



A Study of Causes and Effects of Insomnia in +2 Students located in Patna district

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Abstract : *The objective of the present study entitled "A Study of Causes and Effects of Insomnia in +2 students located in Patna district" was to understand the causes of Insomnia in +2 students and to explore the relationship between insomnia and other variables like – anxiety, aggression and adjustment amongst these students. The Independent variable was Insomnia whereas anxiety, aggression and adjustment were the dependent variables in this study. To test the relationship*

between Insomnia and the other variables, six hypotheses were formulated. Sample consisted of 300 students of +2, age ranging between 16 to 18 years. The data was collected from various schools located in Patna district. Insomnia Severity Index (ISI), Comprehensive Anxiety test (CA Test), Aggression Scale (AS), Youth Problem Inventory (YPI) and Self-Prepared Questionnaire (SPQ) were the research tools used for data collection. The result was analyzed by computing mean, S.D., t-ratio, co-efficient of correlation and by constructing tables, bar charts and pie charts. Results indicate a presence of 'Sub-threshold' insomnia amongst the +2 students. A significant positive correlation (0.44) was found between insomnia and aggressive tendency. It was also observed that level of insomnia in adolescents is affected by the excessive exposure to electronic media. A not significant correlation (0.17) was found between insomnia and adjustment. Results indicated a high positive correlation (0.94) between insomnia and anxiety. A significant difference was found between the level of insomnia in female and male adolescents. Proper guidance to the parents and teachers and awareness among the students were some of the suggestions given by the researchers.

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Introduction:

Adolescence, marked by the physiological signs and surging sexual hormones of puberty, is the period of maturation between childhood and adulthood. It is a transitional period in which peer relationships deepen, autonomy in decision making grows, and intellectual pursuits and social belonging are sought. *Insomnia* is difficulty in initiating/maintaining sleep or non-restorative sleep accompanied by decreased daytime functioning, such as fatigue/malaise, daytime sleepiness, mood disturbance/irritability, motivation/energy/initiative reduction and attention/concentration/memory impairment, persisting for a period of at least four weeks. *Anxiety* is defined as a diffuse, vague, very unpleasant feeling of fear and apprehension, often accompanied by the autonomic symptoms such as headache, perspiration, stomach discomfort and restlessness indicated by an inability to sit/ stand still for long. *Aggression* is defined as physical or verbal behavior intended to hurt someone. *Adjustment* is to fit, make suitable, adapt, arrange, modify, harmonize or make correspondent.

Sleep deprivation in teenagers can cause irritability, moodiness and difficulty learning and concentrating, thus affecting teenagers' school performance. An even more serious effect of insomnia is that it can be a prelude to depression or anxiety disorder. Lack of sleep can cause mood swings, cognitive problems or impulse control issues and can affect mental and physical performance. Sleep loss negatively affects the prefrontal cortex of the brain, which governs impulse control. Learning issues and inability to retain information (e.g., poor recall or memory) may be related to lack of sleep. Anger, depression, weight gain, reduced immunity, diabetes and emotional issues have all been associated with sleep deficits. Consequences of insufficient sleep in adolescents also include missed school, sleepiness, tiredness and decreased motivation.

Purpose:

Life of adolescents is becoming increasingly hectic and complicated .In the world of technology and cut throat competition, they are openly susceptible to various anxiety disorders, adjustment disorders, eating disorders, sleep disorders. These may cause the adolescents to lead a poor quality of life . Teenage insomnia is one of the most dominant causes of disturbance in the adolescent life. It is more rampant than we understand and is the reason behind a lot of disorders in adolescents.

The researchers selected this topic for the following purpose:

- To find out the level of insomnia that exists in the +2 school students of Patna district.
- To find out the relationship between insomnia and aggressive tendencies exhibited by the adolescents.
- To find out whether the exposure of the adolescents to the electronic media is in any way responsible for or aggravates in the insomnia in adolescents.
- To find out the relationship, if any, between insomnia and adjustment problems in adolescents.
- To find out the relationship between insomnia and anxiety in adolescents.
- To find out the difference between the levels of insomnia in male adolescents and the female adolescents.

Hypotheses:

The following hypotheses were formulated:

1. Level of insomnia will be high in +2 students.
2. There will be a positive correlation between aggressive tendencies and insomnia.
3. The cause of insomnia will be related to the lifestyle of the students.

