"AN OBSERVATIONAL STUDY OF QUALITY OF LIFE AMONG HEALTHY INDIVIDUALS OF VARIOUS PRAKRITI USING WHO-QOL [BREF] SCALE"

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✦ **ABSTRACT**

Prakriti is formed by proportion of five elementary elements i.e. *Panca-mahabhutas* which are mainly responsible for evolution of *Tridoshas* and their predominance. Such a human frame-work describes distinct physical, functional and psychological attributes of individuals which govern their organic body functioning and responses towards any external situation or stimuli. The current study is focused on determining association between Quality of life a person is leading and its body constitution. Outcome procured out of it will definitely elaborate effect of Prakriti on everyday life of an individual. Meanwhile, WHO defined Quality of life as individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. The assessment tool implemented for this study is validated *Prakriti* assessment performa and **WHO-QOL [BREF]** Scale. The study was conducted over 100 healthy subjects in age-group of 16-25 years with informed consent and educated with broad aspect of the study. Health is the essential foundation that supports an individual's growth, learning, personal well-being, social fulfillment, and economic production while preliminary concept of *Prakriti* is the foundation stone for many facts and principles based on health maintenance and disease management in Ayurvedic sciences. This concretes the ground to look out the effects, if any, of Prakriti on day to day life of a healthy individual. At the end of study, we are able to appreciate the association between Prakriti and QOL in apparently healthy individuals along with various facets improvising it.

KEYWORDS:

Prakriti, Quality of life, QOL, HRQOL, WHO-QOL [BREF], Disease-prevention, Health-promotion, personalized medicine.

INTRODUCTION:

The *Prakriti* once formed during union of *shukra* and *shonita* at the time of conception, can never be changed; if it changes at any point of time during the entire life, this indicates the end time of one's life (*mrityu-suchak lakshan*) i.e, feature of <u>Gata-ayu</u>. The concept of ideal personality in *Ayurveda* is not purely a psychological or spiritual approach, rather given equal stress to all the considerations of ideal personality by which a man can develop himself spiritually, physically, and mentally leading a model socio-ethical life. The concept of typologies as met within *Ayurveda* is very promising because multidimensional and multifactorial attitudes have been adopted while framing the different sub-categories of human personality.

The current study is focused on establishing association between *Prakriti* and Quality Of Life in healthy individuals. QOL is a gross multifaceted theory that generally includes independent investigation of both positive as well as negative phases of life in which health is most important among all the domains. *Deha- Prakriti* denotes the physical typology based on the principle of *Tri-dosha Siddhanta* of *Ayurveda*, which represents a definite biological process that takes place inside the body. This also explains the predisposition and susceptibility of human subjects with different *Prakriti* to various diseases. It will be interesting to study and find out the connections between the Prakriti and Quality of life among healthy individuals of a certain age group.

QUALITY OF LIFE

There are several approaches to define QOL that includes: approach based on human needs, subjective well-being, expectations and process based viewpoints. This can be described as:

1. A conscious cognitive judgment of satisfaction with one's life.[1]
2. An individual's perception of their position in life with respect to culture and value systems in which they thrive and in relation to their ambitions, expectations, concerns and standards.[2]
3. An overall general well-being that comprises objective descriptors and subjective evaluations of physical, social and emotional wellbeing altogether with the extent of personal development and purposeful activity, all scored by a personal set of values.[3]

– **ASSESSMENT OF QUALITY OF LIFE:-**

All the data was collected via self-report to increase accuracy, all individuals were informed that their responses would remain confidential.

