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Sleep Duration, Socio-demography and Health: An Exploratory Study

Sleep duration, especially short and long sleep duration has association with increased morbidity and mortality, but the scenario among the indigenous groups is scanty. In view, the present study aimed to explore the night time sleep duration and its association with socio-demographic and health related factors among the Santals of West Bengal, India. The cross-sectional study conducted in 422 adult Santals including 241 males and 181 females living in rural and urban areas of West Bengal, India. Sleep duration, socio-demographic and health behaviour data had been collected by using well-tested questionnaire/schedule. BMI and blood pressure data were collected through standard methods and instruments. Descriptive statistics, t-statistics/ANOVA and logistic regression were used to analyze the data. Majority of individuals of either sex (44%) reported standard sleep duration, but prevalence of short sleep duration was notably high (43%), whereas long sleep duration was reported by 13% participants. Significant mean differences exist in sleeping hours across most of the socio-demographic traits; health trait like BMI; and health behaviour trait like physical exercise status of the Santals. In multinomial logistic regression, younger age group (OR= 0.364) and engagement in any physical exercise (OR= 0.426) were significantly associated with short sleep duration, whereas long sleep duration was associated with lower educational status (OR= 11.311) when other socio-demographic, health and health behaviour variables remain controlled. The study amplify sleep related problem remain in indigenous people, especially among youth where awareness generation regarding lifestyle modification may proved to be beneficial to control the problem.

Introduction

Sleep is basic biological requirement for human which is crucial for health and wellbeing of individuals (Ramar et al., 2021). It is well reported that inadequate sleep causes negative work outcome (Litwiller, Snyder, Taylor & Steele, 2017) and increases injuries in workplace (Uehli et al., 2014), and in long tern causes adverse outcome for varied health condition ranging from physiological health in terms of cardiovascular, cerebrovascular and metabolic health (Watson et al., 2020), mental health causing depression, mood swing, anxiety (Scott, Webb, Martyn-St James, Rowse & Weich, 2021), and combining all inadequate sleep increases all caused

mortality (Cappuccio, D'Elia, Strazzullo & Miller, 2010) worldwide including Asian population (Svensson et al., 2021). In recent times sleep problems are coming as silent epidemic globally (Chattu et al., 2018), including low and middle income countries of Asia and Africa (Stranges, Tigbe, Gómez-Olivé, Thorogood, & Kandala, 2012) even the marginalised indigenous people are affected with it (Hamilton & Joosten, 2015), but the studies are largely inadequate among them.

Healthy sleep although includes a array of factors ranging from quality, duration, timing, efficiency, and sustained alertness during working hours (Buysse, 2014), but several studies give emphasis on duration of sleep and describe it as an important factor to determine health of individual as well as population (Alvarez & Ayas, 2004; Chaput et al., 2020). It has been reported that sleep duration changes across lifespan (Chaput, Dutil & Sampasa-Kanyinga, 2018) and between sex (Burgard & Ailshire, 2013). Again, socio-economic disparities in sleeping habit occur, where people with lower socio-economic group report poor quality of sleep than people with higher socio-economic group (Anders, Breckenkamp, Blettner, Schlehofer & Berg-Beckhoff, 2014), and here educational status play a crucial role (Luo, Buxton, Gamaldo, Almeida & Xiao, 2021) and combining all there remain disparities across ethnic group (Singh, Hall, Reynolds, Palmer & Mukherjee, 2020), where marginalised people reported shorter sleep duration than the other (Whinnery, Jackson, Rattanaumpawan & Grandner, 2014).

