Short Communication

Jatharagni and Prakriti of young Indian adult population: A descriptive cross-sectional study

Meera Kuttikrishnan a,*, Rudresh Sridhar b, Elgeena Varghese a

a Department of Kiya Shareera, Sri Kalabhraveshwara Swamy Ayurvedic Medical College, Hospital and Research Center, Rajiv Gandhi University of Health Sciences, Bengaluru, India
b Department of Swastha Vritta & Yoga, Sri Sri College of Ayurvedic Science and Research, Rajiv Gandhi University of Health Sciences, Bengaluru, India

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Abstract

Agni has an important role to play in the physiological functioning of the body. It varies with the bodily constitution of individuals, season, age, and other factors. The uniqueness of each individual is determined by the Prakriti which deals with somatic and psychic development. The Prakriti directly impacts Jatharagni and determines the type of Jatharagni. A descriptive cross-sectional survey was conducted among healthy students from both genders aged between 18 and 30 years. Jatharagni and Prakriti were evaluated using the Jatharagni Assessment Questionnaire (JQA) and a 62-item self-assessment questionnaire validated in previous study. The results indicate that there is a significant association between the types of Prakriti and the types of Jatharagni \( \chi^2 (6) = 155.14, (p = .001) \). The post-hoc analysis revealed that Vatapitta is associated with the dominance of Teekshnagni, Vatakapha is associated with the dominance of Mandagni, and Kaphapitta is associated with the dominance of Vishamagni. The result indicates a statistically significant association between types of Prakriti and Jaraana Shakti (Likelihood Ratio \( \chi^2 (4) = 27.010, p = .001 \)). The study establishes a significant association between Agni and Dvandvaja Prakriti. Vatapitta Prakriti individuals had Teekshnagni. Vatakapha Prakriti individuals had Mandagni and Kaphapitta Prakriti had Vishamagni. Though the results were promising, the analysis should be done with a larger sample size in different populations.

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1. Introduction

According to the fundamental principles of Ayurveda, Agni has an important role to play in the physiological functioning of the body. It is the cause of life, complexion, strength, health, nourishment, lustre, Oja, Teja (energy), and Prana (life energy) [1–3]. Agni is the base of life and one of the ten factors that are noted and examined before initiating the treatment of a patient. The state of Agni varies with the bodily constitution of individuals, season, age and other factors. Agni is concentrated in the Jathara (stomach and duodenum) in the form of Jatharagni (Charaka Samhita/Chikitsa Sthana/15/6–8) [4] which determines the fate of the human body and it is the invariable agent in the process of Paka (digestion, transformation) [5]. It is also responsible for the duration of life, health, valour, Ojas (the essence of the dhatu), the strength of all the bhutagni and dhatagni [6]. The Jatharagni also influences the lifespan and health of the individual and it is the central digestive power that represents the metabolic functions of the body [7].

The lifestyle of the Indian population is noticeably changing. These changes include skipping meals, inadequate or excessive food intake, excessive usage of carbonated and alcoholic beverages, irregular rest and sleep, imbalance in familial activities, work, high-stress levels. These habits cause indigestion, physiological and psychological distress. When the Agni of an individual is Sama, that person would be healthy and lead a long, happy and healthy life. But, if the Agni of a person is disturbed, the whole metabolism in his body would be disrupted, resulting in ill health and disease [2]. If Jatharagni is too weak, it causes compromised digestion of food and leads to malabsorption and accumulation of toxins (ama). If Jatharagni is too strong, it burns out associated tissues resulting in tissue degeneration [7].

