Original Research Article

Lifestyle Practices of Adolescents in a Tertiary Care Centre in India

Esther Kanthi[1], Ananthi Ebenezer[2], Reshmi YS[3], Jansi Rani[4], Mona Basker[5]

[1]Associate Professor, Paediatric Nursing, College of Nursing, Christian Medical College, Vellore
[2]Staff Nurse, Paediatric Nursing, Christian Medical College, Vellore
[3]Assistant Professor, Paediatrics III, Christian Medical College, Vellore
[4]Senior Demonstrator, Department of Biostatistics, Christian Medical College, Vellore
[5]Professor & Head, Paediatrics III, Christian Medical College, Vellore

Corresponding Author: Esther Kanthi

ABSTRACT

Introduction: Adolescents are individuals in the 10–19year age group; there are 253 million adolescents in India. Growth and development are predominant during adolescence, a relatively healthy time. Good diet, physical activity, sleep, and screen time are pillars of good health.
Aims & Objectives: To identify lifestyle practices such as diet, physical activity, sleep, and screen time among adolescents in the outpatient and inpatient services, Departments of Paediatrics and Paediatric Surgery, Christian Medical College, Vellore.
Methods: A descriptive study design employing a non-probability purposive sampling technique was used to recruit 1420 adolescents. Written consent and assent were obtained, demographic and clinical variables were collected using interviews, and the lifestyle practice was assessed using a modified YRBS questionnaire.
Results: 70.8% of the adolescents were in the age group of 10-14 years; males and females were almost equal (46.2 and 53.8%), 73.6% lived in nuclear families, and 19.4% had a BMI of 23 adult equivalent. Regarding diet in the past 7 days, 41.3% did not consume green/vegetable salads, and 89.7% of the adolescents ate breakfast daily, but the meals of 81.4% did not contain 25% carbohydrates. 42.2% did not meet the recommended 60 minutes of daily physical activity, and 51% were not a part of any sports team in the past year. Most (33.8%) of the adolescents slept for about 8 hours during the school days, but 68% reported difficulty falling asleep. Most participants (58.7% and 59.2%) stopped screentime just before sleep on weekdays and weekends.
Conclusion: Adolescence is when lifestyle behaviours that affect present and future health begin. Therefore, helping adolescents establish healthy lifestyles and avoid developing health risk behaviours is crucial and should be started before these behaviours are firmly established.

Keywords: Adolescents, Lifestyle, Diet, Physical Activity, Sleep, Screen time.

INTRODUCTION

The World Health Organization (WHO) defines 'adolescents' as individuals in the 10–19 age group[1]. WHO also states that about 1.2 billion adolescents comprise 1/6th of the world population, of which 85% are in developed countries[2]. The United Nations International Children's Emergency Fund (UNICEF) estimates that the world's largest adolescent population, 253 million, lives in India[3]. Growth and development

are predominant during adolescence, a relatively healthy time. Good diet, physical activity, sleep, and screen time are pillars of good health. There is a relationship between positive health outcomes and practices such as regular exercise, not smoking, maintaining an ideal weight, eating a well-balanced diet and managing stress[4–8].

Lifestyle practices among adolescents:

Diet: Eating healthy food is an essential aspect of a healthy lifestyle. It needs to be taught at a young age, like eating 3 balanced meals a day, with healthy snacks such as fruits/vegetables, baking/broiling food instead of frying, eating more chicken and fish instead of red meat, increasing fibre in the diet and decreasing the use of salt, drinking 8-10 glasses of water/day and avoiding drinks that are high in sugar[6]. Daily diet quality decreases in adolescence and remains suboptimal into adulthood[4]. Adolescents' dietary patterns are typically characterised by skipping meals, frequent snacking, and increased fast food consumption. The increasing prevalence of fast-food outlets, large-scale retail stores, and processed and convenience foods has made high-calorie and nutrient-poor foods and beverages more readily available and affordable. Parallel to these is an increasing acceptance and normalisation of these unhealthy food options because people want products that require little or no preparation. Poor eating habits and behaviours during adolescence increase the risk of obesity and other chronic diseases in adulthood[5].

In 2019, a nationwide State and local Youth Risk Behaviour Survey (YRBS) conducted in the United States of America (USA) revealed that 41.8% of school children had drunk 100% fruit juices or eaten fruit <1 time/day; 40.7% had eaten vegetables <1 time/day; 16.7% hadn't eaten breakfast on all 7 days; 15.1% drank sugar-containing soda or pop ≥1 time/day (not including diet soda or diet pop); and 10.6% consumed a sports drink ≥1 time/day[7].

Physical activity: The Centre for Disease Control and Prevention (CDC) suggests 60 minutes or more of moderate to vigorous physical activity daily, which includes 60 minutes every day of aerobic activities such as walking and running; 3 days/week of muscle strengthening exercises such as climbing, push-ups and 3 days/week of bone-strengthening exercises such as jumping or running[9]. Optimal nutrition and physical activity are essential for an adolescent's average growth and development and to prevent chronic diseases. Approximately 50% of adults in the USA suffer from chronic illnesses such as type 2 diabetes, cardiovascular diseases, or obesity, all of which are directly related to poor diet quality and inadequate physical activity. These illnesses affect productivity and quality of life and contribute to high health-care costs[1].