It has been reported that rapid urbanization, especially electrification causes change in sleep behaviour in indigenous people (Pilz, Levandovski, Oliveira, Hidalgo & Roenneberg, 2018; Smit, Broesch, Siegel & Mistlberger, 2019), but there remains variation in duration between summer and winter (De la lglesia et al., 2015). It has also been reported that indigenous groups tend to sleep shorter duration than non-indigenous groups (Samson et al., 2017). Again, there remains variation within and between different indigenous groups (Johnson, Jackson, Williams & Alcántara, 2019). However, the sleeping habit and its related factors among indigenous group are largely unexplored, especially in Indian context (Minz & Pati, 2021). In view, the study aimed to explore the night time sleep duration of the Santals of West Bengal, India and also to find out the socio-demographic and health related factors associated with the sleep duration of the study participants.

Materials and Methods

Study population

Present cross-sectional study was conducted among an indigenous ethnic group viz. Santals, distributed in most of the districts of West Bengal. Santals are the largest *scheduled tribe (ST)* community of West Bengal and they are the third largest STs in India (Census, 2011). Santals are a non-Hindu people by religion, settled agriculturist by traditional occupation and were classified as "Proto-Australoid" tribe (Guha, 1944). Majority of Santal people used the script '*Alchiki*' and communicated themselves with 'Santali' language, sometimes, they used 'Bengali' language as their way of communication with outsiders. The Santals of the present study exhibit greater socio-economic heterogeneity in terms of education, occupation and income between rural and urban groups but socio-economic homogeneity exists within the same habitat group.

Study Area

This study was an outcome of a larger research project on health status and health behaviour related issues of the Santals residing in rural and urban settlements of West Bengal. Data on the rural group was collected from four adjacent small villages from Beliatore area under Barjora block of Bankura district, West Bengal; while the data on the urban group was collected from Santragachi Press Quarter area, under Howrah Municipal Corporation. The rural village settlements were situated around 220 Kilometers away from Kolkata, the state capital of West Bengal and considered as remote areas in terms of communication, available amenities, etc.; while urban settlements were situated approx. 15 kilometers away from Kolkata, just opposite river bank of "Ganga" and considered as urban areas in terms of communication and available amenities.

Data types and collection

Complete enumeration of the household had been done for demographic and socio-economic data for both the group. Socio-demographic data were collected through semi-structured household questionnaire/ schedule, which include name, date of birth/age, sex, place of birth, marital status, educational status, occupation for all the household members and household assets, item-wise per capita monthly household expenditure data were also collected. Age of each individual was recorded as correctly as possible, described in detail elsewhere (Das & Roy, 2013). Wealth Index Score (WIS) was calculated for each household using household characteristics and assets data following the standard procedure of generating wealth index as adopted in the National Family Health Survey (IIPS & Macro International, 2007).

WIS is the standard indicator of economic condition of the household and is consistent with household's income and expenditure measures.

Sleep duration data along with other health behaviour data were collected from a total of 422 adult individuals (including 241 males and 181 females), who voluntarily agreed to participate in the study. Here, sleep duration denote night time sleep only and day time sleeping, napping were not incorporated. Other health behaviour data includes different substance use behaviour like habits of smoking bidi/cigarette, drinking alcohol, tobacco chewing, physical exercise; etc. A pre-tested questionnaire/schedule, specially designed for the present purpose was used to collect the data on duration of sleep in night and other health behaviour, it was tested several times in different field areas (Das, 2015; Roy, Das & Kar, 2010). The data were collected during winter season avoiding the time of harvesting of this agriculturist group.

Anthropometric measurements (height & weight) were taken following standard methodology and standard instruments (Weiner & Lourie, 1981). Blood pressure data in terms of systolic blood pressure (SBP, mmHg) and diastolic blood pressure (DBP, mmHg) were measured with mercury Sphygmomanometer and Stethoscope after 15 minutes of complete rest following the standard protocol of American Heart Association (Pickering et al., 2005). The instruments were standardized and also checked for its calibration before use every time.

