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A Cross-Sectional Study To Determine 'Bala' In Security Guards With Deprivation Of 'Nidra' Due To Night Shift Duty" – Original Research Article

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ABSTRACT:

Ayurveda, an eternal system of medicine, is known for its multidimensional approach towards mankind. The three supports of life are intake of food, sleep and observance of *brahmacharya.* Sleep at the night time makes for the balance of the body constituents (*dhatusamya*), attentiveness, good vision, good complexion and good digestive power. In this age of globalization, daily life style of common man Burdened with junk food, inadequate sleep, over exertion, lack of Exercise, has an unavoidable impact on physical and mental health And body strength. Peoples who works in shift duty do not get regular sleep. thus their sleep gets disturbed. This people are at higher risk of the disease arising due to improper sleep. Ayurvedic literature states that *bala* depends upon *Nidra* and improper *nidra* causes *abala* . *Bala* is important to protect ourselves from adverse conditions. Assessment of *Bala* has great importance in pathological condition also because the type and dose of the therapeutic measures has to be essentially determined accordingly. So, This study is an attempt to observe the effect of deprivation of *Nidra* on *Bala*.

KEYWORDS:

Nidra, Sleep, Bala, Abala, Ayurveda, Shift work, Sleep deprivation, Dhatusamya, Physical health, Mental health, Lifestyle disorders, Therapeutic assessment.

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INTRODUCTION:

Ayurveda aims primarily for the protection of an individual's health and secondarily for pacification of disease.[1] The three supports of life are intake of food, sleep and observance of *brahmacharya.* Being supported by these three well-regulated factors of life, the body is endowed with strength, complexion and growth, and continues until the full span of life .[2] Sleep is natural and periodic state of rest for the mind and body occurring at regular interval. Proper sleep is fundamental component of healthy lifestyle.[3] Sleep is important because it affects our mental, physical and emotional well-being [4]. *Acharya charak* has explained merits and demerits of proper and improper sleep as , Happiness and sorrow, growth and wasting strength and weakness, virility and impotence, knowledge and ignorance, as well as life and its cessation depend on sleep. [5] Ongoing sleep deficiency, which mainly occurs due to late night study, night duty of different professions may raise risk for some chronic health problems. In ayurvedic classic several diseases occurs due to *Nidraviparyaya* (improper sleep), *Prajagaran* (whole night awakening), *Diwaswap* (day sleep).[6] Sleep deprivation is now being recognized as an increasingly common condition inherent to modern society .[7] Several studies have found a relationship between sleep duration and morbidity, mortality and obesity, with the lowest risk being observed among person who sleep 7-8 hrs per night.[8] Some studies have shown that sleep deprivation may impair immune function; the levels of IgG, IgA and IgM were enhanced in the sleep deprived. [3] So, one should have proper sleep at every night to give rest to body as well as mind. For most adults, 7-8 hrs sleep per night is appears to be the best amount of sleep. [3] In *Charaka Samhita* it is said that improper sleep leads to *'Abala'*. That is strength of body is reduced. This *bala* defines various entities of the body such as *Oja*, *Kapha*, Immunity and *Vyadhikshamatva*. *Bala* is considered as the physical and mental strength of the individual. The knowledge of *Bala* of a patient is needed to know about the prognosis and to fix the dosage, to adopt proper treatment modality and to advice proper regiments for a healthy life style. So, In present study, night shift duty security guard selected to observe the effect of sleep deprivation on *Bala*.

AIM AND OBJECTIVES

To observe *Bala* in security guards deprived of *Nidra* due to their night shift duty ,To evaluate *Bala* of night shift duty security guards who are deprived of *Nidra*, by using methods like 1) Harvard step test 2)Skipping test ,To study impact of deprived *Nidra* on *Dehabala* from ayurvedic literature.

MATERIAL AND METHODS

The following is the description of Materials and Methods used in this study.

TYPE OF STUDY: This was an Observational study.

STUDY DESIGN: Cross-sectional study.

SAMPLE SIZE (n):

Sample size for the thesis was 60.

Method of sampling : Non- Probability Purposive sampling

SELECTION CRITERIA:

INCLUSION CRITERIA -

1) Security guards between age group of 30-45 years with normal BMI.

