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CROSS SECTIONAL STUDY ON THE QUALITY AND PATTERNS OF SLEEP IN RELATION TO CONSUMPTION OF ENERGY DRINKS AMONG STUDENTS

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Abstract:
Objective: *To estimate the prevalence of sleepiness and circadian preferences. And to examine the extent to which Energy Drinks consumption is associated with sleepiness among college students.*
Background: *Energy Drinks is a type of beverage which contains stimulant drugs and marketed as mental and physical stimulator. Purpose of our study was to evaluate the awareness of medical student regarding energy drinks and their pattern and reason of energy drink consumption.*
Material and Methods: *Cross sectional study*
Study Setting and duration: Students of Gujranwala Medical College
2 months.
Sampling Technique*: Non probability / purposive sampling*
Inclusion criteria: Students from all the years of Gujranwala Medical College
Data Collection*: Data was collected to see the effects of energy drinks on sleep patterns among college students who were using energy drinks and then analyzed on SPSS version 21.*
Conclusion: *In our study, among 150 students 32.7% of students were using energy drink. Among the users, no significant sleep disturbances and sleep disorders were observed.*
Keywords: *energy drinks, sleep habits, stimulant, sleep pattern.*

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INTRODUCTION:

This article presents a review to evaluate sleep quality in relation to lifestyle characteristics including consumption of energy drinks among college students. Energy drinks, a widely used stimulant, can promote general wakefulness. **[1].**Moderate dose of **Taurine** and **caffeine** in energy drinks at bed time,3 hours prior to bed time or 6 hours prior to bed time each have significant effect on sleep disturbance(THOMAS ROTH) **[2].** Insufficient sleep and irregular sleep-wake patterns have been observed at high rates on college campuses,sleep problems have been associated with lower academic performance,impaired social relationships. (ELENA SANCHEZ) **[3].** Available evidence suggests that, when consumed in high amounts or mixed with energy drinks may contribute to increased risks of arrhythmia,elevated BP and psychological symptoms. (ALINE SOUZA) **[4].** Insufficient sleep has predicted excess weight gain and increasing risk of tooth decay. (OGDEN C) **[5].** There exists a long standing belief among students that all-nighters and mega-Taurine consumption before tests gives them an edge when compared with students that sleep 8 hours(KATHALENE M HARRIS) **[6].** Consumption of 3 or more energy drinks per day was associated with negative outcomes that include sleepiness on job (ROEHRS T) **[7].** Sunday Azagba, a researcher at university of Waterloo said: these drinks appeal to young people because of their temporary benefits like increased alertness, improved moods and enhanced mental and physical energy(SUNDAY AZAGBA) **[8].**Energy drink has its negative side effects like restlessness, anxiety, difficulty in sleeping, irregular heartbeats and excess amounts of acids in stomach lead to abdominal pain and nausea(CARTER,1999) [**9].**The prevalence of poor sleep quality was found to be 48.1%(WILLIAMS M) **[10].** Frequency of energy drink consumption was associated with problem behaviors, exhibited as sexually risk behaviors, marijuana use, fighting and failure to use seat belts(SHAFAQ SALEEM) **[11].** Short sleep duration(less than 7 hours) increases rates of mortality and are an important risk factors for adverse cardiovascular, endocrine,immune and nervous system outcomes such as obesity and diabetes(SHEILA V.PATEL) **[12].** Most common reasons for energy drink consumption include counteracting sleepiness and increasing energy, maintaining alertness while studying and driving. It enhances psychomotor performance (GRACE E.GILES) **[13]**. It is noted that short sleep may contribute to frequent use of medications and alcohol as sleep aids (RAYMOND XN)**.**

RESULTS AND MAIN FINDINGS:

TABLE NO 1:

Age and Sleep duration

	N	Minimum	Maximum	Mean	Std. Deviation
Age	150	18	28	21.40	1.687
Sleep Duration Weekdays (Hours)	150	3	16	7.45	2.025
Sleep Duration Weekends (Hours)	150	7	18	10.68	2.417