It may be mentioned here that about 40% of the adult participants were absent at the time of data collection due to preoccupations. To avoid inter-observer error one of the authors (BMD) collected the entire data. The nature, objectives and importance of the study were explained to all of the study participants and written consent was obtained from the head as well as other members of the household prior to data collection. The study was conducted following the guidelines of the Ethics Committee on Human Experimentation, Indian Statistical Institute, Kolkata.

Classification of data

Duration of sleep has been classified as short (< 7 hours/night), standard (7-9 hours/night) and long (> 9 hours/night) (Hirshkowitz et al., 2015). Age was categorized into 3 age cohorts i.e. 18-39 years, 40-59 years and 60-78 years; Area as rural and urban; Marital status was classified as married, unmarried and widowed/separated; Household size as upto 4 members, 5-6 members, and 7 and more members; Educational status as non-literate, upto secondary (class I-X) and above secondary (above class X); Occupational types were categorized as agricultural worker (cultivation /daily wage /labour), salaried (service holders and pensioners), students, household worker and others (business persons /aged dependent /unemployed); Economic status was classified as low (< -0.8697), medium (-0.8698 to 0.8382) and

high (≥ 0.8383) on the basis of Wealth Index Score. Health traits data in terms of body mass index (BMI) was classified according to WHO (2004) as underweight (BMI <18.50 kg/m^2), normal weight (BMI 18.50 – 24.99 kg/m^2) and overweight/obese (BMI ≥25.00 kg/m^2); blood pressure as hypertensive (SBP ≥ 140 mmHg and/or DBP ≥ 90 mmHg) and non-hypertensive (SBP < 140 mmHg and DBP < 90 mmHg) following JNC 7 classification (Chobanian et al., 2003).

Statistical analysis

Descriptive statistics used to know the distribution of socio-demographic characteristics and other health behaviour by sleep duration categories. t-statistics or ANOVA were also performed to compare mean hours of sleeping between and among socio-demographic, health and health behaviour groups. Multinomial logistic regression analyses had been done to examine the association between socio-demographic, health and health behaviour variables with sleep duration. Again, sleep duration used as dependent variables (Long sleep vs. Standard sleep and short sleep vs. Standard sleep) and socio-demographic, health and health behaviour variables were considered as independent variables. All the independent variables were categorical as described earlier except WIS. For most of the categorical independent variable, the last category was considered as reference category and the association of other categories with the dependent variable were presented in terms of odds ratios (OR) and 95% confidence interval (CI) level. All statistical analyses had been done using SPSS software 16.0 (SPSS Inc., Chicago, IL, USA) and MS Excel 2010.

Results

Distribution of Santal population according to sleep duration

The distribution of Santal population according to sleep duration shows that standard sleep duration (7-9 hours/night) was reported by near about half of the study participants (44%). However, short sleep duration (<7 hours/night) was reported by 43% participants and long sleep duration (> 9 hours/night) was reported by 13% participants (Chart not presented here).

Table 1. Distribution of Santals according to socio-demographic characteristics

Socio-demographic characteristics	Variables	Population Profile (N=422) %
Area of living	Rural	61.61
	Urban	38.39
Sex	Male	57.11
	Female	42.89
Age groups	Upto 39 years	47.87
	40-59 years	38.39
	60-78 years	13.74
Marital status	Married	75.83
	Unmarried	16.11
	Widowed/Separated	8.06
Household size	Upto 4 members	47.16
	5-6 members	34.83
	7 and more members	18.01
Educational status	Non-literate	31.28
	Upto Secondary (10^{th} class)	38.39
	Above Secondary (10^{th} class)	30.33
Occupational types	Agricultural activity	40.76
	Salaried	24.88
	Student	7.82
	Household work	19.67
	Others[#]	6.87
Economic status	Low	33.65
	Medium	33.41
	High	32.94

