



## Association Between Incidence of Tarunya Pidika and Prakriti in Students - An Observational Study

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**Abstract:** Yuvan Pidika (Tarunya Pidika) is described by Acharya Sushruta under the heading "Kshudra Roga." Adolescents' faces exhibit the Shalmali thorn-like eruption caused by the vitiation of Kapha, Vata, and Rakta (Mukhadushika). Due to the symptoms' resemblance to Acne vulgaris, it can be related. The Prakriti type of an individual determines their vulnerability to certain diseases. Moreover, Prakriti is crucial in the development of some diseases. By evaluating the Prakriti in prediagnosed Yuvanapidika participants, this observational study aimed to identify the association between the occurrence of Yuvanapidika and Prakriti. It will assist in raising awareness of preventive actions among those belonging to a particular Prakriti where Yuvanapidika is more common. According to the inclusion criteria, the individuals with Tarunya pidika were chosen for the study. Prakriti was evaluated utilizing an online Prakriti Parikshana app and a personal interview based on previously designed, validated questionnaires. Younger age groups (18 to 22) had a higher prevalence of Yuvanapidika, and more cases were discovered in Pitta-dominant and Kapha-predominant Prakriti. Aggravated Pitta affects the blood or Rakta dhatu. The contaminated blood affects the epidermis and encourages overactive sebaceous gland oil production. The Kapha quality is sticky. Aggravated Kapha makes the oil that the skin's sebaceous glands secrete stickier. Hence, developing thick sebaceous plugs in the skin's pores and hair follicles leads to acne. Since Kaphapittaja Prakriti contained the highest concentration of Yuvanapidika, it can be concluded that there is an association between Prakriti and the occurrence of Yuvanapidika.

**Keywords:** Acne vulgaris, Body constitution, Prakriti Assessment, Mukhadushika, Tarunya pidika, Yuvanapidika.

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## I. INTRODUCTION

Human faces, according to a famous philosopher, convey personality and insight. According to Ayurveda, among the 56 Upangas, the face is at the top, so everyone, especially young people, is extremely conscious of facial beauty.<sup>1</sup> Tarunya pidika, the disease's name, shows that it almost occurs at a young age.<sup>2</sup> Acharya Charaka mentioned Yuvana pidika while explaining Bahya Rogmargagata Vyadhi, which implies that its Adhistan is Twak. The vitiation of Dosha mainly affects the skin with Rakta Dhatu.<sup>3</sup> Acharya Sushruta described 'Yauvan Pidika' under the heading "Kshudra Roga." Yauvan Pidika manifests mainly on the face. It is a common health issue that affects adolescents' physical, psychological, and social well-being. One of the most prevalent dermatoses, Yauvan Pidika, affects the appearance and manifests between puberty and early adulthood.<sup>4</sup> The eruption on an adolescent's face that resembles a Shalmali thorn due to the vitiation of Kapha, Vata, and Rakta is known as a Mukhadushika.<sup>5</sup> It can be correlated to Acne vulgaris due to the similarity of symptoms. Inflammatory (papules, pustules, and nodules) and non-inflammatory (open and closed comedones) lesions are the hallmarks of the pilosebaceous follicular disease known as acne vulgaris.<sup>6</sup> Seborrhea, comedones, erythematous papules, and pustules are among the clinical manifestations; nodules, deep pustules, or pseudocysts are seen less frequently, and scarring develops in a few cases. Increased sebum production, cornification of the pilosebaceous ducts, microbial involvement, and inflammation are the four main causes that contribute to the development of the condition. It results in an unattractive appearance and permanent facial disfigurement, which can cause an inferiority complex and occasionally social isolation. It always affects both sexes. There is no societal class that is limited to specific. It primarily affects the skin with a disproportionately higher density of oil glands, such as the face, upper chest, and back. Environmental factors, genetics, hormonal imbalances, cosmetics, stress, nutrient deficiencies, excessive sugar, caffeine, fatty acid consumption, inadequate skin care, and sleep disturbances are the main causes of acne.<sup>7</sup> The study's objectives are to assess the incidence of Tarunypidika in students, to assess the Prakriti of students having Tarunypidika, and to establish the association between the incidence of Tarunya pidika and Prakriti. It will help raise awareness of preventive actions among those in a particular Prakriti where Yuvanapidika is more common.

