIONAL STUDY ON ASSESSMENT OF “INTELLIGENCE QUOTIENT” IN DIFFERENT PRAKRUTHI INDIVIDUALS

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<https://doi.org/10.46607/iamj0109062021>

(Published Online: June 2021)

Open Access

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Article Received: 04/05/2021 - Peer Reviewed: 02/06/2021 - Accepted for Publication: 04/06/2021



ABSTRACT

Prakruthi is the innate constitution of an individual based on *Dosha* predominance determined at the time of conception which cannot be changed from birth till the death. Siblings of the same parents are not identical with each other in their physical strength, intellectual development, behaviour and reaction to various conditions of environment. Intelligence is a property of mind that is related to abilities, such as the capacity to reason, to plan, to solve problems, to think abstractly, to comprehend ideas, to use language, and to learn.

Keywords: *Prakruthi*, IQ

INTRODUCTION

According to *Ayurveda* definition of *Swastha* is an equilibrium state of *Dosha*, *Agni*, *Dhathu*, *Mala* and normal functioning of *Athma*, *Mana*, and *Indriy*¹. Classifying human beings according to *Prakruthi* is one of the unique features of *Ayurveda*². *Ayurvedic* classics have elaborately narrated the different *Prakruthis* and

their importance. Basic concepts have given equal emphasis to both Physical and Psychological status of an individuals. The factors like *Dhi*, *Drithi*, *Smrithi* all together contribute the modern concept of Intelligence. Siblings of the same parents are not identical with each other in their physical strength, intellectual development, behaviour and reaction to various conditions of

environment. There are various methods are in practice to evaluate *Prakruthi* of an individual. IQ is a score derived from one of the several different standardized tests to assess intelligence³. IQ is an important factor in success, dedication, motivation, confidence and social skills. IQ test is useful in psychological, sociological and educational research also.

Objective of the study

To assess the IQ in different Prakruthi.
To assess the possible relationship between Prakruthi and IQ.

Materials and Methods

Source of data:

150 Individuals from Alva’s college and in and around Alva’s campus with the age group of 20 to 22 years of age, under educational status, either sex was selected.

Collection of data:

Apparently healthy individuals were selected randomly.
Assesment of *Prakruthi* was done using standard proforma along with survey questionnaire. Individuals

are made in to three groups A, B, C according to their *Pradhana Prakruthi*.

Group A- 50 volunteers who have *Vata Pradhana Prakruthi* were selected.

Group B -50 volunteers who have *Pitta Pradhana Prakruthi* were selected

Group C -50 volunteers who have *Kapha Pradhana Prakruthi* were selected.

Inclusion criteria:

Apparently healthy individuals, irrespective of sex, religion, having the age group of 20-22 years old.

Exclusion criteria:

- Person with cognitive disorder
- Acute and chronic systemic diseases
- Mentally retarded
- Psychological disorders.

Assessment Criteria:

Prakruthi of individual was assessed as per the self- assessment questionnaire designed by Dr. Kishor Patwardhan et.al⁴. IQ was assessed with the help of Wechsler Adult Intelligence scale⁵.

Observation

Distribution according to age

Table 1: Distribution according to age

AGE	NO. OF INDIVIDUALS	%
20	48	32
21	53	35.33
22	49	32.66
TOTAL	150	100

Majority of subject were under the age group of 21 years (35.33%) followed by 22 years (32.66%) and 32% individuals were under 20 years of age group.

Distribution according to sex

Table 2: Distribution according to sex

SEX	NO. OF INDIVIDUALS	%
MALE	69	46
FEMALE	81	54
TOTAL	150	100

Out of 150 subjects maximum numbers were female’s i.e. 54%, followed by males 46%.

Distribution according to religion

Table 3: Distribution according to religion

RELIGION	NO. OF INDIVIDUALS	%
HINDU	109	72.66
CHRISTIAN	17	11.33
MUSLIM	24	16
TOTAL	150	100

Maximum subjects were Hindu religion i.e. 72.66 %, followed by Muslims 16 % and other religion like Christians constitute 11.33 %.

