

## Time of Birth in Relation to Wake up Time and Feeling of Refreshed: A Micro Survey Study

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*Abstract: Sleep is a natural state of rest during which consciousness is suspended. It is influenced by numbers of reasons including physiological and psychological factors. Still circadian rhythms set at the time of birth might be clue for early wake up time or late wake up time. A correlation of 0.316 is observed in feeling of refreshed with reference to time of birth. 55.56% volunteers revealing feeling of not refreshed were adjunct to specific time period of birth i.e., 12- 19.59.*

**Keywords:** Sleep, birth time, circadian rhythm, feeling of refreshed after night sleep.....

Sleep is a natural condition or state of periodic suspension of consciousness to restore the powers of the body<sup>1</sup>. It is a resting state in which body usually is not active and the mind is unconscious<sup>2</sup>. It is essential part of daily routine for proper physiological functioning. *Charak Samhita* details sleep as state when combined soul goes to resting stage from mind and sense organs stops to work<sup>3</sup>. It is essential for happiness, health etc.

It is observed that time for going to the state of sleep is followed by daily cycle, called as circadian rhythm. Circadian rhythms determine sleep pattern<sup>4</sup>. Based on circadian clocks' effect on sleeping time, people are classified as larks (morning people with preferences to sleep and wake early) and owls (evening people with preferences to sleep late night and wake at late)<sup>5</sup>.

These sleeping and waking preferences are affected by environmental factors<sup>6</sup>, health status, diseases<sup>7</sup>, job compulsion etc. Still birth may be an initial factor for setting up of such circadian rhythm related with sleep and waking pattern<sup>8</sup>. 'People born during day time shines well', a quote of rural Bihar may be indication behind the early wake up time as Ayurveda suggests to wake up early too. Wake up time is highly correlated with sleep time, body's master clock as circadian rhythm guides information from optic nerves to brain through suprachiasmatic nucleus (SCN)<sup>9</sup> which is responsible for generating many neuronal and hormonal activities related with various body functions. SCN may also be responsible for late sleep but early wake up time as per stored information, but such condition may bring fatigue or lack of energy throughout the day in working periods. Yet many of people are observed working energetically. Does it mean that circadian clock set at time of birth work for the purpose? To understand the relationship of birth time with sleep time, present work is opted.

**Materials and Methods:** Self-assessment questionnaire was framed based on work of Horne and Ostberg (1976)<sup>10</sup>. For the work, 201 BAMS students studying in 1-4<sup>th</sup> years in *A.L.N. Rao Memorial Ayurvedic Medical College* from both sexes were selected. They were given with time of 2 days to fill the forms after concerning their parents and birth certificates provided by hospitals at time of their birth. Birth time was set in framework with interval of four hours as:

- |    |               |    |               |
|----|---------------|----|---------------|
| 1. | 00.00 - 03.59 | 2. | 04.00 – 07.59 |
| 3. | 08.00 – 11.59 | 4. | 12.00 – 15.59 |
| 5. | 16.00 – 19.59 | 6. | 20.00 – 23.59 |

Wake up time for both in working days and holidays was set and they were leveled as:

- |    |               |    |                      |
|----|---------------|----|----------------------|
| 1. | 04.00 – 05.59 | 2. | 05.59 – 7.59         |
| 3. | 08.00 – 9.59  | 4. | 10.00 or after 10.00 |

About the feeling of refreshed or energetic after night sleep, it was asked to reply in yes (Y) or no (N).