Ayurveda has an individualistic approach that considers each human being separately, Prakriti (phenotype-based Ayurveda...
constitution) is an individual’s uniqueness and it deals with somatic and psychic development. According to Acharya Charaka, Panchamahabhuta and Chetana (soul) join to form Purusha and the nature of this is Prakriti. Prakriti [2] is described in Ayurveda based on the three individual Doshas namely Vata, Pitta and Kapha. Individuals are categorized into Ekadoshaja and Dvandva[j] based on the dominance of one or two Doshas. The three Dvandva Jatharagni are, namely Vatapitta, Vatakapha and Pittakapha. Prakriti directly impacts Jatharagni and it determines the type of Jatharagni in an individual, namely Tikshna in Vatapitta, Mandagni in Vatakapha and Vishamagni in Kaphapitta [2].

Research based on Prakriti still in its infantile stage and attention was not paid to the assessment of Jatharagni in various Prakriti. Hence, researchers undertook the task to evaluate the status of Jatharagni in Dvandva Prakriti individuals. The objective of the study was to make a standard format to assess Jatharagni and evaluate it in Dvandva Prakriti individuals.

2. Materials and methods

2.1. Ethical consideration

The study was approved by the Institutional Ethics Committee of SDM College of Ayurveda, Hassan. The study processes were explained to the participants, and consent forms were obtained before the data collection.

2.2. Study methodology

A descriptive cross-sectional survey was conducted among 150 healthy students from both genders aged between 18 and 30 chosen from a selected college of Hassan district, Karnataka. Individuals who were suffering from systemic disorders and congenital anomalies were excluded from the study. A self-assessment questionnaire based on the references from Charaka Samhita, developed by Kishore Patwardhan [8], was used to screen the study population and participants were selected and recruited based on the sub-scale analysis. Care was taken in this process as a minimum of 50 participants were recruited to the Vatapitta, Vatakapha and Kaphapitta Prakriti group. The questionnaire had three sub-scales, namely Vata, Pitta and Kapha. The sub-scale analysis was done to find out the dominance of Dosha by comparing the percentage of scores obtained for each Dosha sub-scale. The three Vata, Pitta and Kapha subscale score percentages were compared and the two highest Dosha percentages were considered for the dominance of Doshas. Based on the dominance of Doshas, the participants were classified and grouped into Vatapitta, Vatakapha and Kaphapitta Prakriti. Vatapitta individuals had dominant percentages of both Vata and Pitta, Vatakapha participants had a dominant percentage of Vata and Kapha, and Kaphapitta participants had a dominant percentage of Kapha and Pitta.

The researchers used a proforma to collect demographic information from the participants. Jatharagni was evaluated using the Jatharagni Assessment Questionnaire (JAQ) developed by the researchers by reviewing the Lakshanas (symptoms) of Vishamagni, Teekshnagni and Mandagni in various Samhitas. JAQ is a 51 item five-point Likert scale that measures the Jatharagni using the responses as 1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree, and 5 = strongly agree. Higher scores indicate a higher amount of Agni. The JAQ consists of four subscales, namely Vishamagni with 11 items, Teekshnagni with 14 items, Mandagni with 13 items and Samagni with 13 items. JAQ also contains two additional three-point Likert scales to assess the Abhyavaharan Shakti (food intake capacity) and Jara Shakti (digestive capacity). The sub-scale Abhyavaharan Shakti contains five items, Jara Shakti contains six items and the total scores were classified into three categories, namely Avara or mild (5), Madhyama or moderate (6—10), and Pravara or high (11—15). The content validity index for item-level (I-CVIs) and the scale-level (S-CVI) (0.93) were calculated and found to be valid. The reliability (Cronbach’s alpha) was computed for all the sub-scales and the alpha values for Vishamagni, Teekshnagni and Mandagni subscales were 0.782, 0.731 and 0.793, respectively. Descriptive and inferential statistics were computed using SPSS Version 16.

3. Results

3.1. Sample characteristics

The sample characteristics of 150 young adults are described in terms of frequency and percentage. Out of 150 participants, 75 (50.00%) were aged between 18 and 21 years, while 62 (41.33%) were aged between 22 and 25 years. Among the total participants, 111 (74.00%) were females. The majority of the participants, i.e., 120 (80.00%) were Hindus. Concerning the diet, 116 (77.37%) had a mixed diet and 30 (20.00%) were vegetarian. Among the total participants, 24 (16.00%) reported having regular constipation and 19 (12.7%) reported that they regularly had sleep disturbances. Complaints of stress were reported in 14 (9.00%) of participants.