WHO-QOL BREF is a 26 item questionnaire Performa based instrument that consists of four chief domains i.e., Physical health domain, Psychological health domain, Social relationships, and Environmental domain. Every entity of WHO-QOL [BREF] is scored on a response scale from 1 to 5, which initiates a five-point ordinal scale, where the domain of physical health comprises of 7 items, domain of psychological health comprises of 6 items, that of social relationships consists of 3 items and domain of environmental health comprises of 8 items. A little elaboration over these domains can be highlighted as:

o The <u>Physical health domain</u> includes items on mobility, daily activities, functional capacity, energy, pain, and sleep.

o The <u>Psychological health domain</u> measure's one self-vision, prevalence of negative thoughts, positive attitudes, self-esteem, mentality, learning ability, memory concentration, religion, and mental status.

o <u>Social Health Domains</u> cover one's relationships, social support, and sex life.

o The <u>Environmental health domain</u> encounters if there any issues related to financial sources, safety, health services, society, etc., physical surroundings in which that individual thrives, being opportunistic enough to acquire new skills and knowledge; participation in recreational activities, the general environment around [air, water, and soil] and transportation.

– **SCORING OF THE WHOQOL-BREF:**

The WHOQOL-BREF produced four domain scores which were scaled in a positive direction (i.e. higher scores denote higher quality of life). The mean score of items within each domain was used to calculate the domain score. Mean scores were then multiplied by 4 in order to make domain scores comparable with the scores used in the WHOQOL-100. A method for the manual calculation of individual scores was below:

o Physical domain= (6-Q3) + (6-Q4) + Q10+ Q15+Q16+Q17+Q18) x 4.
o Psychological domain= (Q5+ Q6+ Q7+Q11+Q19+ (6-Q26) x 4.
o Social Relationships domain= (Q20 + Q21+ Q22) x 4.
o Environment domain= (Q8+ Q9+Q12+Q13+Q14+ Q23 + Q24+Q25) x 4.

Since it is a positive scale with no standard grading; Among the score scale of 1 to 5, putting the least value of 1, lowest range of score i.e., 160 was taken and putting 5 in the same equation highest score i.e., 480 was taken. Equating and summing it all; we get: Less than 160 = Poor QOL; Between 160-320= Medium QOL; More than 320= Good QOL.

In the present study, it is expected that variability of QOL-score will correspond to different *Prakriti,* considering the impact of dominant *doshas* of *Prakriti* on an individual's different facets of life. Since youth have entered new lives, people/communities around them must learn to adapt and change with them. Adolescence is the time to revise these principles and implementing them in one's life practically on daily basis as there are peak health concerns in this age. Looking over all the domains, the scores for *Kapha, Pitta, and Vata Prakriti* are good, medium, and low respectively. As described by Acharya Vagbhata, out of three Prakritis, *Vata* is *Heena* (comes out with lowest QOL score), *Pitta* being *Madhya* (comes out with medium QOL score) and *Kapha* is *Uttam* (comes out with high QOL). Also it is seen that *VPK* type of *Prakriti* has scored the highest in the QOL questionnaire, confirming the *Ayurveda* concept of meaning *Sama-Prakriti* as *Shrestha.*

❖ This ultimately validates the renowned concept of *Ayurveda Deha-Prakriti* evidently on today's assessment questionnaire of the World Health Organization established in the current era of health care systems.

The study was conducted over 100 self-declared apparently healthy volunteers in age group 16-25 years irrespective of gender, and their *Prakriti* is analyzed by using the standard *Prakriti* assessment Performa. After *Prakriti* Analysis, the QOL assessment is done using WHO-QOL (BREF) Scale.

Prakriti is decided by the dosha related to sperm and ova, *Ahara-Vihara* of mother and condition and *ritu* of the uterus.[4] The distinguishing attributes of all the *Prakriti* are different from each other and each individual is an outcome of permutation and combination of *Tridoshas* in different proportion. This basic constitution, *Prakriti* gives vital insights into the prognosis of any disease, the appropriate therapy, and also the lifestyle, which is best, suited for him. This also constitutes motto of this study i.e., correlation of *Prakriti* and QOL in apparently healthy individuals*.*

♦ A STEP AHEAD TOWARDS DISEASE PREVENTION:

- The Epidemiological triangle, i.e. the triad of agent-host-environment plays a vital role in health care systems, same can be understood here as; Once the *Ayurveda* physician detects the *Prakriti* of an individual, he can easily study the host i.e. the person in whom the disease may reside, also will be able to learn about the possible *nidana* that contribute in disease manifestation in that particular individual; meanwhile assessing Quality Of life, Getting an idea of subject's living conditions, the physician can implement various strategies to break the loop-cycle of the epidemiological triangle and prevent disease to manifest.