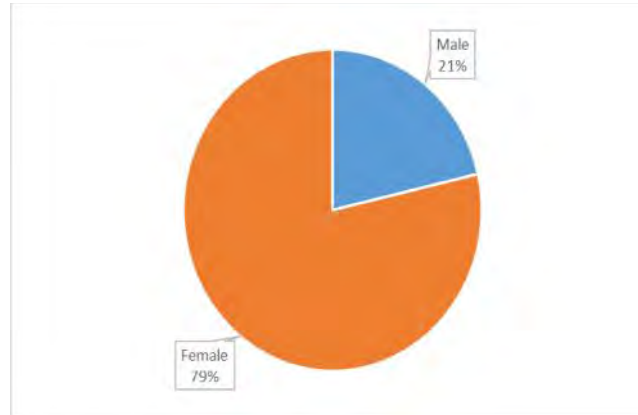
**Inclusion:** All students between 17-26 years age

**Exclusion:** Anyone below 17 years and above 26 years, having any physiological or pathological problem

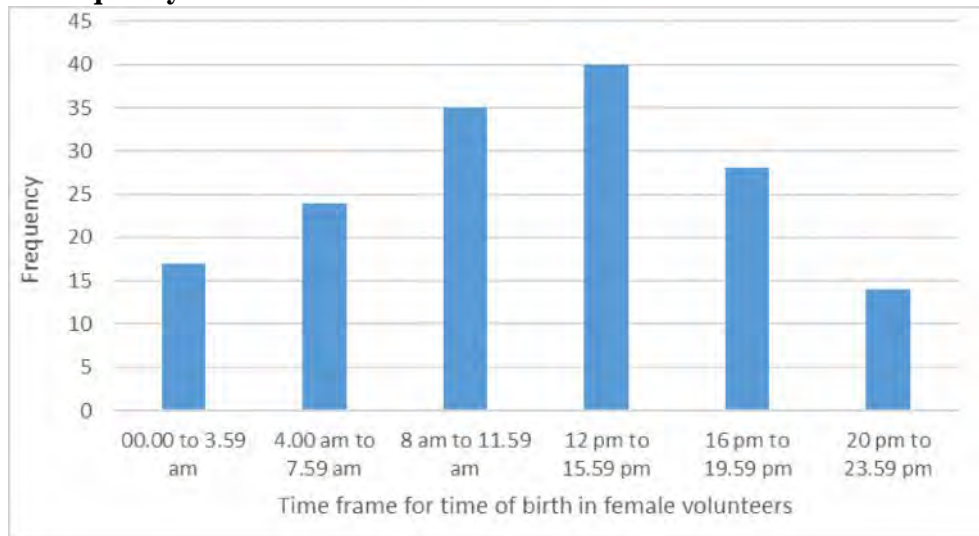
**Statistical Analysis:** For birth time in respect to feeling of refreshed, Spearman's correlation was done. Other relationships viz., birth time frame to wake up time frame in working days and in holidays in male and female volunteers, birth time frame with not refreshed after night sleep etc. were presented through bar-charts.

**Observation:**

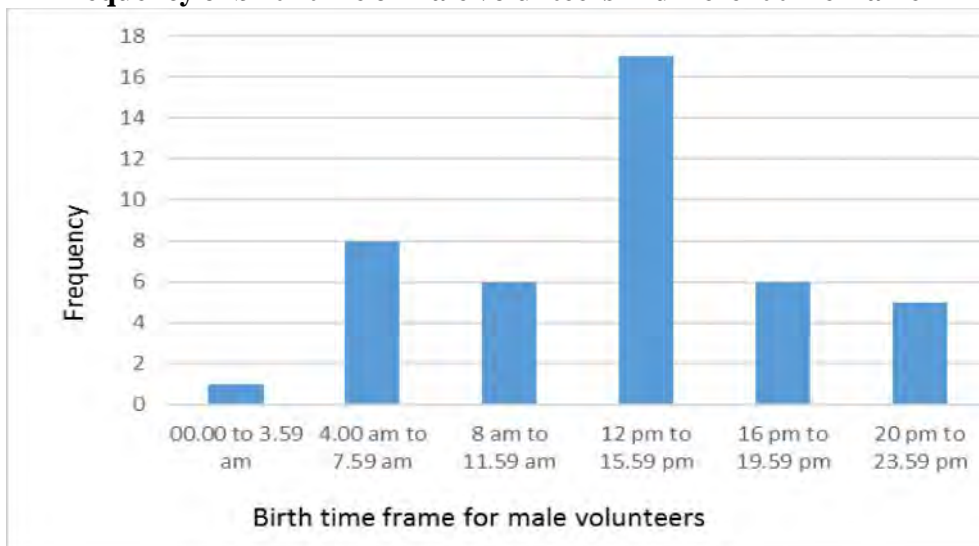
**Chart Number: 1**  
**Proportion of volunteers based on gender**