4. There will be a significant positive correlation between youth problem and insomnia.
5. There will be a positive correlation between insomnia and anxiety.
6. There will be significant difference between the level of insomnia in female and male +2 students.

Methodology:

- **Sample:** A sample of 150 male and 150 female +2 students, age ranging between 16–18 years was selected from Patna Central School (N = 50); B.D Public School (N = 60); D.A.V High School (N = 30); Krishna Niketan (N = 65); Radiant International School (N = 60); St. Xavier's High School (N = 35) located in Patna district by purposive-cum-incident sampling method.
- **Research Tools:** The following research tools were used for data collection:
- **Insomnia Severity Index (ISI)** constructed by Charles Morin (PhD et al). This test was used to categorize the sample, according to the level of insomnia they show, into four categories of insomnia i.e., not clinically significant insomnia, sub-threshold insomnia, moderately severe insomnia, and severe insomnia.
- **Comprehensive Anxiety Test (CA Test)** developed by Dr. R. L. Bhardwaj, Dr. H. Sharma and Dr. M. Bhargava. This test was used to measure the comprehensive anxiety of the students.
- **Aggression Scale (AS)** developed by Dr. R.L. Bharawaj. This test was used to

assess the level of aggression present in the adolescents of the sample.

- **Youth Problem Inventory (YPI)** constructed by Dr. (Mrs.) Verma was used to measure the level of adjustment problems shown by the adolescents in these four areas – family, school/college, social and personal and over sensitivity.
- **Self-prepared Questionnaire (SPQ)** was constructed by the researchers under the supervision of their project supervisor. This questionnaire was constructed to get an insight into the lifestyle of the students, i.e. to find out the extent of their exposure to electronic media.
- **Procedure of Data Collection:** Data collection was done over a period of fourteen days from various schools located in Patna district. A question set comprising five abovementioned questionnaires were distributed among the students of the schools. They were given clear instructions and were explained the objectives of the research project. Due to their hectic school schedules, they were allowed to take the questionnaires back home, fill it up and bring it back the next day. The filled up questionnaires were collected from the students the next day.

Result & Interpretation:

Mean, Standard deviation, Critical ratio (t-ratio) and Co-efficient of correlation (r) by Product Moment method (calculated with the help of a linear scatter diagram) were computed for the analysis of the data.

Hypothesis Number 1: Level of Insomnia will be high in +2 students.

Table Number I : Table showing the categories of insomnia and the number of adolescents falling in each category { on the basis of the scores attained by them on the scale of Insomnia Severity Index (ISI) }.

Categories of Insomnia	Clinical Insomnia (Severe)	Clinical Insomnia (Moderate Severity)	Sub-Threshold Insomnia	Not Clinically Significant Insomnia
Scores Range	22–28	15–21	8–14	0–7
N	3	37	13	147
Percentage	1%	12.33%	37.67%	49%

- For the analysis of Hypothesis number 1, the scores attained by the students on the scale of Insomnia Severity Index (ISI) were computed and then the students were placed in the four categories of Insomnia – “Not Clinically Significant Insomnia”, “Sub-threshold Insomnia”, “Clinical Insomnia (Moderately Severe)” and “Clinical Insomnia (Severe)”, on the basis of their scores which is presented in tabular form in Table Number I.
- Table Number I reveals that 49% of the sample, i.e. 147 students show “Not clinically significant Insomnia.” This implies that these students either show no insomnia or very low presence of insomnia. Out of the 51% of the sample that show presence of Insomnia, majority of the students, i.e. 113 students show Sub-threshold insomnia. 37 students show Moderately Severe Clinical Insomnia and 3 students show Severe Clinical Insomnia. Thus Table Number I partly supports Hypothesis Number 1.

Figure showing the different categories of Insomnia and the numerical distribution of adolescents in each category

