Effectiveness of Sleep Promotion Education Regarding Quality of Sleep among Adolescents in Selected Schools of Doiwala Block, Dehradun, Uttarakhand

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Abstract

Background of the study: Adolescents is the stage in which an individual grow and develop physically and psychologically from puberty to legal adulthood. The study aimed to assess the effectiveness of sleep promotion education regarding quality of sleep among adolescents in selected schools of Doiwala Block, Uttarakhand.

Method: Quantitative research approach was adopted for present study. Total 260 adolescents were selected through total enumerative sampling technique. Data was collected by administering tool to the participants. Tool consists of socio- demographic Performa, Pittsburgh Sleep Quality Index. The data was analyzed by using descriptive and inferential statistics.

Results: This study showed that sleep promotion education improved significant improvement in sleep quality from baseline mean 7.22 to 4.81; p< 0.001 post interventions as measured by Pittsburgh sleep quality index. The results showed that mean score is decreasing from pre interventions to the third week of post interventions which means that sleep promotion education was effective in improving the sleep quality of adolescents. There was no significant association between pre-test quality of sleep scores among adolescents regarding sleep promotion education with selected demographic variables tested at 0.05 level of significance.

Conclusion: The study concluded that the adolescents had inappropriate sleep quality for which sleep promotion education was given to the adolescents. Sleep promotion education improved the sleep quality of adolescents significantly after three weeks of education.

Keywords: Effectiveness; Sleep Quality; Adolescents; Sleep Promotion Education.

Introduction

Adolescents is the stage in which an individual grow and develop physically and psychologically

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from puberty to legal adulthood. There are various changes from childhood period to adolescence results in sleep loss during adolescence. Along with the pubertal changes the requirement of attending school early affects the sleep-wake schedule and quality of sleep. A study conducted by National sleep Foundation found that over 45% of adolescents obtain inadequate sleep. Maximum delay occurs in girls than boys [1]. Sleep problems are frequent in adolescents Worldwide, the prevalence of sleep problems among adolescents was 11% aged 13 to 16 years and 17% of the adolescents aged between 12-18 years. In Indian Scenario, the prevalence of sleep problems is 42.7% among adolescents. In Uttarakhand, the prevalence of sleep problems is 10-11% [2]. Sleep plays a major role in regulating daytime brain functioning and various biological processes of the body. Sleep also maintain cognitive

and psychological processes such as learning and memory consolidation[3].

Need for the Study

Health is the state in which various aspects such as physical, mental, social and spiritual are included. Mental health is the psychological state in which emotional and behavioral adjustment occurs at satisfactory level. Mental health can be maintained through maintaining sleep hygiene and prevent mental disorders through psycho-education, early treatment and public health measures. Sleep is the basic requirement of health and well being. Sleep health is the maintenance of average normal sleep pattern in order to prevent sleep disorders. A community based School survey conducted by Gupta R. et al. [4] among 1920 adolescents at Delhi which revealed that adolescents were suffering from sleep deficit of one hour per day and this progressed with higher grades. The results showed that adolescents with higher standard had taken less sleep that is a student studying in higher class is more sleep deprived than that of student studying in lower class in the school [4]. Quality of sleep among adolescents is affected by various factors. Although not much published data is available from India but the studies conducted in other countries show similar results. Adolescent is the period in which sleep problems arise so education regarding sleep help in dealing with sleep problems among adolescents promotes more effective changes in student's sleep pattern.

So the current study was taken up to assess the effectiveness of sleep promotion education regarding quality of sleep among adolescents in selected schools of Doiwala Block, Uttarakhand. Objectives of the Study were to assess the sleep quality among adolescents, to find out the effectiveness of sleep promotion education on sleep quality score among adolescents at selected schools of Doiwala block Uttarakhand and to find out the association between pre-test quality of sleep scores among adolescents regarding sleep promotion education with selected demographic variables.

Material and Methods

In the present study quantitative approach with quasi experimental design (Time- series design) was used. 260 adolescents were selected through total enumerative sampling technique from Govt. Inter college Bullawala, Dehradun, Uttrakhand Sleep Quality was measured using self reported

inventory that is Pittsburgh Sleep quality Index and demographic details were obtained using baseline data.

Results

Table 1: Frequency and percentage distribution of adolescents according to their selected demographic variables   n=260

Variables	Subject characteristics	Frequency (f)	Percentage (%)
Age in years	12-13	49	19
	14-15	131	50
	16-18	80	31
Gender	Male	148	57
	Female	112	43
Family style	Nuclear	157	60
	Joint	99	38
	Extended	4	02
Family income	2000-5000	167	64
	5001-8000	93	36
Use of drinks before sleep	Yes	142	55
	No	118	45
Use of items before sleep	Laptop	25	10
	Mobile phone	43	16
	Television	147	57
	videogame	45	17
Environment during sleep	Calm	167	64
	Dark	80	31
	Light	13	05
During last one month family problems	Never affected	55	21
	Affected a little bit	119	46
	Affected sometimes	81	31
	Affected frequently	2	01
	Affected always	3	01

Data presented in table 1 illustrate that the half of participants were in age group of 16-18 years i.e 50% and 19% of the participants were of age 12-13 years. Out of 260 participants, 57% were males, 60 % belonged to nuclear family. Two third of the participants i.e 64% having family income between 2000-5000. More than half of the participants i.e. 55% took drinks before sleep such as milk, tea, coffee. More than half of the participants i.e 57% used laptop and television before sleep. Two third of the participants i.e. 64% maintained calm environment during sleep and 5% of the participants maintained light environment. Less than half of the participants i.e 46%, suffered from family problems during last one month which affected their quality of sleep and 1% of the participants reported family problems

that affected quality of sleep frequently during last one month.