### I.1. Vernacular names

- Sanskrit - Yuvana Pidaka, Yauvana Pitaka, Mukh-Dushika, TarunyaPidaka.
- Hindi - Yuvanapidaka, Keel, Muhanse.
- English - Pimples.
- Latin - Acne, Acne Vulgaris.
- Gujarati - Khila.
- Arabi - Busur Labhi.
- Panjabi - Keel.
- Tibetan - Aruha, Kitibh
- Farsi - Muhara Masari.<sup>8</sup>

**Pathogenesis-** When the sebaceous glands are most active during puberty, acne vulgaris, a follicular disease, forms. In the there-adolescent period, seborrhea oleosa and some comedones frequently show as forerunners of the disease. The pilosebaceous ostia's hyperkeratosis is a significant

pathogenic component in its development, in addition to seborrhea. A keratinous cum sebaceous plug in the follicular neck causes the channel to be narrow and occasionally become blocked. A well-developed growth hair generally obstructs the sebaceous and keratinous material from accumulating. In a sense, the hair that is growing fills the function of the needle. Because of this, despite seborrhea in these areas, acne never develops on the scalp and only infrequently on the bare skin. The comedones, the main acne lesion, is a plug made of dried sebum, epithelial cells, and keratinous scales that fills the pilosebaceous canal on the skin's surface. Initially appearing as a slightly elevated white head, the sulfur component of sebum quickly turns into sulphide, turning the white head into a black dot known as a black head. The full comedone can be easily extracted using the comedone extractor as a yellowish, cheesy-looking lump that resembles a worm. Although some comedons may continue to exist only happens occasionally. Erythema initially surrounds or envelops the comedone and develops into a moderately firm, lentil- to bean-sized papule that is a red rose in colour. Most of these papules gradually disappeared completely; however, some were suppurating and due to secondary invaders, primarily staphylococci-acne pustulosa. The pustules in a deep-seated suppuration take longer to involute than superficial pustules. Rather firm, bluish-red, perifollicular nodules are the hallmark of acne indurata. They endure for a very long period. Numerous of them eventually get partially or entirely absorbed. Some of these develop into cysts or acne cystica. Nonetheless, they frequently continue, occasionally releasing a thin, purulent material. Many pseudocysts draining sinuses and hypertrophic scars can be found in the most severe form of acne. The four main pathogenic processes that result in acne lesions are colonization of the follicles by *Propionibacterium acnes*, altered follicular keratinization that causes comedones, increased and altered sebum production under androgen control, and complex inflammatory mechanisms involving both innate and acquired immunity. Microcomedones, comedones, papules, nodules, pustules, scars, pigmentation, blackheads, whiteheads, and scarring are a few of the different stages of acne.<sup>9-11</sup> The mainstays of treatment include dietary modification and oral and topical medicines. Antibiotics, combination oral contraceptives, anti-androgens like spironolactone (Aldactone), and isotretinoin (Amnesteem, Claravis), a vitamin A derivative, are all examples of internal therapy. Retinoids and retinoid-like medications such as tretinoin (Avita, Retin-A, others), adapalene (Differin), and tazarotene (Tazorac, Avage, others), antibiotics such as erythromycin with benzoyl peroxide (Benzamycin), clindamycin with benzoyl peroxide (Benzaclin), and azelaic acid and salicylic acid (Aczone) 5% gel twice daily is recommended in inflammatory condition. Medications alone or combined with light therapy, chemical peels, draining, extraction, and steroid injection can be advised.<sup>12</sup> *Prakriti* means constitution or nature; it consists of the *Tridosha* (*Vata*, *Pitta*, and *Kapha*).<sup>13</sup> Each Dosha has its particular characteristics and functions which are universal to biological systems and are present in all organisms.<sup>14</sup> According to popular belief, *Prakriti* is predetermined at conception and unaffected throughout life with support from external influences like maternal diet and lifestyle.<sup>15</sup> Depending on the relative dominance of each Dosha, determined by their characteristics (Table I), each person can be categorized into different Vata, Pitta, and Kapha *Prakriti* combinations. This classification is independent of each person's unique racial, ethnic, linguistic, and geographic