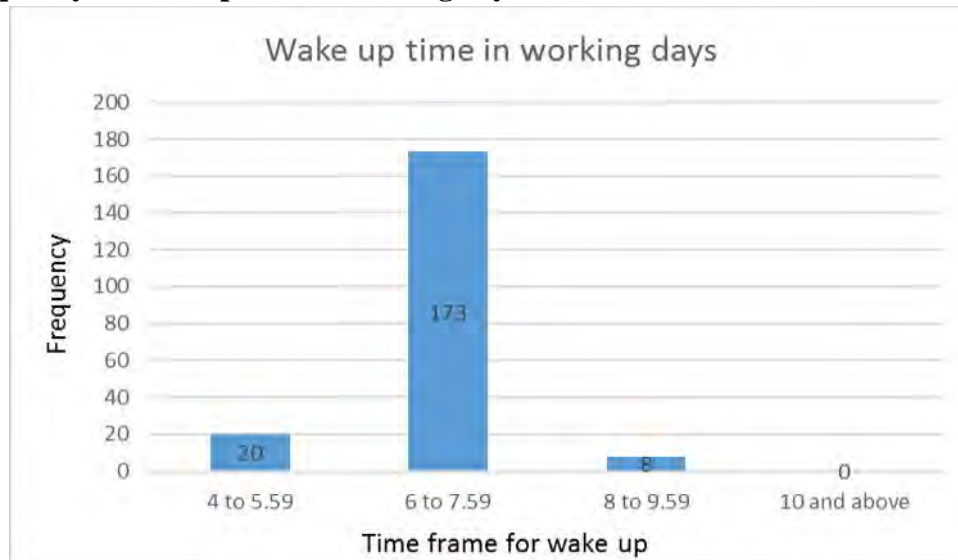
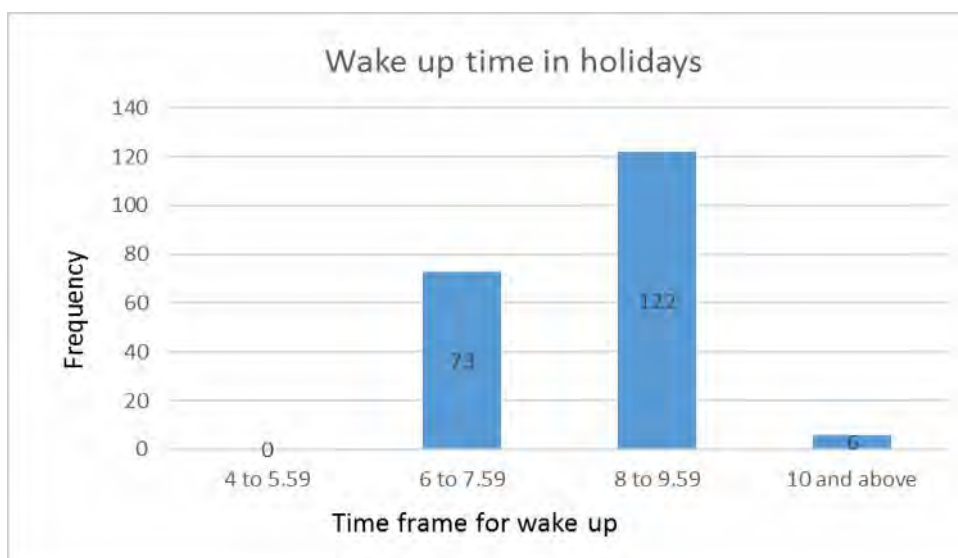
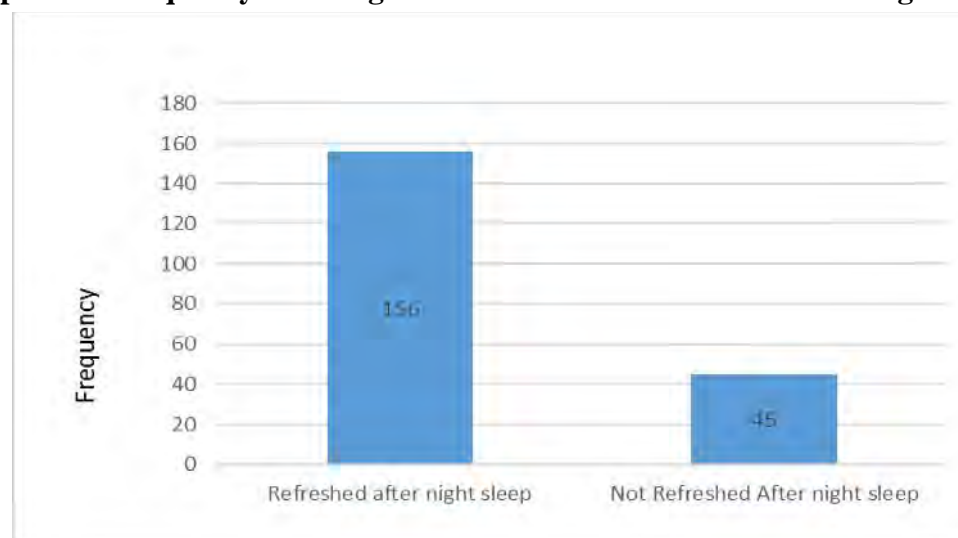