[#]Others include petty businessperson, aged dependent, and unemployed

Table 1 shows the distribution of Santals according to socio-demographic characteristics. More than 61% of the participants were from rural areas and 57% of the participants were represented by males. Near about half (48%) of the participants were below 39 years of age; 38% of the participants belong to 40-59 years age group and rest 14% participants were aged 60 years or above. More than 75% of the participants were married and rests of the participants were either unmarried (16%) or widowed/separated (8%). More than 38% of the studied population had education upto secondary level (10^{th} standard), however, 31% of the population had no formal education. Nearly 41% of the participants were engaged in agricultural activities and about 25% of the participants were earning a salary for their occupation, while a large proportion of the female participants (20%) were doing household works only. The majority of the participants were living in a household consisting upto 4 members (47%) and about 18% of them were living in household consists of 7 members. Since the economic condition of the families was classified by tertile distribution of wealth index score, about 33% of the participants were living in either low, medium, or high economic conditions.

Sleep duration patterns of Santals according to socio-demographic characteristics (Table 2) reveals that rural participants (7.42±1.50) reported significantly higher mean hours of sleeping than urban participants (6.30±0.83). Majority of the urban population reported short (70%) and standard (30%) sleep duration, while higher percentage of rural population reported standard (52%) and long (21%) sleep duration. Females (7.14±1.43) show slightly higher mean hours of sleeping than males (6.88±1.36). Significant mean differences exist among different age groups of the Santals, where younger age group (upto 39 years; 7.29±1.34) show higher mean hours of sleeping and 40-59 years age group (6.67±1.40) show lower mean value. Individuals with marital wedlock (6.94±1.39) show relatively lower mean hours of sleeping compared to unmarried (7.21±1.31) and widowed/separated (7.01±1.57) individuals. Participants who live in a household shared by upto 4 members show lower mean hours of sleeping compared to households with 5 and more members. In case of educational group, non-literate individuals show significantly higher mean hours of sleeping than their upper educational counterparts. It is clearly indicated that with the increase of education the percentage of short sleep duration was also increasing. Individuals who were engaged in agricultural activities (7.53±1.54) exhibits significantly higher mean hours of sleeping than the other occupational categories. Salaried individuals show the higher percentage of short sleep duration compared to other occupational groups. Individuals belong to high economic group (6.31±0.80) shows significantly lower mean hours of sleeping than middle (7.31±1.57) and low (7.34±1.34) economic group.

Table 2. Sleep duration patterns of Santals according to socio-demographic characteristics

Socio-demographic characteristics	Mean Hours of Sleeping			t / F value	Sleep Duration %		
	N	Mean	SD		Short (N=183)	Standard (N=184)	Long (N=55)
Area of living							
Rural	260	7.42	1.50	75.22***	26.92	52.31	20.77
Urban	162	6.30	0.83		69.75	29.63	0.62
Sex							
Male	241	6.88	1.36	3.78	46.47	43.15	10.37
Female	181	7.14	1.43		39.23	44.20	16.57
Age groups							
Upto 39 years	202	7.29	1.34	9.57**	32.18	50.50	17.33
40-59 years	162	6.67	1.40		55.56	36.42	8.02
60-78 years	58	6.84	1.35		48.28	39.66	12.07
Marital status							
Married	320	6.94	1.39	1.03	45.00	43.13	11.88
Unmarried	68	7.21	1.31		35.29	48.53	16.18
Widowed/Separated	34	7.01	1.57		44.12	38.24	17.65
Household size							
Upto 4 members	199	6.85	1.34	1.94	51.26	37.19	11.56
5-6 members	147	7.13	1.49		35.37	49.66	14.97
7 and more	76	7.09	1.32		38.16	48.68	13.16
Educational status							
Non-literate	132	7.48	1.60	18.30**	26.52	47.73	25.76
Upto Secondary (10^{th} class)	162	7.00	1.37		41.98	46.91	11.11
Above Secondary (10^{th} class)	128	6.47	0.94		62.50	35.16	2.34
Occupational types							
Agricultural activity	172	7.53	1.54	14.76**	23.26	54.65	22.09
Salaried	105	6.34	0.97		67.62	29.52	2.86
Student	33	6.91	1.01		42.42	51.52	6.06
Household work	83	6.70	1.26		56.63	33.73	9.64
Others[#]	29	7.05	1.30		37.93	48.28	13.79
Economic status							
Low	142	7.34	1.34	27.87***	25.35	55.63	19.01
Medium	141	7.31	1.57		34.04	46.81	19.15
High	139	6.31	0.80		71.22	28.06	0.72