background. Susceptibility to various ailments depends upon an individual's type of *Prakriti* (body constitution). As a result, the evaluation of *Prakriti* analysis plays a crucial part in the prognosis, diagnosis, treatment, and prevention of many complicated diseases and in comprehending the patient's

physical and mental constitution. An individual typically has one or more *Doshas* that naturally predominate. To stay healthy, each person must keep their *Dosha* balance, determined by their *Prakriti*.<sup>16</sup>

**Table 1: Characteristics of Vata, Pitta, and Kapha Prakriti**<sup>17</sup>

Characteristic features	Vata Prakriti	Pitta Prakriti	Kapha Prakriti
Body built	Thin, lean, slender, disproportionate	Medium, delicately shaped	Broad, proportionate, compact
Joints	Unstable, stiff joints with crackling sounds.	soft and loose joints, muscles, and limbs	Strong, well-hidden joints
Skin	Dry, rough, cracked, and cold skin with dark, brownish, black, grey, or dusky complexion.	Warm, soft, delicate, sensitive skin with freckles and moles, wrinkled skin with fair, reddish, yellowish, or pinkish complexion	Smooth, moist, cold, glossy, oily skin with a light, clear and whitish complexion
Hair.	Thin, scanty, less, dry, rough, cracked with split ends	Thin, fine, oily blonde or red, early greying	Thick, glossy, firmly rooted, wavy, and bee-black hair
Eyes	Dry, unsteady, and blinking	Sharp and penetrating with blonde or copper eyelashes;	Large, attractive, and full with thick eyelashes, moist and pleasant eyes
Lips	Dark, dry, cracked	Soft, pink, copper-colored	Full, thick moist, and oily
Teeth	Small, crooked, easily cracked	Moderate size, yellowish	Strong, large, white
Appetite for food and digestion	Inconsistent, varies between strong and weak	Intense, cannot skip the meal	Weak and slow digestion can cause skip a meal
Diet habits	Irregular diet habits Likes unctuous, hot, sweet, sour, and salty foods	Eats too often and too much likes sweet, bitter, astringent, and cold foods and drinks	Regular eating habits and likes, slow food intake Likes sweets
Bowel Habits	Constipated bowel	Loose stools, Excessive sweating, and urination	Normal steady evacuation
Weight gain	Difficulty in gaining	Gain and loose easily	Tendency to obesity
movement and physical activities	Very quick with swift movements	Moderate	Slow and steady gait and activities
Tolerance for seasonal variation	Intolerant to cold climate	Intolerant to hot climate	Not much bothered
Disease tendency	Catches diseases very easily	Moderate resistance	Good resistance
Disease susceptibility	Lower	Moderate	High
Aging	Fast	Moderate	Slow
Speech	Talkative	Authoritative, contending debater	Calm and quiet
Memory	Quick at grasping Poor retention	Moderate in grasping and retention	Slow in grasping Good retention

This table shows the characteristics of Vata, Pitta, and Kapha *Prakriti*. According to a person's *Prakriti*, the imbalance of the *Doshas* can cause disease. For instance, a Pitta *Prakriti* person is said to be more susceptible to peptic ulcers, hypertension, and skin conditions, a Vata *Prakriti* person to backaches, joint aches, and creaky joints, and Kapha *Prakriti* people are said to be more susceptible to obesity, diabetes, and atherosclerosis.<sup>18-20</sup>

