



ASSESSMENT OF THE EFFECT OF, “NIDRA” WITH SPECIAL REFERENCE TO KRUSHATA IN I.T. WORKERS

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Article Received on 19/04/2018

Article Revised on 10/05/2018

Article Accepted on 01/06/2018

ABSTRACT

Sleep is one of the natural instincts of the body. Today, due to changing lifestyle & competitive atmosphere in the world, a man has to work for several hours. The demarcating line between day & night is seen to blur away. Ayurveda explains that improper sleep leads to ‘Krushata’ (leanness). Krushata, if not treated in time can get transformed into Atikrusha condition which has many side-effects. But, working at night also is the need of today’s world for sustaining in the competition or fulfillment of many needs of a family. It is necessary in some areas of IT, to work at whole night. Such workers can’t sleep at night. These people are at higher risk of the diseases arising due to improper sleep. In present study, only night workers were selected to observe the effect of suppression of sleep at night (ratri-jagarana) on their body with special reference to the symptom ‘Krushata’. BMI is the convenient & reliable indicator for assessment of Krushata, which is recommended by W.H.O. Hence BMI was used as a tool for assessment of ‘krushata’. Along with krushata many other symptoms arising due to ratri-jagarana were also studied in this study. Sleep has a great clinical importance. One’s health status can be accessed from nature of his/her sleep. Hence, staying awake at night (Ratri-jagarana) should always be avoided. This study was an attempt, to observe the effect of “Nidra” with special reference to symptom ‘Krushata’ in night shift IT workers.

KEYWORDS: Improper sleep, Krushata, BMI.

INTRODUCTION

Sleep is one of the natural instincts of the body just as food & water. It is a basic need of every human being. Our Acharya recognized the natural constructive power of sleep. Charakacharya explained ‘Nidra’ as one of the three pillars that support life. Proper Aahar, Nidra & Brahmacharya support body as pillars support a house. Hence they are called as “Trayopastambha”.^[1] According to Kashyapa, getting good sleep at proper time is one of the characteristic of a healthy man.^[2] Today due to changing lifestyle & competitive atmosphere in the world, a man has to work for several hours. Hence, the demarcating line between day & night is seen to blur away. ‘Manu’ the great law maker divided 30 muhūrta periods in day & night.^[3] The daytime being intended for activities & night for rest and repose. So, one should have proper sleep at every night to give rest to body as well as mind. Merits & demerits of proper & improper sleep are described in one sutra by Acharya Charaka.^[4] This sutra explains that improper sleep leads to ‘Krushata’. Krushata have its own demerits. Krusha person have less capacity to tolerate extreme environmental changes, thirst, hunger, medicine,

exertion, etc. He becomes more susceptible to many diseases. It is also said that, atikrusha (lean) & atisthul (obese) person always remain unhealthy.^[5] Acharya Charaka included atikrusha person in group of 8 undesirable persons from the treatment point of view.^[6] Krushata, if not treated in time can get transformed into Atikrusha condition which has many side-effects.

In present era, along with other qualifications, one’s personality carries a great importance in career development, which is reflected by one’s body built. Ayurveda also explained about “a person to be praised”.^[7] Such person is the one who has *proper body built*, proper health, strength, good sense organs. He can tolerate hunger, thirst, excess exertion, cold weather, etc. This gives importance of proper body built. But, working at night also is the need of today’s world for sustaining in the competition or fulfilment of many needs of a family. It is necessary in some areas of IT, to work at whole night. Such workers can’t sleep at night & thus their sleep gets disturbed. These people are at higher risk of the diseases arising due to improper sleep. Some IT workers work at daytime, while some have to work at

night. In present study, only night workers were selected to observe the effect of suppression of sleep (ratri-jagarana) on their body with special reference to the symptom 'Krushata'. BMI is the convenient & reliable indicator for assessment of Krushata, which is recommended by W.H.O.^[8] Thus, it is a universally accepted parameter. Hence BMI was used as a tool for assessment of 'krushata'. Along with krushata many other symptoms also arise due to suppression of sleep such as; headache, body ache, yawning, stress on eyes, exhaustion^[9] were also studied in this study.