Distribution according to socio economic status

Table 4: Distribution according to socio economic status

S-E-S	NO. OF INDIVIDUALS	%
MCL	118	78.66
HCL	32	21.33
TOTAL	150	100

Distribution according to diet

Table 5: Distribution according to diet

DIET	NO. OF INDIVIDUALS	%
VEG	52	34.66
MIXED	98	65.33
TOTAL	150	100

Distribution According to Exercise

Table 6: Distribution according to exercise

EXERCISE	NO. OF INDIVIDUALS	%
YES	63	42
NO	87	58
TOTAL	150	100

Distribution According to Siblings

Table 7: Distribution according to siblings

ORD.OF SIBLINGS	NO. OF INDIVIDUALS	%
FIRST	72	48
SECOND	52	34.66
THIRD	23	15.33
TOTAL	150	100

Distribution according to sleep

Table 8: Distribution according to sleep

SLEEP	NO. OF INDIVIDUALS	%
SOUND	130	86%
DISTURBED	20	13.33%
TOTAL	150	

Distribution according to habit

Table 9: Distribution according to habit

HABIT	NO.OF INDIVIDUALS	%
YES	26	17.33
NO	124	82.66
TOTAL	150	100

Distribution according to prakruthi

Table 10: Distribution according to prakruthi

PRAKRUTHI	NO. OF INDIVIDUALS	%
VATA	50	33.33
PITTA	50	33.33
KAPHA	50	33.33
TOTAL	150	100

Distribution According To IQ

Distribution According to Prakruthi In Relation To Various Parameters

Table 11: Distribution according to IQ

IQ	NO. OF INDIVIDUALS	%
80-100	21	14
101-110	59	39.33
111-120	50	33.33
121-130	20	13.33
TOTAL	150	100

Distribution of prakruthi in relation to sex

Table 12: Distribution of prakruthi in relation to sex

SEX	VATA	%	PITTA	%	KAPHA	%
MALE	15	10	28	18.66	26	17.33
FEMALE	35	23.33	22	14.66	24	16
TOTAL	50		50		50	

In overall stud, male subjects having vata prakruthi are found 10 %, pitta 18.66 %, kapha 17.33 % while female subjects with vata prakruthi 23.33%, pitta 14,66 %, kapha 16 %.

Distribution of prakruthi in relation to diet

Table 13: Distribution of prakruthi in relation to diet

DIET	VATA	%	PITTA	%	KAPHA	%
VEG	5	3.33	19	12.66	28	18.66
MIXED	45	30	31	20.66	22	14.66
TOTAL	50		50		50	

In overall study, the subjects taking vegetarian diet are found having vata prakruthi 3.33 %, pitta 12.66 %, kapha 18.66 % while subjects taking mixed diet are found vata prakruthi 30 %, pitta 20.66 %, kapha 14.66 %

Distribution of prakruthi in relation to order of siblings

Table 14: Distribution of prakruthi in relation to siblings

ORD.OF SIBLINGS	VATA	%	PITTA	%	KAPHA	%
FIRST	23	15.33	26	17.33	23	15.33
SECOND	21	14	17	11.33	17	11.33
THIRD	6	4	7	4.66	10	6.66
TOTAL	50		50		50	

In overall study, the subjects of first order sibling have vata prakruthi 23 %, pitta 17.33 %, kapha 15.33%, while second order sibling have vata prakruthi 14 %, pitta 11.33 %, kapha 11.33 %, and third order sibling have vata prakruthi 4 %, pitta 4.66 %, kapha 6.66 %.