## 1.2. Rationale of study

Acne vulgaris incidence is rising today due to poor dietary practices, bad behavioral patterns, stress, and rising environmental pollution. Although it is not life-threatening, severe facial scarring can result when it becomes chronic and severe. Around 9.4% of people worldwide have Acne vulgaris, with teens having the highest prevalence. Among all ethnic groupings, it affects more than 90% of men and 80% of women.<sup>21-22</sup> Acne causes severe morbidity, including psychological problems like low self-esteem, depression,

anxiety, and persistent scarring, which harm the quality of life. Some of the causes can be prevented. Moreover, *Prakriti* is crucial in the development of some diseases. This observational study aims to establish the association between the occurrence of Yuvanapidika and *Prakriti* by assessing the *Prakriti* in prediagnosed subjects of Yuvanapidika.

## 1.3. Research question

Is there an association between the incidence of Tarunya pidika and *Prakriti* in students?

## 2. METHODOLOGY

### 2.1. Location

Data was collected from Outdoor patients of Mahatma Gandhi Ayurved College, Hospital & Research Centre, Salod (H), Wardha district. The subjects with Yuvanapidika were selected for study as per inclusion criteria. *Prakriti* was

assessed by personal interview based on validated questionnaires and using the online Prakriti Parikshana app. Before interviewing, the informed consent of the subjects was taken.

## 2.2. Ethical Approval Statement

Permission was taken from the institutional ethical committee (MGACHRC/IEC/JUN.-2021/241). Written consent were received from the participants.

## 2.3. Assessment of Prakriti

Prakriti assessment was mainly based on the parameters of Dosha given in Brihattaryi, like Charak Samhita, Sushruta Samhita, and Vagbhata. According to (table 1), all of the factors are representations of a certain prakriti. For Prakriti parikshana traditional techniques were used like physical examination, such as visual, tactile, olfactory, and auditory assessments; inference based on information gathered through indirect methods, such as asking questions; and drawing conclusions based on the information, knowledge, and experience that is currently available. In this study, Prakriti was assessed using predesigned and validated questionnaires based on literature in Ayurvedic texts comprising 30 objective questions related to the person's physical, psychological characteristics, and physiological habits. Each of the questions had three options to choose from Vata (V), Pitta (P), or Kapha (K). The score obtained by a person for answers was summed up, and Prakriti was decided depending on the scores obtained. The concept of "Prakriti" (constitution), unique to Ayurveda and genetically determined, divides the population into subgroups based on phenotypic characteristics such as appearance, temperament, and habits.<sup>23</sup> The concept is believed to help predict a person's predisposition to a specific disease, prognosis, and treatment options.<sup>24</sup>

## 2.4. Duration of Study

6 months ((June 2021- Dec. 2021)

## 2.5. Inclusion criteria

- 1) Students presenting with classical signs and symptoms of Tarunya pidika were selected.
- 2) Students between the age group 18-30 years of either sex.
- 3) Students having 5 or more 5 pidika on the face
- 4) Students ready to give consent for participation in the study.

## 2.6. Exclusion criteria

- 1) Patients having Acne due to systemic disorders like Acromegaly, Diabetes mellitus, Cushing syndrome, Androgen secreting tumors, etc.
- 2) Patients on medications like antitubercular drugs, anticonvulsants, lithium, corticosteroids, androgenic steroids, and hormonal therapy.

## 2.7. Method of selection

Subjects per inclusion criteria were selected, and their Prakriti was assessed by a validated questionnaire and using the online Prakriti Parikshana app.

## 2.8. Sample size

The sample size is 100 as it is a short-term project of final year students and conducted quickly.

## 2.9. Statistical methods

Data collected was analyzed by using the chi-square statistical method.

