

Incidence of psychological stress as an etiological factor of skin disorders- A review through Ayurvedic clinical researches

¹ Dr. Rahul Shingadiya*, ² Dr. Prashant Bedarkar, ³ Prof. BJ Patgiri, ⁴ Prof. PK Prajapati,
⁵ Dr. Yogesh Manani

¹Asst. Prof, Dept. of Rasashastra and Bhaishajya Kalpana including drug research, I.P.G.T. & R.A., G.A.U., Jamnagar. Email id:-shingadiyarahul@yahoo.in

²Asst. Prof, Dept. of Rasashastra and Bhaishajya Kalpana including drug research, I.P.G.T. & R.A., G.A.U., Jamnagar. Email id:-drprashantbedarkar@gmail.com

³Professor and Head, Dept. of Rasashastra and Bhaishajya Kalpana including drug research, I.P.G.T. & R.A., G.A.U., Jamnagar. Email id:-patgiri124@gmail.com

⁴Dean and Professor, Dept. of Rasashastra and Bhaishajya Kalpana including drug research, All India Institute of Ayurveda, New Delhi. Email id:-prajapati.pradeep1@gmail.com

⁵ Lecturer, Dept. of Streeroga and Prastitantra, Shri O.H. Nazar Ayurved College, Surat, Gujarat. Email id:-vd.yogesh@gmail.com

Abstract

Background– Life style, Speed and the prime demands of present era lead to psychological stress, which ultimately causes the mental or physical diseases. In Ayurveda and contemporary sciences, stress is found as one of the major aggravating factors for various diseases including skin disorders. A study about the involvement of psychological stress in the pathogenesis of the skin diseases is the exact need of the hour.

Material and Method- Dissertation works carried out on skin disorders in department of RS and BK were screened and available classical literature and articles were reviewed to find out the role of stress in skin disorders. **Results**-Among 30 dissertation works, stress was found as an aggravating factor for *Ekakushtha* (psoriasis), *Vicharchika* (eczema), *Shvitra* (vitiligo) and *Yauvanpidika* (acne) and other *Kshudra Kushtha* (common skin disorders). Various factors such as nature of work, socio-economical state etc affect the level of stress.

Conclusion- There is a definite role of psychological stress in manifestation and progress of skin disorders.

Key Words: Acne, Eczema, *Ekakushtha*, Psoriasis, *Shvitra*, Vitiligo

Introduction

Ayurveda has defined the health as a combined state of *Sharira* (body), *Indriya* (senses), *Mana* (psyche) and *Atma* (soul).¹ *Manasa-bhava* (psychological factors) are equally given the importance for maintaining health. It has been claimed that healthy, strong and properly controlled psychological factors are able to cure several physical diseases. On the other hand, psychological factors can give rise to physical diseases.² Skin disorders are known by a term *Kushtha* in Ayurveda. In etiological factors of the disease, *Bhaya* (fear), *Santapa* (irritation), *Pap Karma* (sinful deeds) are mentioned in Ayurveda classics, which suggests the role of psychological factors in pathogenesis of various skin diseases.³ Contemporary medical sciences have also accepted the role of stress in pathogenesis and aggravation of the skin disorders.⁴ They have defined stress as an abnormal or extreme psychological and physiological adjustment to the adverse effects of the environment, which ultimately becomes responsible for the diseased condition.⁵ Psyche is an absolute term of the subjective aspects of the mind as of the individuals.

It is usually defined as the part of person which consists of thoughts feeling and function of willing. Impairment of these processes result in the psychological disorders. Ayurvedic fundamentals have established a close association with psyche and skin. Skin is the sensory organ of touch which is spread all over the body. Sense perceptions of the sensory organs are produced as a result of the combination of the sense faculties, their objects, the mind and the soul. So, any imbalance in the mind through psychological stress affects the skin and may be resulted into skin diseases.⁶ This Ayurvedic concept of psychological stress should be revalidated and its role in pathogenesis of various skin diseases should be established.

Hence, this attempt has been carried out to congregate such evidence of incidences indicative of psychological involvement in manifestation of skin disorders through literary review. It may be also beneficial for an easy, complete treatment profile and to avoid the recurrence of the diseases.