Sleep has a great clinical importance. One's health status can be accessed from nature of his/her sleep, which has already been stated in Ayurveda.^[10] Having proper sleep is also one of the signs of longevity.^[11] Lifestyle decides a lot about your health. Every action has an equal & opposite reaction. If someone does not sleep at proper time & for adequate time, he will suffer from its side effects. Hence, staying awake at night (Ratrijagarana) should always be avoided. So, this study is an attempt, to observe the effect of "Nidra" (Ratri-jagarana) with

special reference to the symptom 'Krushata' in night shift IT workers.

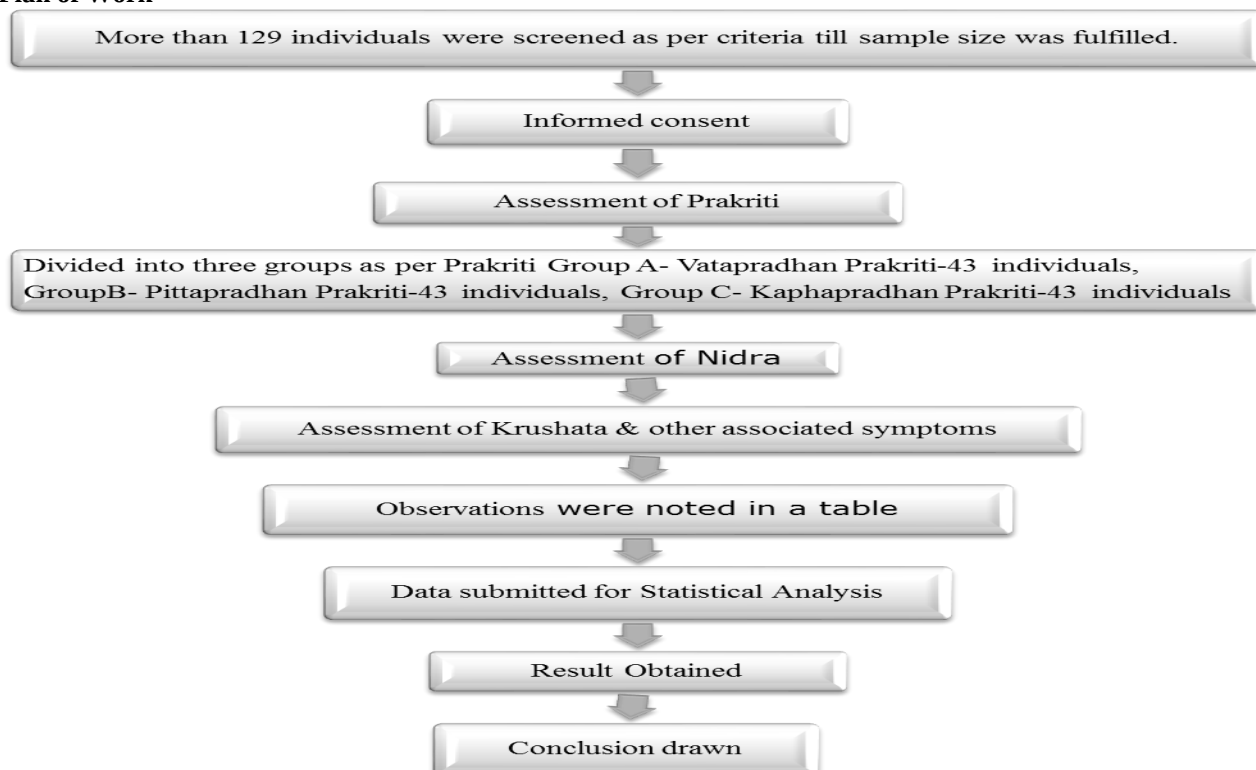
Need & Purpose of the study

1. Revalidation of the reference of Ayurvedic literature which states that, improper sleep (ratri-jagarana) causes 'krushata'
2. To provide statistical data of the symptom 'krushata' & other health problems arising due to improper sleep (ratri-jagarana) in IT workers who work at night shifts, along with their variations according to Prakriti.

METHODOLOGY

Only vegetarian & apparently healthy individuals of both genders, between the age group 18-40 years, performing 10-15 night duties per month (minimum since 6 months) at a well known international BPO company were selected for this study. The BPO Company where study was carried out allows only males for night shifts. Hence only males were selected for the study. Individuals performing regular exercise & having any kind of disease were excluded.