## 3. OBSERVATION AND RESULTS

A total of 100 patients, as per inclusion criteria, were included in the study. They were interviewed, and Prakriti was assessed by using predesigned validated questionnaires. The data collected was analyzed, and the result was obtained.

**Table 2: Distribution of subjects as per age**

Age In Years	No. of Patients
18-22	46 (46%)
23-26	34(34%)
27-30	20(20%)
Total	100(100%)

The above table shows no. of patients under different age groups. 46 patients belong to the 18- 22 years, 34 patients belong to the 23 to 26 years, and 20 patients belong to the 27 to 30 years age group.

**Table 3: Distribution of subjects as per sex**

Sex	No. of Patients
Male	38(38%)
Female	62(62%)

In the present study, 38% were male, and 62% were female.

**Table 4: Distribution of subjects as per the number of pidika.**

Number of pidikas	Number of patients with percentage
5-10	34
11-15	46
More than 15	20

In the present study, 34 patients had 5-10 pidika, 46 patients had 11-15 pidika, and 20 patients had more than 15 pidika.

<b>Table 5: Distribution of patients as per the type of diet</b>	
<b>Type of diet</b>	<b>No of patients</b>
Vegetarian	36
Mixed	64

The above table shows the dietary habits of the patients consuming vegetarian and mixed diets. 36 patients were taking a Vegetarian diet, and 64 were taking a mixed diet.

<b>Table 6: Distribution of subjects as per consumption of excess junk food</b>	
<b>Consumption of excess junk food</b>	<b>No of patients</b>
Yes	72
No	28

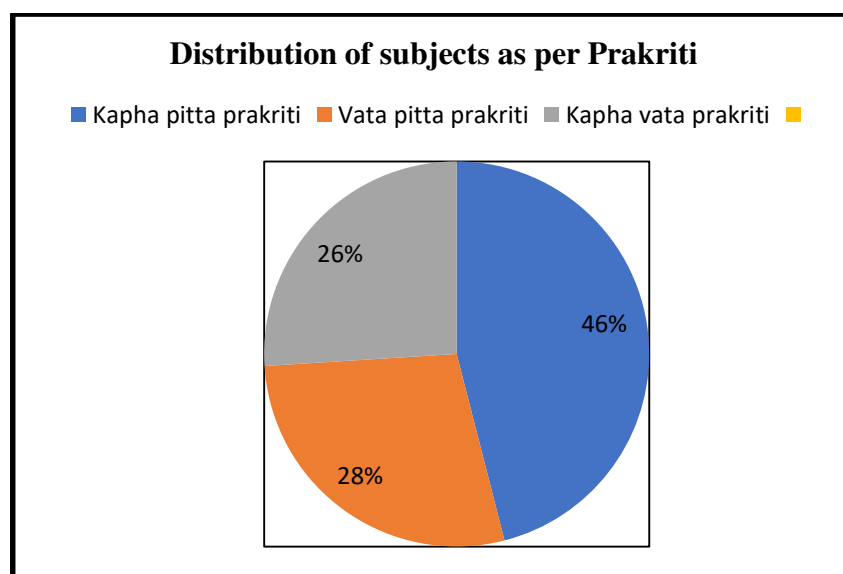
In the present study, 72 patients had a habit of junk food consumption, and 28 had no such type of habit.

<b>Table no 7. Distribution of subjects as per bowel habits (Constipation)</b>	
<b>Bowel habits (Constipation)</b>	<b>No. of patients</b>
Absent	46
Present	54

The above table shows the bowel habits (Constipation) of patients. 46 patients had normal bowel, whereas 54 had constipation

<b>Table 8: Distribution of subjects as per Prakriti (Body constitution)</b>	
<b>Prakriti</b>	<b>Number of patients</b>
Kapha Pittaja	46(46%)
Vata Pittaja	28(28%)
Kapha Vataja	26(26%)

The above table no 8 shows the percentage of students according to Prakriti. 46% of patients had Kaphapittaja Prakriti, 28% had Vatapittaja Prakriti, and 26% had Kaphavataja Prakriti.