3.2. Characteristics of Agni among Vatapitta, Vatakapha and Kaphapitta participants

Out of the 150 participants, 50 each belonged to Vatapitta, Vatakapha and Kaphapitta. In the Vatapitta group, 39 participants had Teekshnagni, 4 participants had Vishamagni, 3 participants had Mandagni, and 4 participants had Samagni. In the Vatakapha group, 33 participants had Mandagni, 7 participants had Vishamagni, 10 participants had Samagni and no one had Teekshnagni. In the Kaphapitta group, 28 participants had Vishamagni, 2 participants had Teekshnagni, 2 had Mandagni and 18 had Samagni.

3.3. Abhyavaharan Shakti

When analyzing the Abhyavaharan Shakti among all participants, 110 (73.33%) had Madhyama Abhyavaharan Shakti and five (3.33%) only had Avara Abhyavaharan Shakti. When comparing the Prakriti groups, 26 (52%) and 23 (46%) of Vatapitta individuals had Madhyama and Pravara Abhyavaharan Shakti respectively. Whereas in the Vatakapha group, 45 (90%) had Madhyama Abhyavaharan Shakti. Meanwhile, in Kaphapitta individuals, 39 (78%) had Madhyama Abhyavaharan Shakti and 10 (20%) had Pravara Abhyavaharan Shakti (see Table 1).

3.4. Jara Shakti

The analysis of the data collected from the participants revealed that 87 (58%) of them had Pravara Jara Shakti and 57 (38%) had Madhyama Jarana Shakti. Only six (4%) had Avara Jarana Shakti. When comparing the Prakriti groups, 41 (82%) and eight (16%) of Vatapitta individuals had Pravara and Madhyama Jarana Shakti, respectively. In the Vatakapha group, 16 (32%) had Pravara Jarana Shakti and 31 (62%) had Madhyama Jarana Shakti. Meanwhile, in Kaphapitta individuals, 30 (60%) had Pravara Jarana Shakti and 18 (36%) had Madhyama Jarana Shakti (see Table 1).

3.5. Association between types of Prakriti and types of Jatharagni

Table 2 indicates a significant association between the types of Prakriti and Jatharagni with a higher proportion of Prakriti Vata individuals having higher Jatharagni scores. The post-hoc
analysis revealed that Vatapitta is associated with the dominance of Teekshnagni, Vatakapha is associated with the dominance of Mandagni and Kaphapitta is associated with the dominance of Vishamagni.

3.6. Association between types of Prakriti and Abhyavaharana Shakti

The likelihood ratio has been computed to assess the association between types of Prakriti and Abhyavaharana Shakti. The result indicates a statistically significant association between the variables (Likelihood Ratio (χ²) = 27.936, p = .001). The post-hoc analysis revealed that Prakriti is significantly associated with Madhyama Abhyavahara Shakti.

3.7. Association between types of Prakriti and Jarana Shakti

The likelihood ratio has been computed to assess the association between types of Prakriti and Jarana Shakti. The result indicates a statistically significant association between the variables (Likelihood Ratio (χ²) = 27.010, p = .001). The post-hoc analysis revealed that Vatapitta and Kaphapitta Prakriti are significantly associated with Pravara Jarana Shakti. Meanwhile, Vatakapha Prakriti is significantly associated with Madhyama Jarana Shakti. The researchers followed reporting guidelines for the dissemination of the findings [9].