  - When the causes of a disease are eliminated, generally the disease subsides naturally. *Prakriti* affects every factor by which a person is going to interact and decides the status of health. Therefore, it is clearly indicated in texts that lifestyle and various activities should be planned opposite to *Prakriti* for the maintenance of health.

♦ Concept of <u>*NIDANA*</u> as AGENT/etiological factors: Ayurvedic View

Nidana is the root cause of the disease and may become the cause of another disease as in *Nidanarthakara roga* mentioned by *Acharya Charak*.[5] The identification of causes of diseases is the essential feature of disease treatment. There are various factors that can affect an invidual's health such as; Diet [*ahara*], lifestyle [*vihara*], and some external factors. Since Ayurveda treats according to the *Prakriti* of an individual thus proper diagnosis is required for the accurate suggestion of medicine intake. *Ayurveda* classified diagnosis mainly depends on the *Prakriti* of an individual and the progression of the diseases. *Prakriti* affects each factor by which a person is going to interact and decides the status of health. All the physiological processes are directly controlled by *tridosha* and thus by the predominant dosha in a particular type of *Prakriti*.[6] It is clearly indicated in texts that lifestyle and various activities should be planned opposite to *Doshik- gunas* of *Prakriti* for the maintenance of health.[7]

- **Aim:-**
- To assess the correlation between *Prakriti* and Quality of Life in apparently healthy individuals: A Cross - sectional study"

- **Objectives:-**
- To assess quality of life score in self-declared apparently healthy individuals by using WHO-QOL [BREF] scale.

- To access *Dehika Prakriti* of the healthy volunteers by using *Prakriti* Assessment Performa cum questionnaire.

⬇ MATERIALS AND METHODS

Literary Source:

All the data related to literature was procured from ancient *Vedic* texts, classical texts of *Ayurveda, Sanskrit* dictionaries, books related to modern contemporary science and technology, previously published articles in renowned journals, and also from various cyber mediums such as the internet, etc., is followed by exploring the understanding behind previous work done and manifesting their loopholes being fulfilled.

⬇ Ethical clearance: The proposed cross-sectional study was presented in the form of a synopsis in front of the Institutional Ethical committee.

All volunteers enrolled within the present study have provided informed written consent, been educated about the general outlay of the study being conducted. 100 in count, Self-declared apparently healthy subjects, outside the CBPACS campus were selected randomly based on inclusion and exclusion criteria. Volunteers were asked about any addictions that might have affected their Quality of life irrespective of their natural human constitution. All the major outlines of the study detailed to volunteer and their participation requested.

▪ Inclusion Criteria

1. Self-Declared apparently healthy subjects aged 16-25 years either gender.
2. Individuals having no history of any apparent disease in last one month.
3. Individuals willing to participate in this study.

▪ Exclusion Criteria

1. Subjects suffering from any disease (acute or chronic)
2. Taking any medication presently.
3. Any kind of addiction that may hamper the physiological parameters.
4. Pregnancy and lactation.

Their *Prakriti* will be assessed by *Prakriti* performa as questionnaire and *Quality of life* will be assessed by WHOQOLS-BREF scale as questionnaire. A correlation will be established between an individual's *Prakriti* and QOL.

DURATION OF STUDY: - 12 months.

STUDY DESIGN: - Cross Sectional and Observational study.