Plan of Work

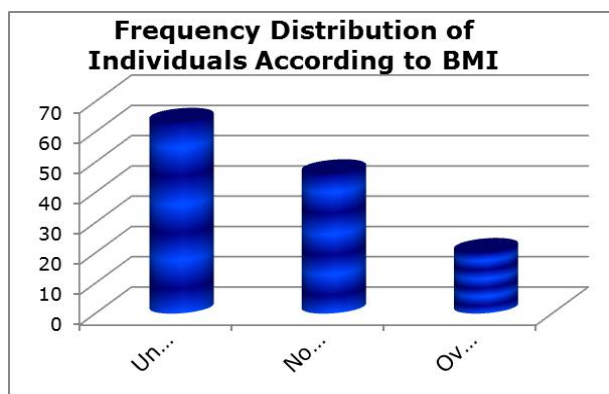


OBSERVATIONS

Raw data was collected by observational study from analysis of prakriti, nidra & krushata. Display of data is provided by charts & graphs for getting clear idea about relation between improper sleep, krushata and different aspects of study. Data was displayed in the form of Tables & Bar diagrams.

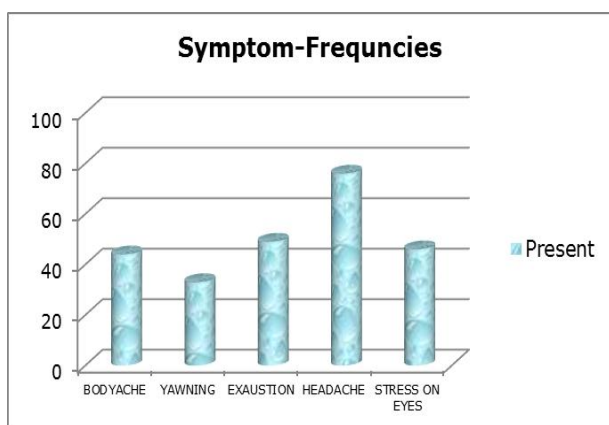
There were 48.84% individuals with low BMI (Underweight), 35.66% individuals with normal BMI, 15.50% individuals with higher BMI (Overweight).

BMI	Frequency
Under weight	63
Normal	46
Overweight	20
Total	129



The frequency distribution of individuals according to all other five symptoms due to ratri jagarana is given below along with its bar graph.

Symptom present	Bodyache	Yawning	Exhaustion	Headache	Stress On Eyes
Individuals	44	33	49	76	46



'Head ache' was most common symptom found among all night shift IT workers. 'Body ache', 'Stress on eyes' and 'Exhaustion' were next common symptoms & the least common symptom among all these five symptoms was 'Yawning'.

Dietary Habits: There were 44.18% individuals who were eating fast food/ bakery products/ packed food/ hotel made food daily; 31% were eating once a week; 19.37% were eating once a month & 5.42% eat rarely.

Data Analysis

Test 1: To compare the distribution of frequency according to BMI underweight, normal weight & overweight. The test used was chi square test for goodness of fit. The test statistic, chi square = 21.81 & p value = 0.00. Since p value < 0.05, the level of significance, there is strong evidence to reject the null hypothesis. So, The population proportions of underweight, normal weight & overweight in I.T. workers working in night shifts are not equal i.e. the distribution of frequencies are not same according to BMI underweight, normal weight & overweight in I.T. workers working in night shifts. The proportion of

underweight is highest & the proportion of overweight is lowest in IT workers who worked at night shifts.

Test 2: To compare the BMI according to various prakrities one way ANOVA. The average BMI is different for at least one of three prakrities (groups) Vata (group A), Pitta (group B) & Kapha (group C).

Post Hoc Tests: To test which one of these three prakruties Vata, Pitta & Kapha has the least BMI. IT workers of vatapradhan prakruti (Group A) have the least BMI. The remaining two prakruti (Group B & C) have almost equal BMI on an average.

Test 3: To compare the weight before six months & weight at present. The test used is paired t test. There was significant reduction in average weight at present than average weight before six months.