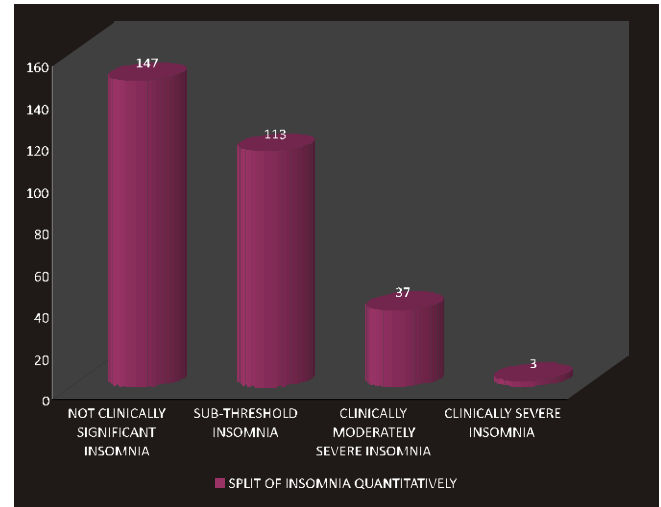


Figure Number I

Hypothesis Number 2: There will be positive correlation between aggressive tendencies and insomnia.

Table Number II : Table showing the Mean, Standard deviation (SD), Coefficient of correlation, dF and Level of significance of the scores attained by the adolescents on Aggression Scale (AS) and on the scale of Insomnia Severity Index (ISI).

	N	Total Obtained Score	Mean	SD	r (Correlation)	dF	Level of Significance
Aggression	300	20595	68.65	15	0.44	298	P > 0.01*
Insomnia	300	2230	7.43	5.8			

*Table value at 0.05 level = 0.138; at 0.01 level = 0.181

Significant at 0.01 level.

- For the analysis of Hypothesis number 2, Product moment co-efficient of correlation was computed with the help of a scatter diagram, which is presented in tabular form in Table number II.
- Result Interpretation of Table Number II reveals a positive correlation (r = 0.44) between the scores attained on the scale of Insomnia Severity Index and Aggression Scale. A positive correlation between the two variables indicates that if a student shows the presence of insomnia he/she will also show high levels of aggressive tendencies.

- The obtained r value among the scores of Insomnia and Aggressive tendencies was 0.44 which is more than the table value on both 0.05 and 0.01 levels. Thus the correlation between the two variables was significant at 0.01 level.

- The significant correlation between the two variables – insomnia and aggression proves the second hypothesis.

Hypothesis Number 3: The cause of Insomnia will be related to the lifestyle of students.

Table Number III : Table showing the number of adolescents over-using a given electronic media.

	Internet Over users	Phone Over users	T.V Over Users	Computer games Over users	Any Technology Over users	0 Technology Over users
N	100	172	82	49	176	51

- For the analysis of Hypothesis Number 3, Table Number III was constructed. The table shows the number of students who over-use the electronic media such as – Internet, Phone, TV, Computer games etc.

- It was observed that the adolescents who used more mediums of electronic media for longer duration showed higher levels of insomnia. The findings clearly prove the third hypothesis.

The figure shows the number of electronic gadgets over used by adolescents and their respective mean of the scores on insomnia.

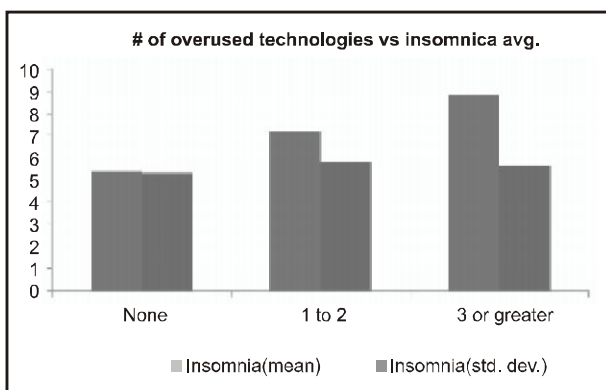


Figure Number 2

Hypothesis Number 4: There will be significant positive correlation between youth problem and insomnia.

Table Number IV : Table showing Mean, Standard deviation (SD), Coefficient of correlation (r), dF, Level of significance of the scores attained by the adolescents on youth problem inventory and on the scale of Insomnia Severity Index (ISI).

Group	N	Total Obtained Score	Mean	SD	r (correlation)	dF	Level of Significance
Adjustment	142	11914	83.9	39.89	0.17	140	P < 0.05*
Insomnia	142	625	4.4	2.5			

*Table value at 0.05 level = 0.174; 0.01 level = 0.228

Not Significant at 0.05 level.

- For the analysis of hypothesis number 4, product moment correlation with the help of a scatter diagram was computed which is represented in Table number IV.

- Result interpretation of Table number IV reveals a positive correlation (r = 0.17) between the scores of Insomnia and Adjustment which is less than the table value on 0.05 and 0.01 levels. So it can be said that the obtained co-efficient of correlation is not significant even at 0.05 level.