Materials and Methods

Dissertation works carried out on skin disorders in department of Rasa Shastra and Bhaishjya Kalpana (RSBK) of Institute for Post Graduate Teaching and Research in Ayurveda (IPGT & RA) were screened. Special Performa was prepared in which etiopathological factors inducing stress were included. Available classical literature and articles were reviewed to find out the Ayurvedic and Contemporary view regarding role of stress in five skin disorders, i.e. *Ekakushtha* (psoriasis), *Vicharchika* (eczema), *Shvitra* (vitiligo), *Yauvanpidika* (acne) and *Kshudra Kushtha* (common skin diseases). Contemporary researches were searched through online search engines and tried to correlate them with present results.

Results and Discussion

Total 30 dissertation works were found on five major skin diseases. (Table 1) The data of total 1419 patients were screened.

Age group

Patients in above cited studies were included from 16 to 60 years. 90% of the patients were from younger age (16-30Years) in Acne. Majority of the patients were from middle age (31-45 years) in Vitiligo, while in Eczema, majority were from elder age (46-60 years). In Psoriasis and Common skin diseases (*Kshudra Kushtha*), majority of the patients were from elder and middle age. (Image 1) Proclivity of incidences of these diseases is towards advanced age which may be correlated with comparatively more possibility of increasing stress in advanced age.

Sex

In Acne, female ratio was slight higher, while in all rest diseases, male ratio was higher. In Asia and European continents, Acne have a tendency to affect females with a male to female ratio about 1/1.1-1.25.^{7,8} Yi-Chien Yang et al. have concluded that Acne and gender, independently and jointly, are associated with major depression and suicide. Special medical support should be warranted in females with acne for the risk of major depression and suicide.⁹ (Image 2)

Socio- economical status

In all the groups, maximum patients were from middle socio- economical class. Patients with poor socio- economical status were in between 8 to 28%. As the hospital is government institute and treatment is provided without any cost, it is affordable for middle and poor patients. Patients from upper socio- economical state were in between 10 to 15% that shows that Ayurveda treatment is also attracting the rich people as well. (Image 3)

Chronicity

In all groups of the skin diseases, chronicity was found high and almost double than acute stage of the diseases. This is suggestive of chronic nature of these skin disorders. It also indicates that, majority of the patients choose Ayurvedic treatment in chronic stage. (after taking treatment from other medical sciences.) Chronicity moderated the anxiety-stress relationship. Suzanne C. has been reported that, acute stress affected primarily enumerative measures, whereas stressors of longer duration affected primarily functional measures of immune system.¹⁰ A Somatic disease may get super imposed with another Psychic disease. Such combination of diseases belonging to one group may also result in the combination with diseases of another group when left untreated for long time.¹¹ (Image 4)

Site of the lesions

In Acne, 100% lesions were in exposed area, while in Vitiligo maximum patients were having lesions on exposed part of the body. In other three groups, ratio of exposed and covered lesions was almost equal. Lesions in exposed part of the body may be responsible for stress. Due to exposed lesions the appearances are altered and the patient became more conscious towards it. One third of the adults having acne admit to feeling embarrassed or self conscious because of their skin.¹² (Image 5)

Psychological factors

Psychological factors were diagnosed by following criteria. Anxiety is an apprehension over what's about to happen and what could happen in the future, worried thoughts, or a belief that something could go wrong. Tension refers to mental strain or excitement. Mental tension was diagnosed by worry, feeling tense or nervous, poor concentration while physical tension was diagnosed by restlessness, headaches, tremors, inability to relax. Depression was characterised by symptoms like low or sad mood, loss of interest or pleasure Disturbed sleep and appetite, guilt or loss of self-confidence, suicidal thoughts or acts, fatigue or loss of energy or decreased libido, poor concentration, agitation or slowing of movement or speech. Sentiment is organized and socialized

feeling; it's developed out of its only intuitive state by deep thought. It was diagnosed by extremely or extravagantly sadness or tenderness.^{13,14}

Among four psychological factors, Anxiety and tension were found more in all groups. Anxiety and depression were found more in the patients of Acne. All the patients of the group were adolescent or teen agers. In this age, consciousness towards face appearance is more and psychological factors affect them more due to hormonal changes. (Image 6)

Mental strength (Threshold of mental stability)