Table 2: Effectiveness of sleep promotion education on quality of sleep scores   n=260

S.N.	Levels	M±SD	F value	P value
1.	Pre test (Day 1)	7.22±2.17		
2.	Post test (After one week)	6.28±1.88		
3.	Post test (After two week)	5.47±1.54	468.25	0.001*
4.	Post test (After three week)	4.81±1.12		

F- repeated measures ANOVA

Hypothesis tested at 0.05 level of significance

* Significant

Table 2 depicts the mean and standard deviation of sleep quality scores of study participants at pre intervention, one week, two weeks and three weeks after intervention. The mean sleep quality score was statistically significant (F(1.800,466.08) = 468.25, p<0.001). This concluded that the mean post test score was decreased from pre test score which showed that the interventions which were given to the participants were beneficial.
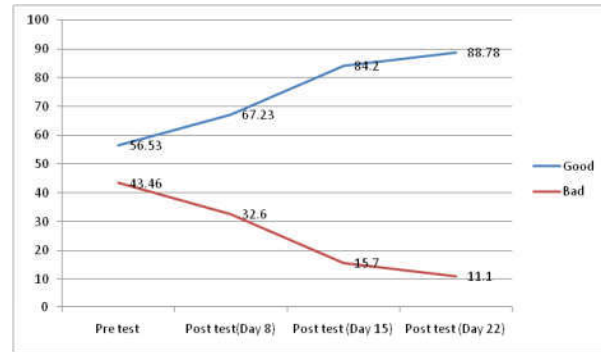

Fig. 1: percentage distribution of change in sleep quality scores before and after interventions.

The sleep quality scores was graded into two levels i.e. Good and poor sleep quality according to the interpretation of PSQI scale. The change in the frequency of participants having good quality and poor quality of sleep from pre interventions to post interventions is illustrated in Figure 1. The number of the participants having poor quality of sleep declined from 43.46% to 11.10% at baseline to the day 22nd after interventions. In contrast there was increase in number of participants with high sleep quality score from 56.53% to 88.78% at day 22nd after interventions. This suggested that the sleep quality scores of the participants were improved from baseline to post interventions.

Table 3: Association between sleep quality scores among adolescents with their socio- demographic variables   n=260

S.N.	Variables	Below median<7	Above and at ≤ 7	X^2	df	p value
1.	**Age (in years)**					
	12-13	45	74			
	14-15	41	61	3.181	2	0.220
	16-18	21	18			
2.	**Gender**					
	Male	44	80	3.147	1	0.079
	Female	63	73			
3.	**Family style**					
	Nuclear	67	86	3.106	2	0.184
	Joint	40	63			
	Extended	0	4			
4.	**Family income**					
	2000-5000	72	96	0.569	1	0.510
	6000-8000	35	57			
5.	**Use of drinks before sleep**					
	Yes	51	64	0.869	1	0.376
	No	56	89			
6.	**Use of items before sleep**					
	Laptop/mobile phone	19	25	0.118	2	0.971
	Television	82	120			
	Videogame	6	8			
7.	**Environment during sleep**					
	Calm	77	95	3.345	2	0.206

	Dark	25	44			
	Light	5	14			
8.	**Family problems in the past month**					
	Never	23	35			
	Little	49	70	2.302	4	0.732
	Sometimes	33	45			
	Frequently	2	1			
	Always	0	2			

Data depicted in table 3 illustrates that 'there was no statistically significant association between sleep quality scores among adolescents with their socio-demographic variables at 0.05 level of significance.

Discussion

The study findings illustrated that the mean sleep quality score of adolescents in pre test was 7.22 with standard deviation 2.17, after seven days of interventions the mean sleep quality score of adolescents was 6.28 with standard deviation 1.88, after 14 days of interventions the mean sleep quality scores of adolescents was 5.47 with standard deviation 1.54, after twenty one days of interventions the mean sleep quality scores of adolescents was 4.81 with standard deviation 1.12. The study findings were interpreted on the basis of Pittsburgh Sleep Quality scores which showed higher the sleep quality score, lesser will be the sleep quality and lower the sleep quality score, higher will be the sleep quality. The mean post intervention scores of sleep quality following one week (6.28±1.88), two weeks (5.47±1.54) and three weeks (4.81±1.12) of sleep promotion education was lower than the mean pre interventions score(7.22 ±2.17) of sleep quality. Findings showed that the post interventions sleep scores were decreasing from pre interventions scores which meant sleep promotion education improved the sleep quality of adolescents. The findings also showed that there was no significant association between sleep quality scores among adolescents with their socio-demographic variables at the level of 0.05 level of significance.

Conclusion

The study concluded that the adolescents had inappropriate sleep quality for which sleep promotion education was given to the adolescents. Sleep promotion education improved the sleep quality of adolescents significantly after three weeks of education. This suggests that the sleep quality scores of the participants were improved from baseline to post interventions.

Aknowledgement

References

1. How much sleep do we really need? http:// Sleepfoundation. org/how-sleep-works/how-much-sleep-do-we-really-need

2. Sleep in Adolescents .http://www.nationwide childrens.org/sleep_in_ Adolescents.

3. Leger D, Beck F, richard BJ, Godeau E. Total Sleep Time Severely Drops During Adolescence. Peer Review Open Access Journal. 2012 Oct;7(10):e45204

4. Gupta R, Bhatia SM, Chhabra V, Sharma S et al. Sleep Patterns of Urban School going Adolescents. Indian Pediatrics. 2008 March;45(8):183-89.