- Not significant co-efficient of correlation does not indicate that the hypothesis has been rejected. It indicates the need for further research.

This figure shows Mean and Standard Deviation of the scores attained by the adolescents on the Youth Problem Inventory (YPI) and on the scale of Insomnia Severity Index (ISI)

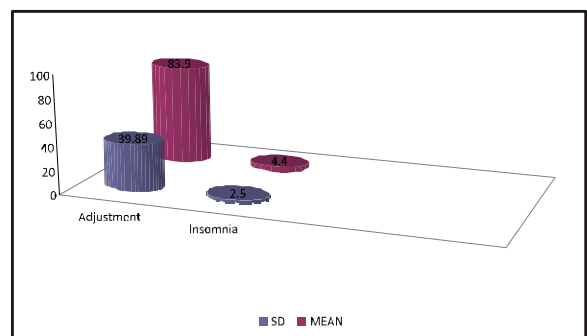


Figure Number 3

Hypothesis Number 5: There will be a positive correlation between insomnia and anxiety.

Table Number V : Table showing the Mean, Standard deviation (SD), Coefficient of correlation (r), dF, Level of significance of the scores attained by the adolescents on Comprehensive Anxiety (CA) scale and on the scale of Insomnia Severity Index (ISI).

Group	N	Total Obtained Score	Mean	SD	r (correlation)	dF	Level of Significance
Anxiety	300	9295	30.983	14.9	0.94	298	P > 0.01*
Insomnia	300	2230	7.43	5.8			

*Table value at 0.05 level = 0.138; at 0.01 level = 0.181

Significant at 0.01 level.

- For the analysis of Hypothesis number 5, product moment correlation with the help of a scatter diagram was computed. The result obtained has been represented in Table number V.

- Result interpretation of Table number V reveals a positive correlation (r = 0.94) between the scores of Insomnia and Anxiety. Positive correlation between the two variables indicates that if a student shows the incidence of insomnia, he/she will also show high level of anxiety.

- The obtained r value is supporting the hypothesis number 5. The r value among the scores of Insomnia and Anxiety was 0.94 which is more than the table value on 0.05 and 0.01 levels. Thus the correlation between the two variables was significant at 0.01 level.

- The significant correlation between the two variables – insomnia and anxiety proves the fifth hypothesis.

The pie chart shows the qualitative split of anxiety shown by adolescents suffering from sub-threshold insomnia.

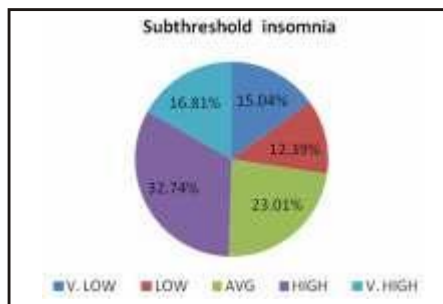


Figure Number 4

Hypothesis Number 6: There will be a significant difference between the level of insomnia in female and male +2 students.

Table number VI : Table showing the Mean, Standard deviation (SD), t-ratio, dF, Level of significance of the scores of female adolescents and scores of male adolescents on the scale of Insomnia Severity Index (ISI).

Group	N	Total Obtained Score	Mean	SD	t-ratio	dF	Level of Significance
Males	150	1056	7.04	5.56	3.50	298	P > 0.01*
Females	150	1173	7.82	6.03			

*Table value at 0.05 level = 1.98; at 0.01 level = 2.62.

Significant at 0.01 level.

- The hypothesis number 6 states that **there will be a significant difference between the level of insomnia in female and male +2 students.** The result which is shown in Table number VI reveals a total score of 1056 for male adolescents and a score of 1173 for female adolescents on the scale of Insomnia Severity Index.

- The mean value of the scores attained by the male adolescents on the scale of Insomnia Severity Index is 7.04 whereas that attained by the female adolescents is 7.82. On the basis of the mean value it can be interpreted that female adolescents are showing a higher level of insomnia as compared to the male adolescents. A higher mean suggests the presence of a higher level of insomnia.

- S.D of the scores of male adolescents is 5.56 and that of female adolescents is 6.03 which is high as compared to the mean of their respective scores. The high value of S.D shows a greater variability in the responses given by the adolescents.