The tolerance and temperament of the patient is most important factor which is termed as *Satva* in Ayurveda. In all groups, maximum patients were found moderate (*Madhyama*) degree of mental strength. Even the effect and degree of the emotional hazards also greatly depends upon mental-strength (*Satvabala*) of the patient.¹⁵ The experience, tolerance and expression of pain are solely dependent upon *Satvabala*. (Image 7)

Factors affected by psychological stress

The skin disease itself can induce a secondary stress for the patient, influencing its quality of life. Sleep, addictions, bowel habits, indigestion, etc are the factors which are vulnerable to get affected by the psychological stress. Disturbance of these factors indicates the involvement of psychological stress.

Sleep

Disturbed sleep was found in between 28 to 41% of the patients while insomnia was found in between 5 to 27%. In Eczema group, sleep was not found included in assessment criteria. Sleep is described as one among the three *Upastambha* which are the essential factors for healthy life. Chronic sleep disturbance can be seen as an unspecific state of chronic stress, which affects immune functions and general health.¹⁶ *Acharya* Charaka has said that when the *Mana* with sensory and motor organs is exhausted and they dissociate themselves from their objects, then the individual sleeps.¹⁷ Induction of sleep is a result of detachment of *Mana* from sensory and motor phenomenon. In the event of the exhaustion of the *Mana*, the individuals also get exhausted because action of individuals is dependent on that of the *Mana*, so when *Mana* dissociates itself from its objects, individuals also dissociate themselves from their objects. The sensory and motor organs are not active because of the inaction of individuals. (Image 8)

Addiction

Tea was noted as a major addictive in all groups followed by tobacco and smoking. Addiction of alcohol was also found in minute percentage. Psoriasis was found clearly associated with increased alcohol consumption and smoking.¹⁸ Overeating, smoking, alcohol and other bad habits are adopted by the people knowingly or unknowingly to cope with stress.¹⁹ (Image 9)

Patho- physiology of skin diseases according to Ayurveda

Various psychological factors (*Manasika Bhava*) have been mentioned in Ayurveda classics and their effects on *Dosha* as elevation (*Vrudhdhi*) or decrease (*Kshaya*) are described. *Vata* gets vitiated by *Kama* (sexual urges), *Shoka* (sadness) and *Bhaya* (fear) while *Pitta* by *Krodha* (anger).²⁰ Anxieties and tension of an anxious person leads to vitiation of *Rasavaha Strotasa* (biological channels of the body for fluid transportation).²¹ All three *Doshas*; i.e. *Vata*, *Pitta* and *Kapha* along with four *Dhatus* i.e. *Twaka* (skin), *Rakta* (blood), *Mamsa* (muscles) and *Lasika* (body fluid) are found involved in pathogenesis of all Skin diseases.²² Thus, psychological factors spoil the *Dosha* and vitiated *Dosha* spoils the *Dhatu* and then together they generate the skin diseases.

Skin is spread all over the body, so through it *Mana* also keeps contact with external environment.²³ Ayurveda considers Mind and Body as two substrata for the manifestation of diseases.²⁴ The body and the mind have a separate set of etiopathological agents and hence all the diseases are categorized under two basic groups Somatic and Psychological. However, it is difficult to schedule such a impermeable compartment for the disease grouping. The mind and body together with the sense organs are the sites of manifestation of all miseries and happiness.²⁵ Body perceives miseries and happiness through *Indriya* (sense organs) and by getting stimulus from *Mana*.

Conclusion

Psychological Stress is a very important factor to be taken in consideration as precipitating or aggravating factor in different skin conditions. Age, chronicity, site of lesions and mental strength are found as stress affecting factors; while sleep and addiction were found as stress affected factors. We should concentrate on both the factors affecting and affected by stress and their impact on patients' life for proper treatment of the skin disorders.