DISCUSSION

Nidra is one of the natural instincts of life, like food & water. It is one of the three pillars that support life.^[12] In 21st century, everyone is living under stressful life. Someone is worried about lack of materials, happiness and comforts; while someone else is worried about lack of mental peace. Everybody is desirous for obtaining higher standards of living. Hence, they keep trying to reach at higher position than the present. Due to this competition, today's life is far from what the natural anatomy & physiology of human body permits. Night is the natural time for occurrence of nidra, as 'Tamas' which is the main cause of nidra, dominant at night.^[13] So, one must follow the rules of nature & sleep at every night for adequate time. Charakacharya mentioned three yoga of nidra.^[14] Sleeping at anytime other than night time (Divaswapa), is mithyayoga of nidra. Atinidra means, sleeping for more than required time which is Atiyoga of nidra. Not sleeping at proper time (Ratri-jagarana) is Heenayoga or Ayoga of nidra. These three

conditions disturb health & may lead to death, while Proper sleep (Samyak yoga) brings happiness in life. Hence, Ratri-jagarana as well as Divaswapa should be avoided. The biological clock which is mandatory for one's well being & rhythm of life cannot recognize the upsetting created by today's lifestyle changes. Once this biological clock disturbed, health gets hampered.

Individuals between the age group 18-40 years were selected for this study, because, this is the adult age group & in which only, maximum IT workers are found. Also, daily requirement of sleep is 7-8 hours for this age group. In literature, there is no direct reference about relation between duration/ incidence of improper sleep (number of night shifts) & appearance of its side effects on body. Which means, it is not mentioned that, after how many night shifts, its side effects will be seen on body? Hence, to observe the desirable effects of improper sleep on body-built, individuals performing at least 10-15 night duties (more than 50% night shifts per month), minimum since 6 months were selected with the permission of Institutional Ethical Committee. In present study, all the individuals were suppressing their sleep due to their working hours. They all worked in the same company & had same type of work, duty hours (10 pm to 6 am), monthly duration (minimum 10-15 nights per month). Hence, side effects arising due to improper sleep were observed on them. Charakacharya mentioned 'Karshya' as one of the demerits of improper sleep.^[15] Sushrutacharya also said that, one who follows all rules for sleeping; neither become obese (sthula) nor lean (krusha).^[16] Three types of bodies are mentioned in Sushrut-samhita.^[17] These are sthula, krusha & madhyama body type. Among them Madhyama-sharira-purusha is always praised. Thus, importance of average body built is explained in our science. There are several disabilities of krusha person. Charaka also counted atikrusha person as one of the 8 undesirable persons.^[18] Sleep, diet & body built are inter-related with each other.^[19] Hence only vegetarian individuals were selected for this study. Charakacharya mentioned that leanness (Karshya), obesity (sthaulya) depends upon diet & sleep mainly.^[20] As dietary habits affect body built, percentage distribution of individuals according to eating habits (eating fastfood & bakery products/ eating at hotels) was also observed. Maximum individuals were having bad eating habits (44.18%). This may be a reason why some individuals found having higher BMI (obese). Ayurveda clearly mentioned relationship between Nidra-Prakriti-Body built also. Prakriti is one's Swabhava.^[21] Its knowledge is important for appropriate choice of one's diet, lifestyle & type of work for maintenance of health. As the characters & gunas of each prakriti (for vata, pitta and kapha) are different, the intensity of side-effects arising due to one's misbehaviour (mithya-aahar-vihar) will also differ according to his/her prakriti. Hence, to observe the variation of the symptom 'krushata' in different prakritis, three groups of individuals (IT workers) were formed according to prakriti. Vataprakriti individuals are naturally krusha & also have disturbed

sleep^[22], while Kaphaprakriti individuals are of upachita sharir & have good sleep in quality as well as in quantity.^[23]

MUHS prakriti format was considered as a tool for assessment of doshaj prakriti. In this study, it is observed that, only dwandwaj prakriti are getting in present scenario. Yet no single vata or pitta or kapha dominant or Sama doshaj prakriti was observed. Recent studies also stated that ekdoshaj prakriti is not found. In Ayurvedic literature, though 'pradhan' word is not used in description of prakriti, it is used in usual language to define one's prakriti. Hence, words such as Vatapradhan, pittapradhan, kaphapradha are used in this dissertation.