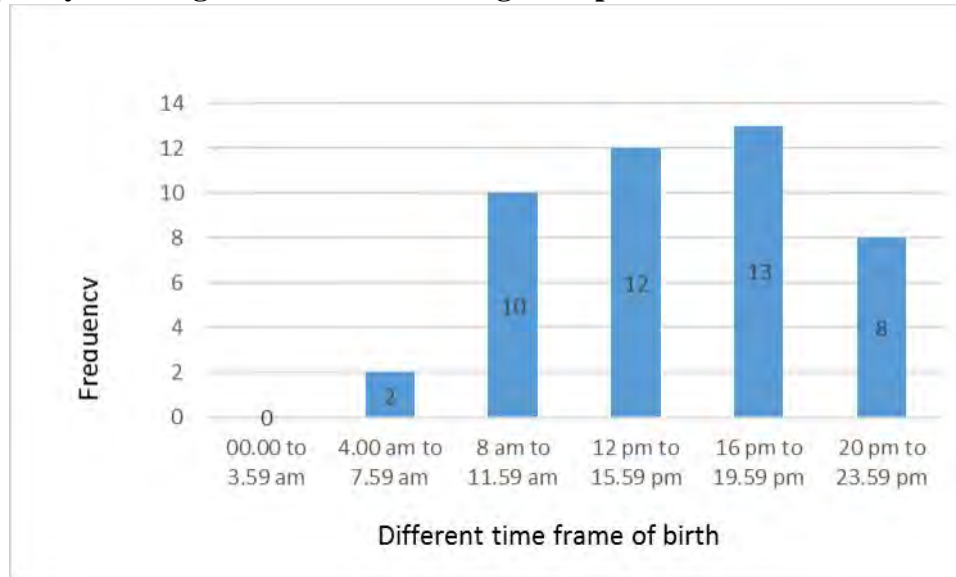
**Chart Number: 2**  
**Frequency of birth time of female volunteers in different time frame**