**Fig 1: Distribution of subjects as per Prakriti**

(Figure no 1) showing the diagrammatic correlation between Prakriti and the percentage of patients having Tarunya pidika. It showed that a maximum of 46% had Kaphapitta Prakriti.

<b>Table 9: Cross and independent Distribution of features among different Dosha Prakriti</b>			
<b>Feature Class</b>	<b>Kapha</b>	<b>Pitta</b>	<b>Vata</b>
Face Features	Yes	Yes	No
Skin Features	Yes	Yes	No
Color of skin	Yes	No	Yes
Nutritional status	Yes	Yes	No

Appetite	Yes	No	No
Thirst	No	Yes	No
Bowel movements	Yes	No	Yes
Involuntary movements	No	No	No
Intolerance to heat or cold	Yes	Yes	Yes

*"Yes" means the features present in individual Dosha class*  
*"No" means the features not present in individual Dosha class*

#### 4. DISCUSSION

Yauvan Pidika, or Acne vulgaris, one of the most common dermatoses, affects the beauty and appears during puberty and early adulthood.<sup>25</sup> It is known as Mukhadushika or Yauvan pidika, and it manifests on the faces of adolescents as a facial eruption resembling a Shalmali thorn. "Yauvan Pidika" was described by Sushruta under the term "Kshudra Roga".<sup>26</sup> Yauvan Pidika typically appears on the face. It is a widespread health problem that impacts adolescents' social, emotional, and physical well-being.<sup>27</sup> Acne is one of the most common skin disorders that dermatologists treat. Although Acne can affect anyone at any age, it most usually affects teens. Ayurveda Samhita, like Sushruta Samhita, Charaka Samhita, Ashtanga Hridaya, Bhava Prakash, Chakra Datta Tika, Yoga Ratnakar, and Sharangdhara Samhita, describes Tarunypidika, which is identical to acne vulgaris mentioned in modern literature. After review, it was observed that there is a similarity in etiopathogenesis, clinical features, and treatment of Yuvanpidika and Acne vulgaris in both sciences. Adolescent age, excessive consumption of sweet and sour, difficult-to-digest, greasy, salty, spicy food, milk and milk products, meat, and alcohol are a few of the major contributing factors. Yuvanpidika is also influenced by environmental and behavioral factors, such as repressing instinctual urges, sleeping irregularly, fasting, and being exposed to too much sun, dust, and pollution.<sup>28-29</sup> Yuvanpidika can be caused by psychological factors like extreme stress, rage, and worry. As per Acharya Vagbhata Shalmali, kankara pidika, Saruja (Pain), Ghana (hard, solid, indurated), and Medogarbata are all signs of Dosha dominance, as are accompanying symptoms like Kandu (Kapha), Strava (Kapha), and Daha (Pitta).<sup>30</sup> Dosha is a crucial factor in the development of any disease. Prakriti determines the dominance of each Dosha in a specific person. So, depending on the prevalence of the Dosha, an individual of a particular Prakriti may be susceptible to certain ailments. Thus, assessing Prakriti is crucial to determining a person's vulnerability to developing a specific disease.<sup>31</sup> In the present study, it was found that 46% of patients were in the 18 to 22 years' age group; 34% belonged to the 23 to 26 years age group, and 20% were in the 27 to 30 years age group. Hence, it is concluded that the 18 to 22 years' age group is more prone to Tarunya pidika according to the present study (table no.2). In this study, it was found that 62% were female. Thus it can be stated that females are prone to Tarunya pidika (table no.3). Ambhore and Misar Wajpeyi et al., in their clinical study of Yuvanpidika, stated more incidences of Yuvanpidika in the 16-25 age group and more in females (67%) which supports the result of the present study. As per Acharya Charak, this age is the development stage of Dhātu, which produces more mala facilitating the production of Yuvanpidika.<sup>32</sup> According to modern science, an imbalance of hormones, particularly androgen, is one of the major causes of excess sebum production by stimulating the sebaceous glands.<sup>33</sup> In this study, the number of females (67%) was higher than males. As per the literature, it is observed that