- Since the difference between the mean of female and male adolescents was less, the

researchers were unable to come to a concrete result. So, in order to find out the significance of difference between the two mean t-ratio was computed.

- In Table number VI, the t-ratio between the means of female adolescents (7.82) and male adolescents (7.04) on the scores attained by them on the scale of insomnia was 3.50, which was more than the table values at 0.05 and 0.01 levels. Thus the t-ratio was significant.

- The significant t-ratio proves the hypothesis 6. There is a significant difference between the level of insomnia in female and male adolescents. Female adolescents show higher level of insomnia as compared to the male adolescents.

The figure shows the percentage of the sample showing severe/ moderately-severe insomnia on the basis of gender

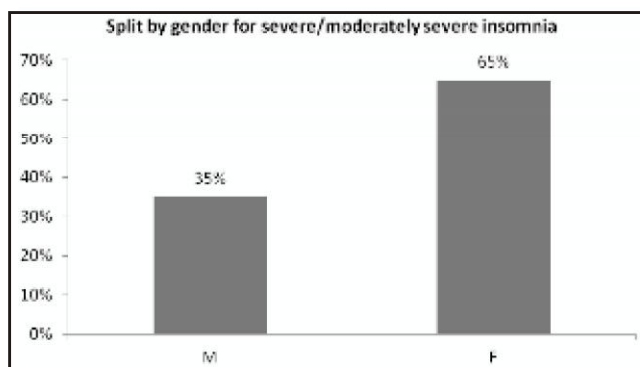


Figure number 5

Conclusions :

In the light of the findings of the present study and the obtained results, the following conclusions were drawn: -

- Only a few adolescents exhibit moderately severe insomnia. Even fewer adolescents of the research sample show severe insomnia. It was observed that on an average, the adolescents show a greater incidence of Sub-threshold Insomnia. This implies that the onset of insomnia has already occurred in the

sample, i.e. the +2 students are showing weak symptoms of Insomnia.

- A significant difference was observed between the mean of female adolescents and the mean of the male adolescents. A significant t-value indicates an actual difference between the level of insomnia amongst male and female adolescents.
- The findings of this research show a high positive correlation between insomnia and anxiety, i.e. it was determined that adolescents suffering from higher levels of insomnia also show higher levels of anxiety.
- It was also observed that there exists a positive correlation between insomnia and aggressive tendencies, i.e. adolescents showing a high level of insomnia will also show greater aggressive tendencies than those who are not suffering from insomnia.
- The findings of this study showed that there is no significant positive correlation between the scores of insomnia and the scores of adjustment attained by the adolescents. The low positive correlation found between these two variables is due to chance factor. As such, according to the findings of the study, insomnia does not have any role to play in the adjustment problems in adolescents.
- With the help of this study, an interesting finding surfaced. It was observed that excessive exposure to electronic media directly affected the level of insomnia in the adolescents of this research. Those adolescents who didn't use many electronic mediums showed very low incidence of insomnia, whereas those who used more than two electronic

mediums for longer hours showed a greater level of insomnia.

- A comparatively high value of Standard deviation in the scores of Insomnia shows that there is great variability in the responses given by the adolescents, i.e. the range of response given by the adolescents is quite diverse.

Suggestions:

On the basis of the obtained results and interpretations the researchers have certain suggestions:-

- Parents should restrict their children from using electronic gadgets for longer hours. They should ensure that the adolescents do not spend too many hours using the electronic media. It will help reduce the incidence of insomnia.
- Parents should take special care to stop their children from engaging in stimulating activities like playing games, watching T.V etc. 30 to 60 minutes before their bed time. Care should also be taken to restrict the consumption of junk food and caffeinated drinks an hour before bed time. Simple and light dinner should be provided to the adolescents.
- Adolescents should be encouraged to practice Yoga, Meditation, Breathing exercises and Reiki for relaxation.
- Parents and teachers should dedicate more time and support to the adolescents and tend to their emotional needs better.
- Healthy communication between the adolescents and parents/teachers should be encouraged as it helps in dealing with anxiety.
- Parents or teachers should not support the aggressive behavior of adolescents as it leads to Insomnia.

- Adolescents should also take positive steps towards enhancing their personality. They should strive to do things that are beneficial to them, their parents and the society to which they belong.
- The present variables like insomnia, anxiety, aggression and youth problems are so important for human beings that the work needs to be done on a larger sample so that the result can be applied to the population.

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