4. Discussion

4.1. Vatapitta Prakriti and Agni

The Samana Vata and Apana Vata (Susruta Samhita/Soother Sthana/12/8–9) subtypes regulate the gastrointestinal functions such as Viveka (digestion, absorption, and segregation of waste) (Susruta Samhita/Soother Sthana/15/3) [5,14,15]. Among the Vatapitta individuals, most of them had Teekshnagni even though there was a dominance of Vatagunas. This was because of Pitta Dosha and the Yogavahi property (which accentuates the properties of others) of Vata. Yogavahi can carry the property of other Dosha with which it combines. Here it is the Vata Dosha that has this property. Vayu is exceedingly Yogavahi in nature [10]. When combined with Tejas, it produces a burning sensation and when combined with Soma, it produces a cooling effect. It has been stated that even though Vayu is cold in nature because of Yogavahi property, instead of manifesting its own attributes, it manifests the attributes of the Dosha with which it is combined. It is the property of a Yogavahi substance to accentuate the attributes of the matter to which it is added. Pitta Dosha has more of Ushna and Teekshna Gunas. Therefore, based on these, they had signs of Calashoshaa (dryness of throat), Oshthashoshaa (dryness of lips), and Daaha (burning sensation) after the intake of food. The person usually can digest a large amount of food because of Teekshna Guna and frequently eat food and may complain of Santapa (heat), Daaha etc. Due to Ushna Guna, this Prakriti individual will feel hunger and thirst frequently. Hence, he drinks more amount of water compared to others. From the above discussion points, it is clear that Vatapitta Prakriti will have Teekshnagi.

4.2. Vatakapha Prakriti and Agni

The Vata individuals have irregular digestion patterns and the Kapha individuals have the least metabolic capacity among the three Prakriti types [11,12]. Among the participants of Vatakapha, most of them had Mandagni though there is a dominance of both Vata and Kapha Doshas. Kapha Gunas such as Stimitha, Guru Guna and Sheeta Guna appeared to influence the Agni of that individual. Based on these Gunas and the Yogavahi property of Vata, the state of Agni was Mandana. Mandagni is the state of Agni in which the digestive power is diminished [13]. It is the property of a Yogavahi substance to accentuate the attributes of the matter to which it is added. In this Vatakapha Prakriti individual, due to the presence of Sheeta Guna, Snigdha Guna, and Mandha Guna; the person takes food slowly, leading to less intake of food and hence suffers from the heaviness of abdomen and head, laziness, vomiting sensation, drowsy feeling, etc. From the points mentioned above, it is clear that Vatakapha Prakriti will have Mandagni.

4.3. Kaphapitta Prakriti and Agni

In this study, out of 50 volunteers, 28 had Vishamagni. This may be due to the antagonistic property of Kapha and Pitta. In Kaphapitta...
Prakriti, there is a dominance of Gunas related to both Kapha and Pitta. The Gunas of Pitta are Ushna, Teekshna and Drava Gunas, and that of Kapha are Sheeta, Guru, Shhira Gunas, which are opposite to each other. According to the Aahara Vishesha, there will be variation in Agni that is sometimes Teekshnagni and sometimes Mandagni. This variation in Agni is nothing but the Vishama state of Agni. For example, if a person of Kaphapitta Prakriti is consuming more Kaphakara Aahara and Vihara there will be Mandagni and if he is consuming more Pittakara Aahara and Vihara, there will be Teekshnagni. In an individual with Kaphapitta Prakriti, there will be a presence of Kapha Vihara, without following the Koshta Jatharagni as it is without following the Kaphapitta Prakriti. This is seen more among the younger individuals aged between 18 and 30 years. In the present study, 24 individuals had constipation problems, 19 people complained about sleep disturbance, 14 were stressed and most of the volunteers were following a mixed diet pattern. This may possibly be a reason for the variation of Agni with their Prakriti. Ahiita Nidra also leads to Mandagni. Decreased or disturbed sleep will increase Rakshya Guna in the body and it will also affect the state of Agni. Constipation will lead to the vitiation of Apana Vata and cause upward movement of this Vata. It leads to impairment in the Tridoshic equilibrium of Koshta by vitiating Jatharagni. If Mamasshana is not done correctly without following the Ahara Vidhi will lead to impairment in Jatharagni as it is Guru and Shleshmana. Stress hampers Agni. In Ahara Vidhi, there is a description to consume food with the concentration of mind and consciousness of self. When a person is stressed, his mind gets disturbed and may be afflicted by anger, anxiety etc. It, in turn, hampers the Agni.