Distribution of prakruthi in relation to sleep

Table 15: Distribution of prakruthi in relation to sleep

SLEEP	VATA	%	PITTA	%	KAPHA	%
SOUND	38	25.33%	44	29%	48	32%
DISTURBED	12	8%	6	4%	2	1.33%
TOTAL	50		50		50	

In overall study, the subjects were getting sound sleep are found having vata prakruthi 25.33%, pitta 29%, kapha 32%, while subjects having disturbed sleep are found vata prakruthi 8%, pitta 4%, kapha 1.33%.

Distribution of prakruthi in relation to exercise

Table 16: Distribution of prakruthi in relation to exercise

EXERCISE	VATA	%	PITTA	%	KAPHA	%
YES	21	14	22	14.66	20	13.33
NO	29	19.33	28	18.66	30	20
TOTAL	50		50		50	

In overall study, the subject has doing exercise are found vata prakruthi 14 %, pitta 14.66 %, kapha a 13.33 %, while subject were not doing exercise are found vata prakruthi 19.33 %, pitta 18.66 %, kapha 20 %.

Distribution of prakruthi in relation to habit

Table 17: Distribution of prakruthi in relation to habit

HABIT	VATA	%	PITTA	%	KAPHA	%
YES	4	2.66	15	10	7	4.66
NO	46	30.66	35	23.33	43	28.66
TOTAL	50		50		50	

In overall study, the subject with habit have vatha prakruthi 2.66 %, pitta 10 %, kapha 4.66 % while without habit found vata prakruthi 30.66 %, pitta prakruthi 23.33 %, kapha prakruthi 28.66 %.

Distribution of prakruthi inrelation to bmi

Table 18: Distribution of prakruthi in relation to BMI

BMI	VATA	%	PITTA	%	KAPHA	%
LESS THAN 18.5	22	14.66	5	3.33	2	1.33
18.5-24.9	25	16.66	35	23.33	23	15.33
25-29.9	3	2	9	6	24	16
ABOVE 30	0	0	1	0.66	1	0.66
TOTAL	50		50		50	

Among vata prakruthi subjects having BMI (18.5-24.9) 16.66 %, pitta 23.33 %, kapha 15.33 %, BMI (>18.5) vata 14.66 %, pitta 3.33 %, kapha 1.33 %. BMI (25-29.9) vata 2 %, pitta 0.66 %, kapha 0.66 %, BMI (<30) vata 0 %, pitta 0.66 %, kapha 0.66 %.

Statistical analysis

Data were collected in an excel sheet and analyzed by using Sigma stat software.

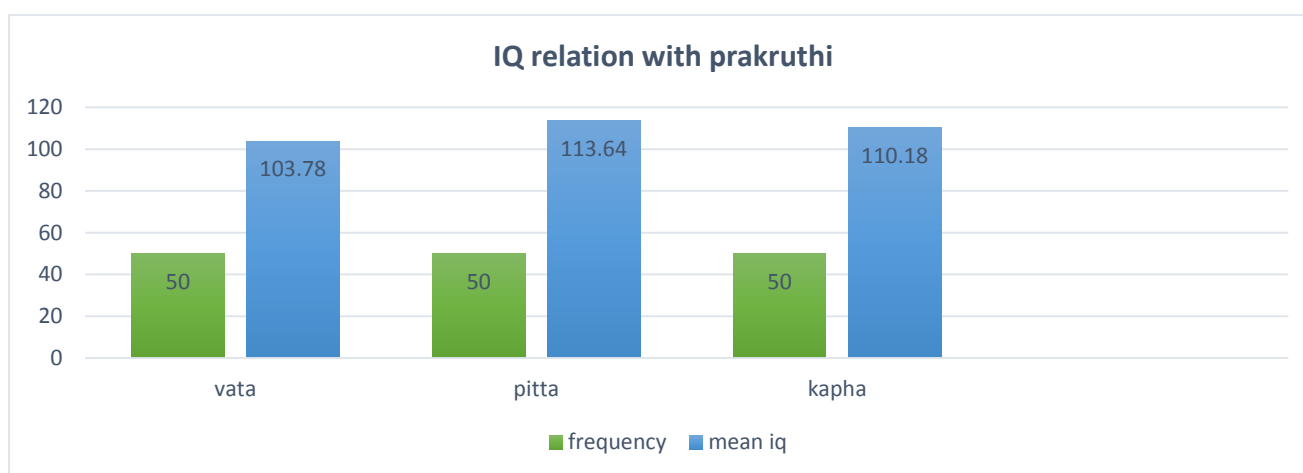
RESULTS

(a) Comparison of IQ score in Prakruthi (Assessment by One-way analysis of Variance)