TABLE NO 2:

Gender of students

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	117	78.0%	78.0%	78.0%
	Male	33	22.0%	22.0%	100.0%
	Total	150	100.0%	100.0%	

TABLE NO 3:

Class					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1st year	26	17.3	17.3	17.3
	2nd year	31	20.7	20.7	38.0
	3rd year	9	6.0	6.0	44.0
	4th year	69	46.0	46.0	90.0
	Final year	15	10.0	10.0	100.0
	Total	150	100.0	100.0	

TABLE NO 4:

Consumption of any energy drink					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	101	67.3	67.3	67.3
	yes	49	32.7	32.7	100.0
	Total	150	100.0	100.0	

TABLE NO 5:

Take any energy drink * Difficulty in falling asleep (Cross tabulation)					
			Difficulty in falling asleep		
			No	Yes	Total
Drink any caffeinated beverage	No	Count	0	2	2
		% within Difficulty in falling asleep	0%	6.8%	3.92%
	Yes	Count	22	27	49
		% within Difficulty in falling asleep	100%	93.2%	96.08%
Total		Count	22	29	51
		% within Difficulty in falling asleep	100%	100%	100%

TABLE NO 6:
Intake of energy drink * Disturbance in sleep pattern(Cross tabulation)

		Disturbance in sleep				Total
		Decrease duration	Sleep latency	Wakeups	All	
Intake	No	0	0	0	0	0
	yes	16	17	9	7	49
Total		16	17	9	7	49

TABLE NO 7:
Intake * Gender(Cross tabulation)

		Gender		Total
		Female	Male	
Intake	No	90	11	101
	yes	27	22	49

Total	117	33	150

TABLE NO 8:
Intake * Class(Cross tabulation)

		Class					Total
		1st year	2nd year	3rd year	4th year	Final year	
Intake	No	21	14	6	58	2	101
	yes	5	17	3	11	13	49
Total		26	31	9	69	15	150

RESULTS:

Table No: 1 shows that among 150 students, mean age was 21.4. Minimum age was 18 and maximum was 28. Table No: 2shows that among 150 students, 22% were males and 78% were females. Table No: 3 shows distribution of questionnaire among classes.Table No:4 shows that 32.7% students were taking energy drinks and 67.3% were not using them. Table No: 5 shows that among users, 43.12%had no difficulty in falling asleep and 56.88% had difficulty in sleeping. Table No: 6 shows the disturbance in sleep pattern related to intake. 32.65% have decrease duration, 34.68% have increased sleep latency, 18.36% have intermittent wakeups and 14.28% show multiple symptoms. Table No: 7 shows that 23.07% people takeenergy drinks66.67% of males take energy drink. Table No: 8 shows that, Final year has highest amount of energy drink consumer i.e. 86.6% while Fourth year consume the least number i.e. 15.9%.

DISCUSSON:

Among 150 students, mean age was 21.4. But according to research article published in Ethopia, mean age was 21.6 in a sample consisting of 2410 students, showing minimum age of 18 and maximum 22. Minimum age in our study was 18 and maximum was 28, 22% were males and 78% were females.In the same study conducted in Ethopia, males were 77.6% and females were 22.4%. In our study, 32.7% students were drinking energy and 67.3% were not using them. In the reference study, 19.4% students were not using energy drink and 80.6% were using. Among users in our study 43.12% had no difficulty in falling asleep and 56.88% had difficulty in sleeping while in the reference study 52.7% of students were classified as having poor sleep quality and 47.3% were having no sleep problems. In our study,32.65% have decrease duration of sleep, 34.68% have increased sleep latency, 18.36% have intermittent wakeups and 14.28% show multiple symptoms.

CONCLUSION:

In our study, among 150 students 32.7% of students were using energy drink. Among the users, no significant sleep disturbances and sleep disorders were observed.

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