2) Security guards who are doing night shift duty since 1 to 2 years.

3) Security guards who are deprived of *Nidra* with score more than 7 obtained from sleep Questionnaire.

4) Healthy volunteers with no history of major illness.

EXCLUSION CRITERIA -

1) Individual having any kind of major illness disease like Cardiac disorders, asthma,

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muscular dystrophy, Physically disabled, previous history of Insomnia.
2) Those who are under gym training.
3) Individuals performing regular exercise.
4) Those who are taking any medication.
5) Individual not willing to give informed consent.

METHOD OF STUDY:

1) Volunteers were selected between age 30-45 years with deprivation of *Nidra*, where Nidra assessed with validated Questionnaire.
2) Purpose and method of the study was explained to the volunteers.
3) Informed consent was taken.
4) *Bala* was assessed with Skipping test and Harvard step test
5) Observations were collected and assessed.
6) After statistical analysis conclusion was drawn.

CRITERIA FOR SCREENING:

1) Sleep (*Nidra*) was assessed using a validated questionnaire designed to evaluate both the quantity and quality of sleep. Based on the responses, individuals were categorized as sleep-deprived or not.
2) CRITERIA OF ASSESSMENT OF *BALA*: *Vyayamswarup*

1)**Harvard Step Test** [9] **2) Skipping test:**

Subject was asked to do skipping up to maximum 9 minutes and assessment is baesd on following gradation :

Gradation to evaluate *Dehabala* (Skipping)
0-3 min: *Heen Dehbala*
3-6 min : *Madhyam Dehbala*
6-9 min : *Uttam Dehbal*

STATISTICAL ANALYSIS:

This study was aimed to observe *Bala* in Security Guards deprived of *Nidra* due to their Night Shift Duty.

Further to find the relation between Nidra and *Bala*, Chi-Square Test was applied.

For every statistical analysis, significance level accepted at 5% at 95% confidence limit.

To test association between *Nidra* Deprivation Score and Skipping test & *Nidra* Deprivation Score and HST, chi-square test was applied.

OBSERVATIONS

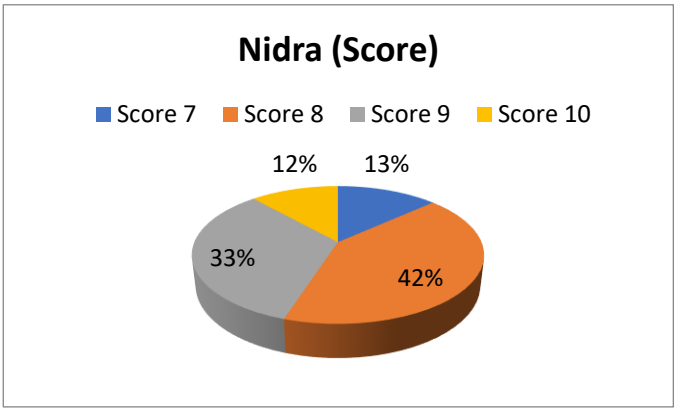
*This cross-sectional study was done with the sample size of 60 volunteers .
*These volunteers were selected on the basis of a sleep questionnaire, to evaluate the quality of sleep.
* A detail history was taken according to case record form.
*Harvard step test and Skipping test was used to observe *bala* of volunteers.
*Observations and result were recorded.

P)*Nidra*

Table no 1 : Shows *Nidra* wise distribution -

Sr. No.	Nidra (Score)	No. of Volunteers	% of Volunteers
1	**Score 7**	8	13.33
2	**Score 8**	25	41.67
3	**Score 9**	20	33.33
4	**Score 10**	7	11.67
5	**Total**	**60**	**100**