Yuvanpidika is more common and severe in males than in females due to androgenic activity.<sup>34</sup> Barad A, Roy KB, and Soni H, in their study on Yuvanpidika, found more incidence in males than 70%, which is not similar to this study.<sup>35</sup> As per the number of pidika, it was observed that a maximum of 46% of subjects had 11-15 pidika. Thus moderate Yuvanpidika was found in the majority of subjects (table no.4). In the present study, the majority of subjects that is 64%, had mixed dietary habits (table no.5). It might be due to excessive spicy and oily consumption which is one of the causative factors of Yuvanpidika. In their clinical study on Mukhdushika, Rathod J found more subjects having mixed dietary habits, which is similar to the result of the present study.<sup>36</sup> Regarding Dietary habits (table no.6), most subjects (72%) consumed junk food, fried items, bakery products, and chocolates. All these are the contributing factors for Yuvanpidika. As per bowel habits (constipation), it was observed that 54% of subjects had constipation (table no 7), also mentioned as one of the causative factors of Yuvanpidika. In this study, it was found that a maximum that is 46% of patients had Kapha pittaja Prakriti followed by 28% had Vatapittaja Prakriti and 26% had Kaphavataja Prakriti (table no 8) and (Figure 1). Thus it is observed that Yuvanpidika occurs more in subjects having Kaphapittaja Prakriti. Mishra et al. conducted a clinical study to evaluate the efficacy of Dhanyakadi Yoga lepan in Yuvana Pidika in which they found more incidence of 53% of Yuvanpidika in Pittakaphaja Prakriti.<sup>37</sup> Pampaniya PV conducted a research study on the effect of Shalmalyadi lepa and Guduchyadi vati in the management of Yauvanapidika (Acne) in which they noted a maximum (68%) patients having Pitta Kapha Prakriti.<sup>38</sup> Hence, Pitta and Kapha are involved in Yuvanpidika's susceptibility, which is comparable with the results of this research. Kulkarni EG conducted a Comparative Clinical research study to evaluate the efficacy of Liquid Rubyclin versus Mahamanjishthadi Kashay in the treatment of Mukhdushika (Acne Vulgaris) in which they observed that the maximum subjects (31.66%) having Kaphapittaja Prakriti which supports results of this study.<sup>39</sup> The Kapha Dosha is primarily implicated in the pathophysiology of Yuvanpidika, according to Ayurvedic literature. It leads to the observation that Tarunya pidika is more common in Kaphapittaja Prakriti. Aggravated Pitta affects the blood or Rakta dhātu. The contaminated blood affects the epidermis and encourages overactive sebaceous gland oil production. The Kapha quality is sticky. An exacerbated Kapha makes the sebaceous glands' oil greasier and sticky. Hence, the development of thick sebaceous plugs in the skin's pores and hair follicles leads to Acne. Hence, Kapha, Pitta, and Rakta are crucial factors in developing Tarunya pidika or Yauvan pidika.<sup>40</sup>

#### 5. CONCLUSION

According to the study's findings, Yuvnpidika is more common in female adolescents between the ages of 18 and 22 and in those who eat various foods, including spicy, oily, and junk food. In terms of Prakriti, it was observed that

those with Kaphapittaja Prakriti are more likely to manifest Yuvanpidika. Hence, from the results obtained, Prakriti is associated with the occurrence of Yuvanpidika.

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## 7. AUTHORS CONTRIBUTION STATEMENT

Ms. Vaishnavi Ojha conceptualized the idea for conducting the study and collected data. Dr. Sadhana Misar Wajpeyi, guided in conducting the study and helped to prepare the manuscript.

## 8. CONFLICT OF INTEREST

Conflict of interest declared none.

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