[#]Others include petty businessperson, aged dependent, and unemployed

*$p < 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

Table 3. Sleep duration, health and health behaviour characteristics of the studied Santals

Health and health behaviour characteristics		Mean Hours of Sleeping			t / F value	Sleep Duration %		
		N	Mean	SD		Short (N=183)	Standard (N=184)	Long (N=55)
Body Mass Index	Underweight	106	7.32	1.45	12.75***	41.53	45.34	13.14
	Normal	236	7.06	1.44		28.30	50.00	21.70
	Overweight / Obese	80	6.34	0.89		68.75	30.00	1.25
Blood Pressure	Non-hypertensive	300	7.07	1.41	3.50	41.33	44.67	14.00
	Hypertensive	122	6.79	1.33		48.36	40.98	10.66
Health behaviour characteristics								
Drinking alcohol	Yes	151	6.85	1.40	2.44	47.68	42.38	9.93
	No	271	7.07	1.39		40.96	44.28	14.76
Smoking tobacco	Yes	120	6.90	1.34	0.76	45.83	42.50	11.67
	No	302	7.03	1.42		42.38	44.04	13.58
Chewing tobacco	Yes	167	7.15	1.47	3.69	35.93	50.30	13.77
	No	255	6.88	1.34		48.24	39.22	12.55
Any physical exercise	Yes	141	6.58	1.21	19.27***	59.57	33.33	7.09
	No	281	7.20	1.44		35.23	48.75	16.01

***$p \leq 0.001$

Table 3 reveals the sleep duration, health and health behaviour characteristics of the studied Santals. Individuals who were underweight (7.32±1.45) exhibits significantly higher mean hours of sleeping than the individuals with other BMI categories i.e., normal (7.06±1.44) and overweight/obese (6.34±0.89). Hypertensive individuals showed relatively low mean hours of sleeping (6.79±1.33) than the individuals with normal blood pressure (7.07±1.41). In case of health behaviour traits, it was observed that alcohol drinker and tobacco smokers had relatively low mean hours of sleeping than their respective counterparts. While, individuals who chew tobacco shows relatively high mean hours of sleeping than the non-chewer groups. A significantly high mean hours of sleeping was observed from participants who involves in any physical exercise (7.20±1.44) than their respective counterparts (6.58±1.21).

Table 4: Results of multinomial logistic regression of sleep duration with different socio-demographic, health and health behaviour variables

Variables	**Multinomial Logistic Regression Models** (**Ref.:** Standard sleep duration)			
Socio-demographic	**Short sleep duration** Odds Ratio (95% CI)	*p*-value	**Long sleep duration** Odds Ratio (95% CI)	*p*-value
Area of living				
Rural	0.149 (0.020 – 1.081)	0.060	53.645 (0.786–3661.85)	0.065
Urban	Ref.		Ref.	
Sex				
Male	0.769 (0.342 – 1.729)	0.525	1.458 (0.495 – 4.294)	0.494
Female	Ref.		Ref.	
Age groups				
Upto 39 years	0.364 (0.145 – 0.915)	**0.032**	2.336 (0.659 – 8.283)	0.189
40-59 years	0.879 (0.374 – 2.062)	0.767	1.111 (0.313 – 3.939)	0.871
60-78 years	Ref.		Ref.	
Marital status				
Married	0.528 (0.194 – 1.434)	0.210	0.839 (0.244 – 2.893)	0.782
Unmarried	0.292 (0.068 – 1.255)	0.098	2.533 (0.489 – 13.110)	0.268
Widowed/Separated	Ref.		Ref.	
Household size				
Upto 4 members	0.816 (0.402 – 1.657)	0.574	1.952 (0.755 – 5.051)	0.168
5-6 members	0.608 (0.304 – 1.216)	0.159	1.333 (0.536 – 3.316)	0.536
7 and more members	Ref.		Ref.	