DATA COLLECTION:-

Prakriti of 100 volunteers was assessed by using a performa based on *Prakriti* assessment questionnaire. QOL of these enrolled volunteer is then determined using WHO-QOL [BREF] scale and the scores were equated accordingly. All the data related to individual's QOL and type of *Dehika Prakriti* was recorded altogether and presented in the form of master chart.

OBSERVATION AND RESULT:-

On the basis of inclusion and exclusion criteria mentioned above and after doing the initial assessment of the enrolled subjects; following observations were made:

- The study subjects consist of 70 females and 30 males. So females were in majority with proportion of female & male as 7:3. Among the study subjects, most of the cases belonged to the age group 21 – 25 years (94.0%) and only 6% belonged to the age range 16 – 20 yr. The mean age of the study cases was 23.76±1.75 years with range (16 – 25) years.

- Overall the *Kapha* (K) *Prakriti* was found in maximum cases (31%) followed by the *Vata-Kapha* (17.0%). Among females again the *Kapha (K) prakriti* was found in maximum cases (30%) followed by the *Vata-Kapha* (VK) (20.0%). Among males, the *Kapha (K)* was found in maximum cases (33.3%) followed by the *Pitta-Kapha* (PK) (20.0%).

Table-1: Intergroup Comparison of Total Score_WHO-QOL (BREF) according to *Prakriti*

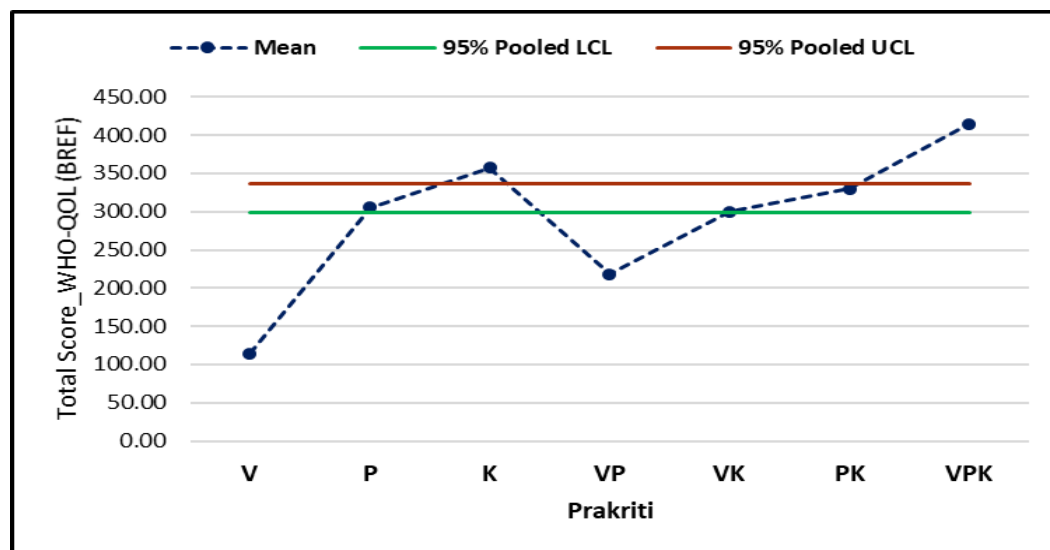| *Prakriti*	Total Score_WHO-QOL (BREF)				F	p-value
	Mean	SD	LCL	UCL		
V	114.55	6.99	109.85	119.24	41.42	**<0.001**
P	305.45	49.23	272.38	338.53		
K	357.03	24.85	347.92	366.15		
VP	218.00	138.59	25.92	410.08		
VK	300.24	94.79	251.50	348.97		
PK	329.85	49.92	299.68	360.01		
VPK	414.93	33.24	396.52	433.34		
Total	317.40	96.61	298.23	336.57		

Figure – 1: Intergroup Comparison of Total Score_WHO-QOL (BREF) according to *Prakriti*

Being the quantity nature of the parameter Total Score_WHO-QOL (BREF), the one WAY ANOVA is applicable to compare the study parameter with various *Prakriti* types. On comparing the mean Total Score_WHO-QOL (BREF) with *Prakriti*, the ANOVA test showed significant difference in mean values with various types of *Prakriti* **(p<0.001)** as **p value comes out to be less than 0.05.** Further according to control chart analysis, the mean showed significantly higher value for K and VPK types of *Prakriti* (These points are lying above the 95% pooled UCL) and lower value for V and VP types of *Prakriti* (These points are lying below the 95% pooled LCL).