4.4. Variation of Agni with the Prakriti

In the present study, 66% of participants had Agni related to their Prakriti. The rest of the participants showed a variation between their Prakriti and Agni. The variation in Agni may be noticed because of their work habits such as psychological tension, varying sleep patterns, dietary habits such as fast foods, junk foods, not following Aahara Vidhi etc. This is seen more among the younger individuals aged between 18 and 30 years. In the present study, 24 individuals had constipation problems, 19 people complained about sleep disturbance, 14 were stressed and most of the volunteers were following a mixed diet pattern. This may possibly be a reason for the variation of Agni with their Prakriti. Ahiita Nidra also leads to Mandagni. Decreased or disturbed sleep will increase Rakshya Guna in the body and it will also affect the state of Agni. Constipation will lead to the vitiation of Apana Vata and cause upward movement of this Vata. It leads to impairment in the Tridoshic equilibrium of Koshta by vitiating Jatharagni. If Mamasshana is not done correctly without following the Ahara Vidhi will lead to impairment in Jatharagni as it is Guru and Shleshmana. Stress hampers Agni. In Ahara Vidhi, there is a description to consume food with the concentration of mind and consciousness of self. When a person is stressed, his mind gets disturbed and may be afflicted by anger, anxiety etc. It, in turn, hampers the Agni.

4.5. Prakriti and Abhyavaharanah Shakti, Jarana Shakti

Among the 26 members in Vatakapha group, 45 members in the Kaphapitta group had Madhyama Abhyavaharanah Shakti, which was statistically significant. In Vatakapha 23 members had Pravara Abhyavaharanah Shakti. Out of 150 participants, 49 members in Vatakapha, 31 members in Vatakapha, and 30 members in the Kaphapitta group had Pravara Jarana Shakti which was statistically significant. One of the reasons behind Pravara Jarana Shakti and Madhyama Abhyavaharanah Shakti could be because of the influence of Rita on Jatharagni [15]. The study was carried out in the Hemantha Rita that is in November and December. In this season, because of the Sheetala Vayu in the external environment, internal Agni gets stimulated more and Shareerika Bala will be Shreshtha. Also, the study was carried out in the Madhyama and Youvana age group individuals. As it is Pitta dominant age, the digestive capacity will be good. Hence, this might be why a maximum number of persons in this study have good digestive power and ingestion capacity irrespective of Prakriti.

4.5.1. Limitations

The study was conducted in a small group of participants and the results should be proven with a larger sample size in different populations. The study does not undertake a gender-based analysis due to a small number of male participants compared to female participants. The study was conducted on young adults and the result cannot be generalized to the middle-aged or older adult population.

5. Conclusion

Agni has a spreading nature and is responsible for all types of transformations in the body. It plays a very important role in the growth, development and maintenance of the body. There is a definite type of Jatharagni for a particular Prakriti and this is pre-determined. Understanding one’s own Agni and Prakriti helps individuals choose a specific diet and regimes for a healthy life. The study establishes the association between Agni and Dwandvajaya Prakriti. It was observed that Vatakapha Prakriti individuals had Teekshnagni, Vatakapha Prakriti individuals had Mandagni, and Kaphapitta Prakriti had Vishamagni. Although the results were promising, they should be proven with a larger sample size in different populations.

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Author contributions

Meera Kuttikrishnan: Conceptualization, Methodology, Investigation.

Rudresh Sridhar: Validation, Writing, Reviewing & Editing.

Elgeena Varghese: Formal analysis, Original draft preparation.

Conflict of interest

None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jaim.2021.04.008.

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