References

- [1] Charaka Samhita, Agnivesha, Ayurveda Dipika commentary, Chakrapani, Sutra Sthana, Dirghajivitiyam adhyaya (1:42),P.8, Chaukhambha Surbharati Prakashana, Varanasi, 2011
- [2] Charaka Samhita, Agnivesha, Ayurveda Dipika commentary, Chakrapani, Sutra Sthana, Shadvirechana shatashritiyam adhyaya (4:36),P.322, Chaukhambha Surbharati Prakashana, Varanasi, 2011
- [3] Charaka Samhita, Agnivesha, Ayurveda Dipika commentary, Chakrapani, Sutra Sthana, Naveganndhariyam adhyaya (7:4-8),P.450, Chaukhambha Surbharati Prakashana, Varanasi, 2011
- [4] Manolache L, Petrescu-Seceleanu D. Stress involvement as trigger factor in different skin conditions. *World J Dermatol* 2013; 2(3): 16-26
- [5] John Leach. Psychological factors in exceptional, extreme and torturous environments. *Extrem Physiol Med* 2016; 5:7; p. 1-15
- [6] Charaka Samhita, Agnivesha, Ayurveda Dipika commentary, Chakrapani, Sutra Sthana, Indriyopkramaniyam adhyaya (8:14), P.57, Chaukhambha Surbharati Prakashana, Varanasi, 2011
- [7] W. K. Fung and K. K. Lo, "Prevalence of skin disease among school children and adolescents in a student health service center in Hong Kong," *Pediatric Dermatology*, vol. 17, no. 6, pp. 440–446, 2000
- [8] M.-C. Tsai, W. Chen, Y.-W. Cheng, C.-Y. Wang, G.-Y. Chen, and T.-J. Hsu, "Higher body mass index is a significant risk factor for acne formation in schoolchildren," *European The Journal of Dermatology*, vol. 16, no. 3, pp. 251–253, 2006
- [9] Yi-Chien Yang et al. Female Gender and Acne Disease Are Jointly and Independently Associated with the Risk of Major Depression and Suicide: A National Population-Based Study. *BioMed Research International* Volume 2014, P. 7
- [10] Suzanne C., Gregory E. Psychological Stress and the Human Immune System: A MetaAnalytic Study of 30 Years of Inquiry. *Psychol Bull.* 2004 July; 130(4): 601–630.
- [11] Charaka Samhita, Agnivesha, Ayurveda Dipika commentary, Chakrapani, Vimana Sthana, Roganik Vimanam adhyaya (6:9), P.254, Chaukhambha Surbharati Prakashana, Varanasi, 2011
- [12] Kilkenny M,Merlin K, Plunkett A, Marks R. The prevalence of common skin conditions in Australian school students, 3: Acne vulgaris. *Br J Dermatol.* 1998; 139:840-5
- [13] Joanne Hart. The difference between anxiety, stress and tension. *Hello Doctor* 2016. (Available from <https://www.hellodoctor.co.za/the-difference-between-anxiety-stress-and-tension> on 04 September 2017)
- [14] Diagnostic and Management Guidelines for Mental Disorders in Primary Care: ICD-10 Chapter V Primary Care Version. WHO/Hogrefe & Huber Publishers, Gottingen, Germany, 1996
- [15] Lev Pavlovsky, Alon Friedman Pathogenesis of Stress-Associated Skin Disorders: Exploring the Brain-Skin Axis. In: Tur E (ed): *Environmental Factors in Skin Diseases.* *Curr Probl Dermatol.* Basel, Karger, 2007, vol 35, p. 136–45
- [16] McEwen BS. Sleep deprivation as a neurobiologic and physiologic stressor: allostasis and allostatic load. *Metabolism.* 2006; 55: S20–S23
- [17] Charaka Samhita, Agnivesha, Ayurveda Dipika commentary, Chakrapani, Sutra Sthana, Indriyopkramaniyam adhyaya (8:17),P.58, Chaukhambha Surbharati Prakashana, Varanasi, 2011
- [18] Finlay AY, Coles EC. The effect of severe psoriasis on the quality of life of 369 patients. *Br J Dermatol* 1995;132:236-44
- [19] Krantz, D. S., Whittaker, K. S., & Sheps, D. S. (2011). Psychosocial risk factors for coronary artery disease: Pathophysiologic mechanisms. In Allan R., Fisher, J. (Eds.), *In Heart and Mind: Evolution of Cardiac Psychology*, p. 91–113
- [20] Charaka Samhita, Agnivesha, Ayurveda Dipika commentary, Chakrapani, Chikitsa Sthana, Jwara Chikitsa adhyaya (3:115), P.407, Chaukhambha Surbharati Prakashana, Varanasi, 2011
- [21] Charaka Samhita, Agnivesha, Ayurveda Dipika commentary, Chakrapani, Vimana Sthana, Sroto Vimanam adhyaya (5:13), P.251, Chaukhambha Surbharati Prakashana, Varanasi, 2011
- [22] Charaka Samhita, Agnivesha, Ayurveda Dipika commentary, Chakrapani, Chikitsa Sthana, Kushtha Chikitsa adhyaya (7:9-10), P.450, Chaukhambha Surbharati Prakashana, Varanasi, 2011
- [23] Charaka Samhita, Agnivesha, Ayurveda Dipika commentary, Chakrapani, Sharira Sthana, Katidha Purushiyam adhyaya (1:30), P.289, Chaukhambha Surbharati Prakashana, Varanasi, 2011
- [24] Charaka Samhita, Agnivesha, Ayurveda Dipika commentary, Chakrapani, Sutra Sthana, Dirghajivitiyam adhyaya (1:45), P.11, Chaukhambha Surbharati Prakashana, Varanasi, 2011
- [25] Charaka Samhita, Agnivesha, Ayurveda Dipika commentary, Chakrapani, Sutra Sthana, Dirghajivitiyam adhyaya (1:135), P.16, Chaukhambha Surbharati Prakashana, Varanasi, 2011