DISCUSSION

Variation in humans, in regards to anatomical, physiological, immunological, psychological aspects, disease susceptibility and prognosis, and the response of disease towards treatment forms the basic pillars of personalized medicine. This also justifies the contemporary term of P4 MEDICINE (predictive, preventive, personalized, and participatory) coined by Dr. Leroy Hood.

- **DISCUSSION ON BEHALF OF AGE CRITERIA FOR CHOOSING SUBJECTS FOR CURRENT STUDY**

Since youth have entered new lives, people/communities around them must learn to adapt and change with them; Adolescence is the time to revise these principles and implementing them in one's life practically on daily basis. There are peak health concerns in this age; as young people today are beginning to take care of the responsibilities formerly taken by their parents soon including that of promoting their own health and self-care for minor health problems.[8]

- Investigating quality of life plays a key role in evaluating the effectiveness of medical interventions, public communication and problem prioritization plus many of disease can be prevented and total well-being of productive healthy individuals can be further more improved.

For deep and practical knowledge of this association, the research has been done and on the basis of honest observation and results obtained, various factors influencing *Prakriti* and Quality of life in one way or another are highlighted.

✓ **TABLE-01: Statistical description of various variables and their interpretation[9].**

VARIABLES	STATISTICAL RESULT	INTERPRETTAION
PHYSICAL DOMAIN	Significantly higher value for K, PK and VPK types of Prakriti and lower value for V and VP types of Prakriti. **[p value < 0.05]**	*Vata Prakriti* **individual:**[10] least strength, minimum muscle tone, possess lesser mental strength and least tolerance. *P Prakriti individuals:* incapacity to bear troubles; get irritated and lose their temperament very easily., medium strength, medium muscle tone, possess medium mental strength and medium tolerance. *K Prakriti individuals*[11]: A stable mind, strong body, good endurance, muscle bulk is good and nourished, not get easily distracted from healthy habits unlike V*ataj* person who keep changing their food habits time to time.
PSYCHOLOGICAL DOMAIN	Significantly higher value for K and VPK types of *Prakriti* and lower value for V and VP types of *Prakriti*. **[p value < 0.05]**	**People with *V prakriti:*** coward, unsatble, thankless and feeble minded., agonized with grief. **People with *P prakriti :*** excess and quick in anger, bold, very envious, proudy, like flattering and are affectionate for dependents, consoling to others and possess positive competition. **People with *K prakriti:*** courageous, steady and firm, calm, less envious, serious, shy, noble with high character, speaks truth, wealthy, are sympathetic to distressed, polite, have firm faith in religious scriptures and limited desires. They have concealing nature, hiding acts of them.

SOCIAL DOMAIN	significantly higher value for K, PK and VPK types of Prakriti and lower value for V and VP types of Prakriti. **[p value < 0.05]**	**Person of V Prakriti:** thankless, cherishing towards humble person. They have quick, inconsistent, erratic speech, have low-broken or hoarse voice, are very talkative. They make friends easily, being talkative or extrovert but loose them easily too because of their inconsistent, impulsive, undetermined and non-convincing behavior, mentally unstable, give up very easily without much reasoning. **Person of P Prakriti:** moderate speech and sharp voice, are convincing, argumentive and debate-winner, easy to loose temperament , are proudy and have thinking of being superior to others as they are their utmost priority. **People of K Prakriti:** legible, humble, have pleasant voice, are forgiving and forbearing nature, slow to get around people, less talking-reserve kind of people, faithful , definite in choosing their companions, completely determined towards their relationships.
ENVIRONMENTAL DOMAIN	significantly higher value for K, PK and VPK types of Prakriti and lower value for V and VP types of Prakriti. **[p value < 0.05]**	**People with V Prakriti:** poor or handicapped financially, have lesser means and luxuries, Limited friend circles. **People with P Prakriti** are dignified, have moderate finances and moderate resources of life and luxuries. **People with K Prakriti** are rich and wealthy, have stable friendship, are fortunately prosperous, are virtuous and have abundance of attendants to count on.
SOCIAL DOMAIN	significantly higher value for K, PK and VPK types of Prakriti and lower value for V and VP types	