Table 19: Comparison of IQ score in Prakruthi

PRAKRUTHI	freq(N)	MEAN IQ	S.D	S.E
VATA	50	103.78	10.51	1.48
PITTA	50	113.64	9.01	1.27
KAPHA	50	110.18	6.92	0.97
F=15.657 d.f.=2 P=<0.001				

Vata prakruthi subjects were found to have lowest mean IQ-103.78, pitta prakruthi subjects were found to have highest mean IQ-113.64, whereas kapha prakruthi subjects were found to have mean IQ-110.18. The difference in between the groups is statistically significant (F=15.657, P = <0.001).



(b) Comparison of IQ scores In order of siblings. (Assessment by Kruskal Wallis One-way Analysis)

Table 20: Comparison of IQ score in order of siblings

ORD.OF SIBLINGS	Freq(N)	MEAN IQ	S.D	S.E
FIRST	72	111	9.94	1.17
SECOND	55	106.69	10.31	1.39
THIRD	23	109.56	6.41	1.33
F=3.133 d.f=2 p=< 0.001				

Mean IQ for first order sibling is 111, while that of second order sibling is 106.65 and third order sibling is 109.56. The difference in between the groups is statistically significant (F=3.133, P = <0.001)

(i) Comparison of IQ scores in Sleep (Assessment by Mann-Whitney Rank Sum Test)

Table 21: Comparison of IQ score in sleep

SLEEP	Freq(N)	MEAN IQ	MEDIAN IQ	25%	75%
DISTURBED	20	95.2	94	89.5	102
SOUND	230	111.35	112	106	116
T=390.500 P= <0.001					

The mean IQ for having sound sleep subject was 111.35, while those having disturbed sleep were 95.2. There is difference in between the groups is statistically significant. (P= <0.001)

(g) Comparison of IQ scores in exercise (Assessment by Mann-Whitney Rank Sum Test)

Table 22: Comparison of IQ score in exercise

EXERCISE	Freq(N)	MEAN IQ	MEDIAN IQ	25%	75%
YES	63	111.159	108	104	121
NO	87	107.784	108	103	115.75
T=5153 P= 0.131					

The subjects with doing exercise were having mean IQ of 111.159, while with higher class status were having mean IQ of 109. The difference in mean between 2 groups is not great enough exclude the possibility that difference is due to random variability. There is not statistically significant difference (p=0.131)

DISCUSSION

The concept of *Prakruthi* is unique one and unanimously accepted by all the *Acharyas* of our science. Considering the improbable significance of it in theoretical as well as clinical aspects it should be well understood, as it furnishes the base for existence of health or disease of a person. The most comprehensive definition of *prakruthi* is that favourable state of *Dosha* formed at the formation of *Garbha* due to self-excitatory cause and which runs from birth to death. In other

words, *prakruthi* is group of characters inherited prior to birth right at the time of conjunction of *Shukra* and *Shonita*, but non-afflictory to the individual himself just as a poisonous creature survives even born out of poison. Although the single cell structure undergoes division to form innumerable cells in the body, still leaves some dissimilarities in contour of the body, immunity, susceptibility, knowledge, intelligence etc. quantitatively as well as qualitative, The cause and effect of all these events are dealt in detail under genetics in modern whereas we have to learn forward to the concept of *Prakruthi* to explain the same. Overall, the constitution is the sum of the physique, physiological and psychological attributes of an individual. Though the contributions of them may vary, the unassailable influence of psychological attributes over the rest is enormous.