The average BMI was different according to Prakriti. (ANNOVA Test: P value=0.00, P<0.05) The Vata-prakriti individuals (Group 'A') have least BMI among three prakritis. (Post Hoc Test: P value =0.002) This shows that, there are more chances for Vatapradhan Prakriti individuals to suffer from hazards due to suppression of sleep. It is clear that, Ratrau-jagarana causes Vataprakopa. In Vataprakriti individuals, additive effect of jagaranjanya prakupit Vata is seen on Vatadosha of prakriti. In this relation, Vagbhata explained a sutra about prakruta & vaikruta dosha.^[24] Vaikruta dosha merge with Prakruta dosha & they are mainly responsible for health. If they accumulate in excess they disturb health. This explains why Vatapradhan prakriti suffered more than others due to ratri-jagarana. The remaining two prakritis have almost equal BMI on an average. Weight of all individuals before 6 months of the study was recorded. It was then compared with the weight present at the time of study. There is significant reduction in average weight at present than the weight before 6 months. (Test used: Paired t test, t=3.33 & P value=0.001 which is <0.05).

Krushata was assessed by calculating BMI. BMI is a simple index, which is commonly used to determine if one's weight is proper for his/her height. It is universally accepted parameter & recommended by W.H.O. In this study, 63 individuals were observed having low BMI, 46 of normal BMI & 20 were observed having higher BMI. After applying Chi-square test for goodness of fit, chi square value=21.81 & P value=0.00 (P value<0.05). That means any of the three proportions is highest. Comparison of proportions shows that, the proportion of Underweight (low BMI) is highest in IT workers working in night shifts & the proportion of overweight (higher BMI) is lowest. Thus, suppression of sleep i.e. not sleeping at natural time & for appropriate time caused 'Krushata'. 15.50% individuals were with higher BMI (overweight) in spite of ratri-jagarana. This may be because of their dietary habits, type of divaswapa or heredity. 35.66% individuals were with normal BMI. This may be because of regular & proper 'day time sleep' or may be because of 'Satmya'. As Ayurveda explained that daytime sleep is useful for people who become tired by staying awake at night.^[25] In such

conditions, daytime sleep balances vitiated doshas due to jagarana & nourishes body. But, daytime sleep also should be in proper way which is explained by Vagbhatacharya, one can sleep during day, exactly half the amount of time of jagarana & without eating anything.^[26] Such divaswapa will not produce doshaprakopa. Sushrutacharya further says that, unrighteous sleep can also become 'Satmya' (habitual) to certain individuals & does not produce harmful effects on their body. If side effects occur in these individuals they will be in minor forms. This type of satmya is called as "Oaksatmya".^[27]

Though jagarana did not produce 'Krushata' in all individuals, some side effects were observed in all individuals due to suppression of Nidra-vega. The reference includes group of symptoms^[28] such as in present study, 'Headache' is the most common symptom (58.91%) arising due to ratri-jagarana. This may be because; ratrau-jagarana is one of the main causes of Shiroroga.^[29] 'Body-ache' (34.11%), 'Exhaustion' (37.98%) & 'stress on eyes' (35.66%) is next common symptoms, 'yawning' (25.58%) is the least common symptom observed. In this study, Krushata was predominantly observed in IT workers. Thus, suppression of sleep i.e. not sleeping at natural time & for appropriate time caused 'Krushata' in I.T. workers who worked in night shifts. This clearly shows that there is a strong association between ratri-jagarana (improper sleep) & krushata.

Limitations & Scope of the study: As the focus of the study is on effect of improper sleep with special reference to the symptom 'krushata', other factors which have some association with body built like Day-time sleeping after jagarana, Diet habits, Prakriti, Stress are unable to explore. These factors & their relation with Krushata can be studied further.

CONCLUSION

Observations obtained with this research project conclude that,

1. Staying awake at night (ratri-jagarana) causes Krushata.
2. Individuals of Vatapradhan prakruti are more prone to become krusha (lean) due to improper sleep (Ratri-jagarana).
3. Individuals performing Ratri-jagarana are more likely to suffer from the symptoms headache, exhaustion & stress on eyes.
4. Day-time sleep, dietary habits, heredity can also affect body built.
5. Proper daytime sleep & proper diet can reduce hazardous effect of improper sleep.

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