Table 1: Details of the research works carried out on Skin disorders

Sr No	Skin disease	No. of Dissertat ion	Details of dissertat ion	Total Patien ts
1	<i>Yauvanpidika</i> (Acne)	2	Rameshchandra A <i>et al.</i> , Amrutiya A <i>et al.</i>	79
2	<i>Eka-kushtha</i> (Psoriasis)	7	Barvalia R <i>et al.</i> , Zala U <i>et al.</i> , Vaghmashi R <i>et al.</i> , Shrimannarayan, K <i>et al.</i> , Umrethiya B <i>et al.</i> , Agrawal S <i>et al.</i> , Mitra S <i>et al.</i>	502
3	<i>Vicharchika</i> (Eczema)	7	Yeriswamy H <i>et al.</i> , Thaker AV <i>et al.</i> , Thaker H <i>et al.</i> , Mishra DK <i>et al.</i> , Mashru M <i>et al.</i> , Druve K <i>et al.</i> , Pandya K <i>et al.</i>	339
4	<i>Kshudrakushtha</i> (Common Skin diseases)	9	Acharya JG <i>et al.</i> , Harwlkar RJ <i>et al.</i> , Swayam Prakashma K <i>et al.</i> , Anadakat HA <i>et al.</i> , Mehta N <i>et al.</i> , Dhruve K <i>et al.</i> , Pilai KU <i>et al.</i> , Mehta N <i>et al.</i> , Yadav P <i>et al.</i>	247
5	<i>Shvitra</i> (Vitiligo)	5	Agraval U <i>et al.</i> , Zankhana G <i>et al.</i> , Goyal M <i>et al.</i> , Jadav HR <i>et al.</i> , Shingadiya RK <i>et al.</i>	252
	Total	30		1419