Discussion on prakruthi and IQ

Equal number of subjects in 3 groups, *Vata Pradhana* subject were present more IQ groups 101-110 as well as 80-100, *Kapha pradhana Prakruthi* subjects were clustered in IQ groups 111-120, comparatively more *Pitta Pradhana Prakruthi* subject were there in IQ groups 121-130. *Deha Prakruthi* when under observation has shown which influence on the mental factors. Hence that can be possibility of a definitive relation between IQ and *Prakruthi*. In this study results reveal that the IQ considering *Dhee, Dhriti, Smriti, Buddhi* etc. In *Ayurveda*, the concept of intelligence can be found spread under different heading – *Buddhi, Jnana, Prajna, Medha, Dhee, Dhriti* and *Smriti* etc. From this we can infer intelligence cannot be included under single terminology. But broadly we can say *Dhee, Dhriti, Smriti* are the three dimensions of *Buddhi*.

After thorough observation the results revealing that people having *Pitta pradhana Prakruthi* seems to have higher IQ. Hence here by stating the words of *Acharya* that people with of *pitta prakruthi* are said to be *Medhavi*,⁶ *Nipunamathi*,⁷ *Vaibhava, Pandita, and Sahasa Buddhi*,⁸ are the same *Lakshanas* which are seen in people with higher IQ in *Pitta Prakruthi*. By this stating that people with *Pitta Pradhana Prakruthi* are said to possess higher IQ than others.

Discussion on siblings

Mean IQ for first order sibling is 111, while that of second order sibling was 106.65. In 1874 Francis Galton offered several reasons; Primogeniture law⁹: first born sons would be more likely have the financial resources to continue their education. They also have the advantage of being “this means that they also undertake more responsibility than their younger siblings. The eldest siblings would get more attention and better nourishment in families with available financial resources. The resource dilution model:^{10, 11} this resource dilution model, proposed by Blake (1981) and elaborated by Downey (2001). Parental resources are finite, resource include money, personal attention and cultural object such as books. Additional siblings reduce the share of parental resources received by any one child.

Parental resources have an important effect on children's educational success. The difference in between the groups is statistically significant.

Discussion on sleep

Nidra according to *Acharya* is said to be effectively help in the formation of *Jnana*.¹² which is also a factor responsible for identifying IQ of a person. From the observation the results derived shows that volunteers who were having sound sleep had greater IQ value than people with disturbed sleep pattern. Here mean values of sound sleep-111.35 and disturbed sleep-95.2. This result is suggestive of opinion that proper sleep is a major contributing factor in formation of IQ.¹³

Discussion on exercise

In this study conducted 42% of subject were habituated to physical exercise those are the ones who have had higher IQ than the rest. It is said that when we exercise ‘growth factor’ are released, which influence the brain health and in turn effects the hippocampus, which govern the learning and memory.¹⁴

CONCLUSION

Prakruthi of a person cannot be changed from birth to death. The formations of *Prakruthi* are influenced by many factors even before the formation of *Garbha*. In *Ayurveda* the exact terminology for intelligence cannot be found, rather terms relating with the concept of intellect like *Dhi, Dhriti, Smriti, Buddhi, Medha* etc. For the development of IQ there are certain influential factors are there, like sleep, standard of living, resources etc. The results showed *Pitta Pradhana Prakruthi* to have more IQ than the rest of combinations of *Prakruthi*. Hence from this study a significant relation was seen, between *Prakruthi* and IQ. Hence stating H1 to be accepted.

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Source of Support: Nil

Conflict of Interest: None Declared

How to cite this URL: Arjun. N & Rajashekar K. N: An Observational Study On Assessment Of "Intelligence Quotient" In Dif-Ferent Prakruthi Individuals. *International Ayurvedic Medical Journal* {online} 2021 {cited June, 2021} Available from: http://www.iamj.in/posts/images/upload/1158_1166.