[continue]

Educational levels				
Non-literate	0.532 (0.170 – 1.661)	0.277	11.311 (1.698 – 75.353)	**0.012**
Upto Secondary (class X)	0.715 (0.305 – 1.677)	0.441	3.426 (0.628 – 18.693)	0.155
Above Secondary (class X)	Ref.		Ref.	
Occupational types				
Agricultural activity	0.628 (0.197 – 2.000)	0.431	0.976 (0.210 – 4.544)	0.975
Salaried	0.685 (0.203 – 2.312)	0.542	2.157 (0.278 – 16.722)	0.462
Student	0.571 (0.150 – 2.179)	0.413	0.664 (0.069 – 6.420)	0.724
Household work	1.320 (0.401 – 4.341)	0.648	1.170 (0.226 – 6.049)	0.851
Others[#]	Ref.		Ref.	
Economic status (WIS)	0.717 (0.260 – 1.983)	0.522	1.555 (0.292 – 8.273)	0.605
Health traits				
Body Mass Index				
Underweight	1.161 (0.438 – 3.074)	0.764	0.399 (0.017 – 9.635)	0.572
Normal weight	1.220 (0.578 – 2.575)	0.601	0.328 (0.014 – 7.437)	0.484
Overweight	Ref.		Ref.	
Blood Pressure Status				
Non-hypertensive	1.544 (0.877 – 2.719)	0.132	0.925 (0.411 – 1.107)	2.085
Hypertensive	Ref.		Ref.	
Health behaviour traits				
Smoking tobacco	0.677 (0.349 – 1.314)	0.249	0.892 (0.305 – 2.607)	0.834
Drinking alcohol	1.174 (0.630 – 2.190)	0.613	1.256 (0.486 – 3.245)	0.637
Chewing tobacco	1.487 (0.877 – 2.520)	0.141	1.560 (0.740 – 3.289)	0.243
Any physical exercise	0.426 (0.239 – 0.760)	**0.004**	1.253 (0.456 – 3.442)	0.661
R-Square (Nagelkerke)		**0.369**		

[#]Others include petty businessperson, aged dependent, and unemployed

Table 4 demonstrates the results of multinomial logistic regression analysis of sleep duration with different socio-demographic, health and health behaviour variables. Here, short sleep duration was significantly associated with age groups and any physical exercise of the study participants with respect to standard sleep duration. While, long sleep duration was significantly associated with only educational status i.e. non-literate individuals show significantly higher odds (OR= 11.311; $p<0.05$) compared to individuals with higher educational status when other socio-demographic and health behaviour variables remain controlled. Participants with younger

age group (18-39 years) show significantly lower odds (OR= 0.364; $p<0.05$) than the higher age group participants and individuals engagement in any physical exercise (OR= 0.426; $p<0.01$) were significantly associated with short sleep duration when other socio-demographic and health behaviour variables remain controlled.

Discussion

An attempt has been made to explore night time sleep duration of Santals of West Bengal and also to find out the socio-demographic and health related factors associated with the sleep duration of the study participants. The study restricts itself in single ethnic group- Santal and explored night time sleeping habit across rural and urban group with greater socio-economic disparities between groups. It has been hypothesized that inter group differences will occur in sleeping hours which further is associated with socio-demographic and health traits. Result shows majority have standard sleep but short sleep duration is also notable. Mean hours of sleeping is higher for rural group than urban group. Again, prevalence of short sleep is higher for urban, middle aged, higher educated, salaried, high economic group whereas duration of long sleep is higher for rural, younger, non-literate, agricultural labourer, low economic group individuals. Significant mean differences exist in sleeping hours across most of the socio-demographic traits like area of living, age groups, education, occupation and economic status; health trait like BMI; and health behaviour trait like physical exercise status of the Santals. Association study shows short sleep duration is associated with younger age group and engagement in physical exercise, whereas long sleep duration is associated with lower educational status.