Figure no 1: Shows *Nidra* wise distribution –



Skipping Test

Table no 2 : Shows Skipping Test wise distribution -

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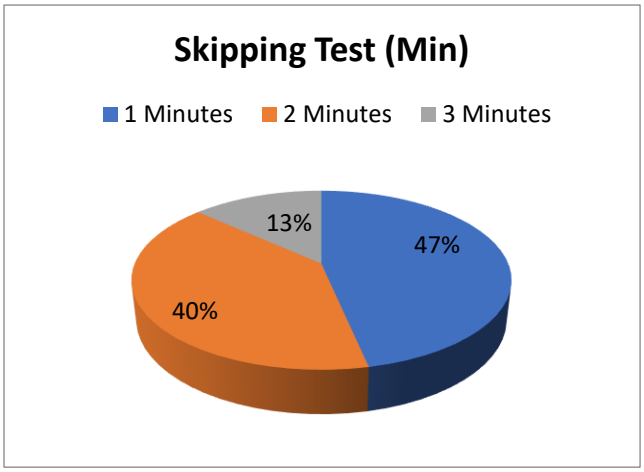
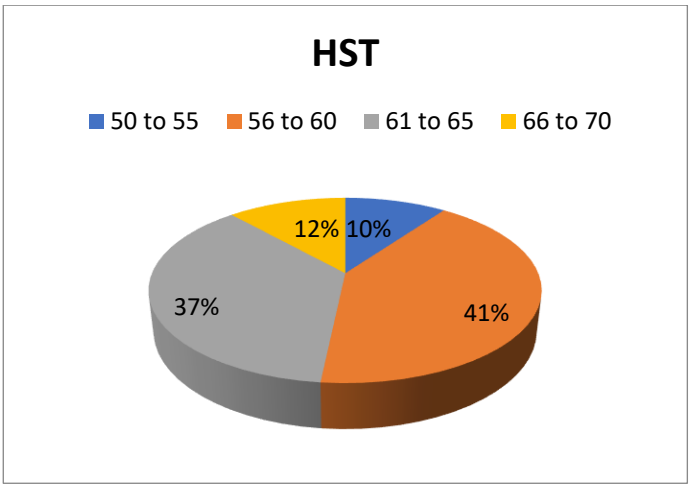
Sr. No.	Skipping Test (Min)	No. of Volunteers	% of Volunteers
1	1 Minutes	28	46.67
2	2 Minutes	24	40
3	3 Minutes	8	13.33
4	Total	60	100

Figure no 2 : Shows Skipping Test wise distribution –



Sr. No.	HST	No of Volunteers	% of Volunteers
1	50 to 55	6	10
2	56 to 60	25	41.67
3	61 to 65	22	36.67
4	66 to 70	7	11.67
5	Total	60	100

Figure no. 3: Shows HST wise distribution –



HST

Table no 3: Shows HST wise distribution -

RESULTS

Statistical Analysis (Chi square test)

1. Association between *Nidra* and Skipping Test

Table no 4: Chi square test for association between *Nidra* and Skipping Test

Nidra	Skipping Test			Total	X^2	DF	P
	1	2	3				
Score 7	4	1	3	8	13.673	6	.033511 (Significant)
Score 8	8	15	2	25			
Score 9	13	6	1	20			
Score 10	3	2	2	7			
Total	28	24	8	60			