TOTAL WHOQOL (BREF) SCORE	significantly higher value for K and VPK types of Prakriti) and lower value for V and VP types of Prakriti. **[p value < 0.05]**	Domain scores are scaled in a positive direction (i.e. higher scores denote higher Quality of life). Looking over all the domains, the score for *kapha, pitta and Vata Prakriti* are good, medium and low respectively. It is seen that *VPK type of Prakriti*[12] has scored the highest in QOL questionnaire, confirming *Ayurveda* concept of meaning *Sama prakriti* as Shreshtha. This ultimately validates the renowned concept of *Ayurveda Deha-Prakriti* evidentful on today's assessment questionnaire of World Health Organization established in current era of health care systems.

✓ **On applying Statistical test [One-Way ANOVA],** We obtained the significant result after statistical analysis; **p-value** being less than 0.05 and also accepted Hypothesis with the given **confidence level** of 95% and hence based on our findings we can say that **"There is significant association between Prakriti and Quality of life in apparently healthy individuals."**

The maximum average score for QOL is of *VPK [Tridoshaj] type of Prakriti* i.e. 414.93, followed by K [*kaphaj Prakriti*] i.e. 357.03, then Pitta-*kaphaj prakriti* 329.85 and least QOL score came out to be of Vataj Prakriti i.e. 114.55. *Tridoshaj prakriti* have all three *doshas* in balance, therefore equilibrium of all three *doshas* contribute towards the score obtained from assessment of different domians of life through WHO-QOL(BREF) scale.

⬛ Clinical background behind relation between *Prakriti* and QOL is:

1) Early prediction of disease susceptibility and maintaining good quality of life for an individual.

2) Prevention of possible diseases and   improving the quality of upcoming life in future.

3) Deciding prognosis of a disease and intervene accordingly.

4) Selection of proper and precise management strategy in a given disease. It should include cutting down the period of treatment or augmenting the lifespan & quality of life for an individual. In cases with

high co-morbidities, for e.g., In cancer patients, where improving lifespan of patient is beyond human power, increasing quality of life actually works as a godsend boon for patient as well as family.

✦ NEED OF STUDY

The need of current research work is felt due to limitation among documented research over core Ayurvedic concepts, one among which is *Prakriti*. For globalization of Ayurveda it is important to parallelize and establish the fundamentals of Ayurveda using modern scientific instruments and tools.

✦ CONCLUSION

Balancing the *Gunas* of *Doshas* is the key, and it should be targeted while framing personalized medicine or treatment regime for any individual of any *Prakriti* throughout his life but a better preventive part of preserving life should be done the earliest as possible. The nation's goal must be keeping adults economically productive up to their retirement age both for health promotion and economic development. Progress and development are mainly supported by the productive youth of any country, Hence **keeping a check over** *Prakriti* and health-related QOL issues is a must at this age and if done will work as a boon for the whole nation's development as well as mankind. Unfortunately, the scientists, due to their limitations of experimental work and tools, have dealt with the subject of life and personality in an analytic way and in parts. Most probably this is the reason why scientific work has not given the proper answer to the Quality of life and personality. If it served as a driving force stimulating more useful and significant practical work in this field, the purpose of the present work would be amply served.

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