Majority of people irrespective of socio-demographic traits although have standard sleep duration, but prevalence of short sleep duration is also notable, similar trend reported among other population (Karunanayake et al., 2022) including Asian (Al-Thani & Khaled, 2020) and Indian population (Selvamani et al., 2018) but scenario in Indian subcontinent is inadequate. Also, studies are scanty among indigenous people, although Yetish and colleague (2015) reported pre-industrial indigenous group too sleep for averaged 6.9–8.5 hours, with sleep durations of 5.7–7.1 hours, similar with the traditional agriculturist Santal community of the present study.

There remain differences in mean hour of sleeping across socio-economic traits. Similar findings have also been reported in other studies in population of different ethnic origin in United States (Grandner et al., 2010), European countries (Lallukka et al., 2012) but in these studies people with lower socio-economic status reported more sleep problem than the other. Again, Bessone and colleague (2021) reported low-income urban adults in India sleep for shorter hour. However, in the study mean hours of sleep are shorter for urban high economic group and also among male. It

happens may be due to the urban male mostly involves in salaried occupation where they need to provide adequate time compromising their sleeping hour. Lo and colleague (2014) also reported Asian young people tend to sleep for shorter hour in weekdays than the western young. Also, rural people were mostly agriculturist and as the data were collected in winter, avoiding their harvesting time, when they may get additional hours to sleep. Suzuki and colleague (2019) also reported seasonal change in sleeping hours across age, sex and residential status.

Short sleep duration has significant association with younger age group and engagement in physical activity, whereas long sleep duration has significant association with lower educational status. It again indicates towards occupational engagement of young people. In fact, sleep deprivation in young adults has also been reported in other studies (Zitting et al., 2018), where Asian reported shorter duration of sleep than the other (Lo, Leong, Loh, Dijk & Chee, 2014), however, in spite of short sleeping hour they feel less tired and have better health than western people, as their remain influence of culture in sleeping habit (Cheung, Takemura, Ou, Gale & Heine, 2021). In the study too majority of people with short sleep reported to be satisfied with their sleeping hour.

In health trait increment of BMI values occur from long sleep to short sleep and it differ significantly between groups for both male and female. It has been well reported that short sleep duration has association with obesity (Beccuti & Pannain, 2011), although the mean value of BMI in the study remain in normal range for short sleeper but they exhibit trends towards gaining weight. Also, mean values of systolic and diastolic blood pressures are higher for short sleeper than the rest and here also association between blood pressure and sleep disturbance is well reported (Makarem et al., 2021). However, sleeping hour and associated factors still remain a less explored area in India both for indigenous and non-indigenous people. Thus, Akhtar and Mallick (2019) argued urgent requirement of national sleep policy in India to address the issue, as the prevalence of sleep related disorder are high and increasing.

Generally indigenous group tend to sleep shorter than non-indigenous group (Johnson et al., 2019; Samson et al., 2017) where cultural as well as socio-economic disparities play a notable role. But the study indicates short sleep duration prevails among indigenous group too and it has association with socio-economic traits. However, the area is still less explored, where attention is required as sleep related health problem are arising even among the indigenous group. The study although explored the situation in a smaller group and include only night time sleep duration but able to extract the condition in different socio-economic status and also among different age groups. It holds the notion that awareness generation regarding lifestyle modification is required, especially among young people to reduce the sleep related problem subsequently.

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