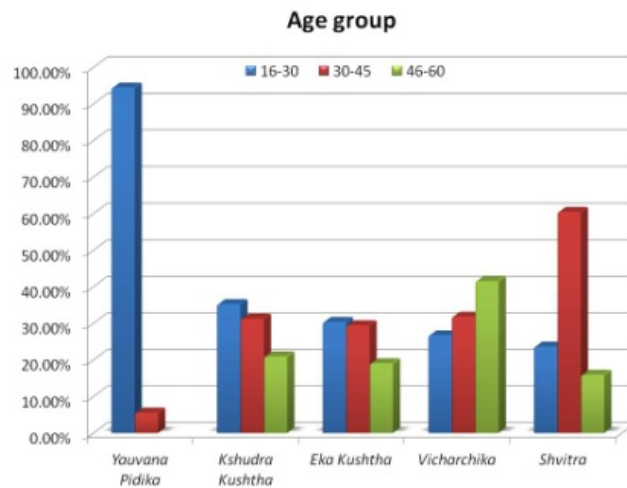


Image 1

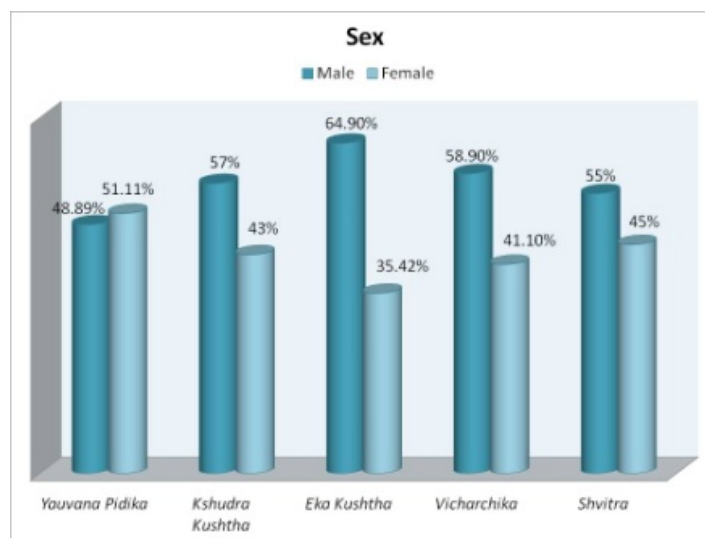


Image 2:

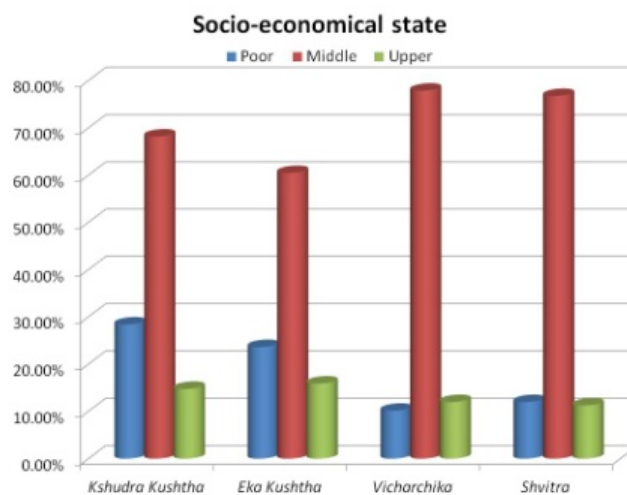


Image 3

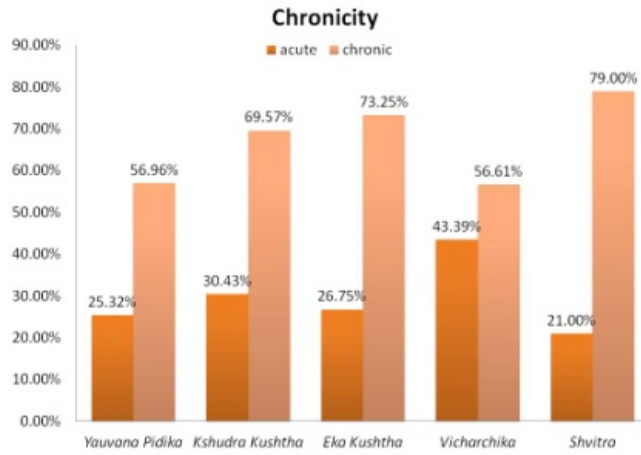


Image 4

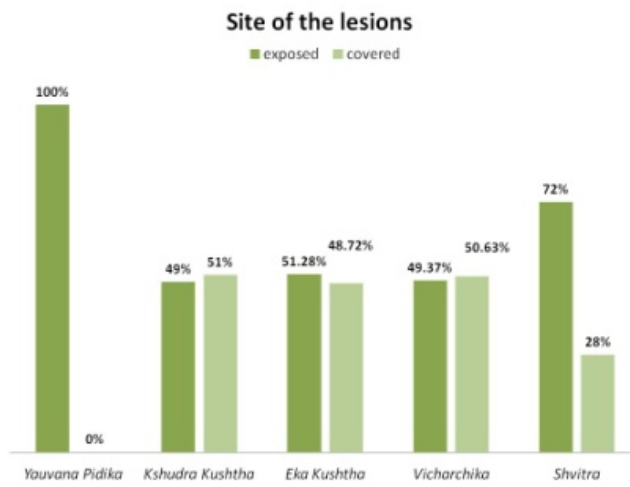


Image 5

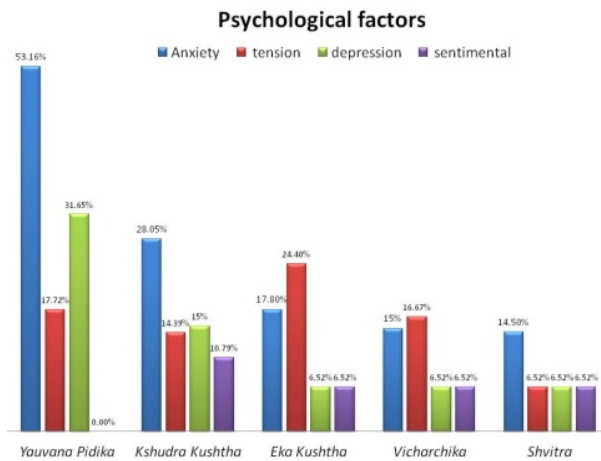


Image 6

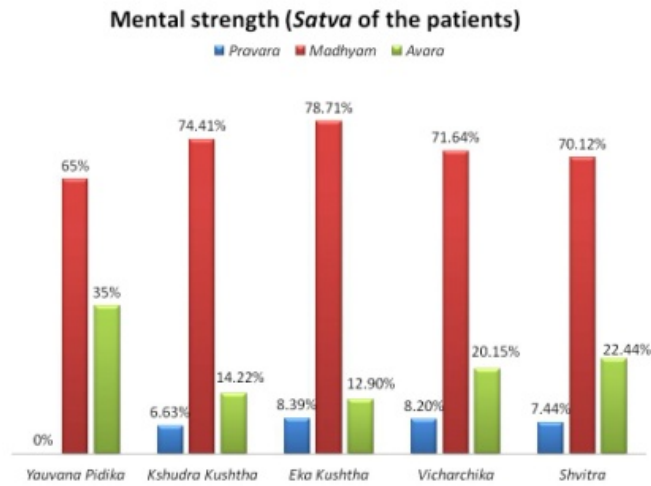


Image 7

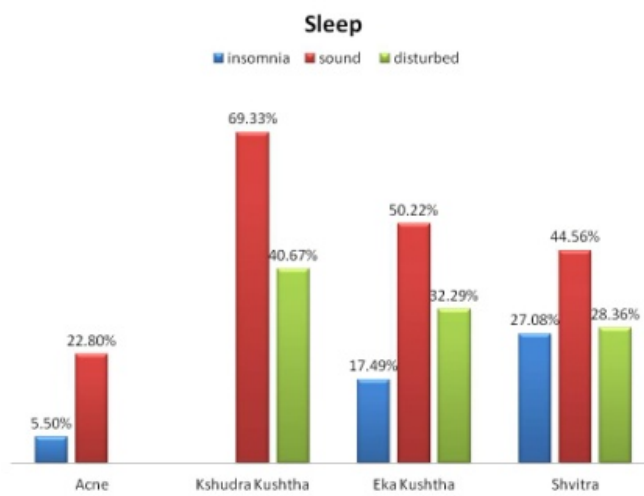


Image 8

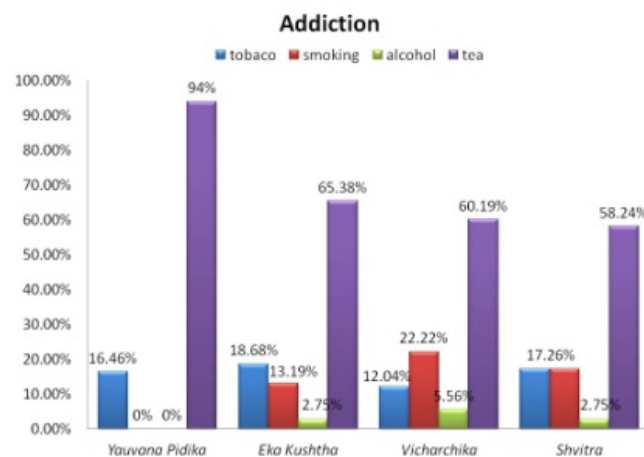


Image 9