Figure no. 4 : Association between *Nidra* and Skipping Test

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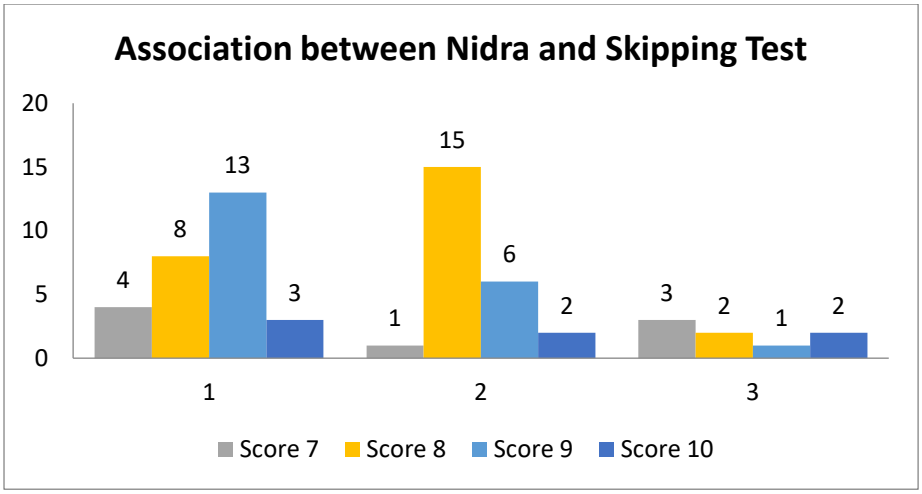
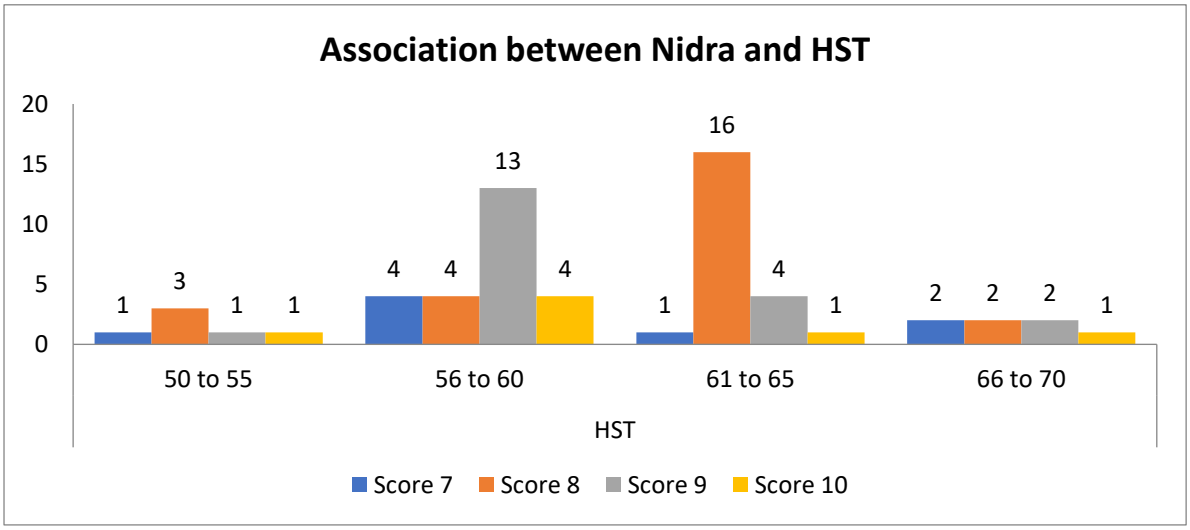


2. Association between *Nidra* and HST

Table no.5: Chi square test for association between *Nidra* and HST

Nidra	**HST**				**Total**	**X^2**	**DF**	**P**
	50 to 55	**56 to 60**	**61 to 65**	**66 to 70**				
Score 7	1	4	1	2	**8**	18.3158	9	.031681 (Significant)
Score 8	3	4	16	2	**25**			
Score 9	1	13	4	2	**20**			
Score 10	1	4	1	1	**7**			
Total	**6**	**25**	**22**	**7**	**60**			

Figure no.5: Association between *Nidra* and HST



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DISCUSSION:

Discussion On Findings Observed During Assessment Of *Bala* In Sleep Deprived Subjects. Association between *Nidra* deprivation score and skipping test (table no 4 , figure no 4) Chi Square test was carried out to find out association between *Nidra* deprivation score and skipping test score. In this p - value is 0.033511 which is than 0.05.As value of p is less than 0.05, significant difference was found between *Nidra* and Skipping Test. There are total 8 subjects which shows *Nidra* deprivation score 7.Among which 4 subjects shows skipping test score of 1 min , 1subject shows skipping test score of 2 min, and 3 subjects shows skipping test score of 3 min. There are total 25 subjects which shows *Nidra* deprivation score 8. Among which 8 subjects shows skipping test score of 1 min , 15 subjects shows skipping test score of 2 min, and 2 subjects shows skipping test score of 3 min. There are total 20 subjects which shows *Nidra* deprivation score 9. Among which 13 subjects shows skipping test score of 1 min , 6 subjects shows skipping test score of 2 min, and 1subjects shows skipping test score of 3 min. There are total 7 subjects which shows *Nidra* deprivation score 10. Among which 3 subjects shows skipping test score of 1 min , 2 subjects shows skipping test score of 2 min, and 2 subjects shows skipping test score of 3 min. This figure shows there is maximum number of security guards having *Heen Dehbala.* Association between *Nidra* deprivation score and HST (table no 5 , figure no 5) *Nidra* deprivation score was associated with Average, Low average and Poor score groups of Harvard Step Test. Chi-Square test was carried out to test association between *Nidra* Deprivation Score and HST. In this test P-Value is 0.031681 which is also less than 0.05. That means there is significant association between *Nidra* Deprivation Score and HST score. *Nidra* deprivation score was associated with poor , low average and average score groups of Harvard Step test . There are total 8 subjects with *Nidra* deprivation score 7. among which 1 had HST score between 50 to 55 , 4 subjects had HST score in between 56 to 60 , 1 subject had HST score between 61 to 65 and 2 subjects had HST score between 66 to 70. There are total 25 subjects with *Nidra* deprivation score 8. among which 3 had HST score between 50 to 55 , 4 subjects had HST score in between 56 to 60 , 16 subject had HST score between 61 to 65 and 2 subjects had HST score between 66 to 70. There are total 20 subjects with *Nidra* deprivation score 9 . among which 1 had HST score between 50 to 55 , 13 subjects had HST score in between 56 to 60 , 4 subject had HST score between 61 to 65 and 2 subjects had HST score between 66 to 70. There are total 7 subjects with *Nidra* deprivation score 10 . among which 1 had HST score between 50 to 55 , 4 subjects had HST score in between 56 to 60 , 1 subject had HST score between 61 to 65 and 1 subjects had HST score between 66 to 70. It was seen that , among all the *Nidra* deprivation score and total groups of HST , the number of subjects with low average HST score was maximum.

CONCLUSION:

The study titled "A Cross-Sectional Study to Determine *'Bala'* in Security guards with Deprivation of *'Nidra'* Due to night shift duty " was conducted. Based on the results finding , the following conclusions can be drawn:

*There is significant association between *Nidra* and *Bala*.

*There is a significant association between the *Nidra* Deprivation Score and Skipping score, as well as between the *Nidra* Deprivation Score and HST score.

*A hypothesis generated from above data indicating a significant association between sleep deprivation and *bala*.

*The study underscores the vital role of sleep in daily functioning, as highlighted in both Ayurvedic and modern literature.
*Partial or total lack of sleep, disturbed sleep, and poor quality sleep can all drastically change an individual's thinking and behavior and negatively impact on one's physical, mental, and emotional health.
*Proper daytime sleep & proper diet can reduce hazardous effect of improper sleep.
*The study lighted on the importance of knowing *dehabala* of individuals. Ayurveda says there is no other tool like strength(*bala*) to achive stability. Hence *bala samvardhan* is necessary ,so in order to maintain good *dehabala* individual should follow proper sleep pattern .

Scope for Further Study:

* Future research should consider multiple factors affecting *bala*.
*Additional studies could explore different parameters for assessing *bala* beyond those used in this research.
*Lastly, conducting the study with a larger sample size would enhance the validity of the findings.

REFERENCES:

1. Sharma Priyavrat, Caraka-Samhita Vol. I; Chaukhambha Orientalia, 2011, Sutrasthan 30/26, p. 240.
2. Sharma Priyavrat, Caraka-Samhita Vol. I; Chaukhambha Orientalia, 2011, Sutrasthan 11/35, p. 75.
3. Liu.M - M. et al.: Effect of sleep time on sperm quality; Med Sci Monit, 2006.
4. Dr. Vandana S. Yeragi, dr. Sunita R. Khatri, dr. Akash H. Maske,importance of nidra; international journal of ayurvedic and herbal medicine 6:6 (2016) 2393-2398.
5. The Charaka Samhita, Choukhambha Orientalia Jaikrishnadas Ayurveda Series 152, English translation, reprint edition 2008, page no-134.
6. Das J. R., Importance of Nidra in day to day life, ccras.nic.in/node/1078.
7. Zager A, Anderson ML, Ruiz FS et al: Effect of acute and chronic sleep loss on immune modulation of rats. Am J comp physio, 2007;293: R504-9.
8. Tina Jensen, anna maria Anderson: association of sleep disturbances with reduced semen quality: a cross sectional study among 953 healthy young Danish men, 7april 2013, vol.177, no.10, 1027-37.
9. https://www.tandfonline.com/doi/pdf/10.1080/10671188.1943.10621204 Seen as on 18/02/2023.

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