**Chart Number: 3**  
**Frequency of birth time of male volunteers in different time frame**



**Chart Number: 4****Frequency of wake up time in working days of volunteers in different time frame****Chart Number: 5****Frequency of wake up time in holidays of volunteers in different time frame****Chart Number: 6****Comparative frequency of feeling of refreshed and not refreshed after night sleep**

**Chart Number: 7****Frequency of feeling not refreshed after night sleep in different time frame of birth****Table Number: 1****Showing correlation of refreshed after night sleep****Correlations**

		Birth Time	Refreshed after night sleep
Spearman's rho	Birth Time	1.000	.316**
	Correlation Coefficient		
	Sig. (2-tailed)	.	.000
	N	201	201
Refreshed after night sleep	Birth Time	.316**	1.000
	Correlation Coefficient		
	Sig. (2-tailed)	.000	.
	N	201	201

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Discussion:** 79% females and 21% males participated in survey study as more of females are joining this course of BAMS in comparison to males. Based on birth time provided by volunteers, maximum birth recorded in time frame of 12 to 15.59 being 40 females and 17 males (total 57) followed by 41 total volunteers during time frame of 8 – 11.59. Minimum births are observed during 0 – 3.59 being 18 while 19 were observed under time frame of 20 – 23.59. As observed from data provided, 48.76% births are in between 8 o clock morning to 15.59 early evening or late afternoon. Timing of deliveries indicate interesting finding as in 90% of cases labour pain starts during vata period i.e., 2-6 am or 2-6 pm. However, it is not examined, still assumption is there that timing of cesarean deliveries are related with pitta period in maximum cases i.e., 10 am to 2 pm or 10 pm to 2 am.

Wake up time during working days does not give proper idea about circadian rhythm set during birth time as compulsion to attend classes make students to rise early. 86.07% volunteers wake up in time frame of 6 am to 7.59 am followed by 9.95% in early morning between 4 am to 5.59 am. Only 3.98% volunteers were recorded to get up after 8 am. But in holidays' data reveal the real story as 60.70% volunteers wake up in time frame of 8 am to 9.59 am followed by 36.32% in time frame of 6 am to 7.59 am. Awakening time of 2.96% volunteers are observed in time

frame of above 10 am. None of them woke up before 6 am in holidays. Feeling of relaxation may be the reason behind this as apparent from another figure showing the feeling of refreshed after night sleep. 77.61% of volunteers expressed refreshed after night sleep while 22.39% revealed as not refreshed after night sleep. Feeling of refreshed after night greatly depends upon the time of sleeping which means minimum 7-8-hours sleep is essential. A complete sleep cycle lasts in 90 minutes, during which five stages of sleep are completed<sup>11</sup>. It is number of sleep cycles which determines feeling of refreshed upon waking<sup>12</sup>. Sleep cycles are well under influence of number of factors viz., psychological, psychosocial, physical, cultural, ethnicity etc.<sup>13</sup> Gene or relation of set time for circadian rhythm at the time of birth may be contributing factor but it is important one which is needed to be explored. Astrological factors or impacts of rays of different planets at the time of birth is always calculated in vedic astrology, still scientific proofs or data are not collected in these regards. In present study volunteers were observed with average sleeping time of 7-9 hours per day, however it is not exposed in observation portion.

Spearman's correlation coefficient of 0.316 was noted for correlation between feeling of refreshed after night sleep and birth time. It shows positive correlation of birth time with feeling of refreshed with significant values at 0.01 level, however strength of correlation is not so strong. Among the volunteers with feeling of not refreshed, 28.89% was belonging to birth time frame of 16 to 19.59 while 26.67% were from time frame of 12 to 15.59. It means 55.56 % volunteers of this group were part of birth time from 12 to 19.59. A study conducted in mice have already shown the relationship of birth in different seasons with circadian rhythms. It is shown that gene regulating the circadian rhythms are less active during winter season<sup>14</sup>. Similar effects may be related with time of birth which is subject for further exploration.

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