CDC analysed data from the 2019 YRBS to update estimates of dietary and physical activity behaviours among USA high school students, where 23.2% of school students had been physically active for ≥60 minutes/day on all 7 days; 25.9% had attended physical education classes on all 5 days/week when attending school; and 57.4% had played on ≥1 sports team[7].

Sleep: The National Sleep Foundation recommends 8-10 hours of sleep for adolescents. Adolescent sleep is a significant public health concern in many countries, with approximately 30-70% of adolescents in Europe and North America suffering from inadequate, inconsistent, non-resilient, interrupted, or suffer from insufficient sleep patterns, including poorly timed sleep. At least a quarter of adolescents have difficulty falling asleep at night and feel tired during the day. Adolescents have different sleep patterns on school and non-school days, with circadian sleep-wake cycles delayed by 2-3 hours compared to adults[10,11] - the early start of school conflicts with this circadian shift, resulting in less sleep during the week. Adolescents sleep more often on weekends and holidays[12–14]. This sleep discrepancy,

or social jet lag, is associated with health, behavioural and cognitive problems[15–18]. Overall, poor sleep is related to physical health problems such as colds, headaches, and obesity; psychological issues such as anxiety, depression, and suicidal thoughts; risky behaviour; poor academic performance; and poor quality of life. Inadequate sleep is also associated with inactivity and sedentary behaviour, including excessive screen time and poor diet, highlighting the need to integrate healthy sleep into adolescent wellness efforts[16–21].

A study to assess the sleep pattern, hygiene, and daytime sleeping among adolescents in Tamil Nadu revealed that over 64% of adolescents sleep for < 8 hours at night, and 5.6% sleep for <6 hours. 48% suffered from prolonged sleep onset latency, and 43% had interrupted sleep[22].

Screen time: American Academy of Paediatrics (AAP) recommends limiting the total entertainment screen time to <1 to 2 hours per day, discouraging screen media exposure for children <2 years of age, keeping the Television (TV) set and internet-connected electronic devices out of the child's bedroom, monitoring the media websites and social media sites the children are using and accessing, co-viewing TV, movies, and videos with children and teenagers, and use this as a way of discussing important family values and model active parenting by establishing a family home use plan for all media[23]. Indian Academy of Paediatrics (IAP) also recommends that children below 2 years of age should not be exposed to any screen. Exposure should be limited to a maximum of 1 hour/day of supervised screen time for children 24–59 months and <2 hours/day for children aged between 5–10 years. Screen time must not replace other activities, such as outdoor physical activities, sleep, family and peer interaction, studies, and skill development, necessary for children's and adolescents' overall health and development[24].

A community-based cross-sectional study was conducted in New Delhi on Screen-based media (SBM) use and screen time assessment among adolescents. The study revealed that 98% of the adolescents used SBM. TV is the most used medium (96.5%); the mean screen time was 3.8 hours/day. TV contributed 2.8 hours/day to the total screen time, followed by other SBMs. About 68% of adolescents reported more screen time than recommended (>2 hours)[25].

Diet, physical activity, sleep, and screen time practices developed during childhood can set adulthood trajectories. Establishing healthy habits early in life is a crucial public health strategy for promoting lifelong physical health.

Aim: The study aims to identify lifestyle practices such as diet, physical activity, sleep, and screen time among adolescents in the outpatient and inpatient services provided by the Departments of Paediatrics and Paediatric Surgery, Christian Medical College, Vellore.

Objectives: To assess the lifestyle practices among adolescents in Christian Medical College, Vellore.

MATERIALS & METHODS

A descriptive study was carried out at Christian Medical College, Vellore, to assess the lifestyle practices of adolescents. The study's inclusion criteria included adolescents between the ages of 10 and 19 years willing to participate and those receiving care from the Departments of Paediatrics and Paediatric Surgery outpatient and inpatient services. The study excluded adolescents with learning disabilities and those admitted to acute or critical care units. The research was methodically planned, and participants were chosen through a non-probability purposive sampling technique. Over 5 months, 1420 adolescents who met the inclusion criteria were studied. The parents and the adolescents gave their written consent and assent. The demographic and clinical variables were collected through interviews,

and the lifestyle questionnaire was presented as a self-administered tool with 21 questions. 8 items about diet, 3 items about physical activity, and 4 items about sleep were derived from the 2021 State and local YRBS, a widely recognised and reliable tool for assessing health-related behaviours among adolescents, and it was modified for cultural appropriateness. The investigators created the 6 items about the screentime with expert opinions from adolescent medicine professionals. The adolescents took about 15 minutes to complete the questionnaire, which was scored after completion. The safety and privacy of the participants were ensured throughout. There were no potential risks for the participants; moreover, after the questionnaire, the adolescents were taught about healthy lifestyle practices. Due permissions were obtained, and the confidentiality of the participants was maintained throughout. The data was collected in a consultation room and only by the principal and first co-investigator, thus minimising bias.

Statistical Analysis
All the statistical analysis was performed using Statistical Package for Social Sciences (SPSS) version 21.0. The categorical variables were represented as numbers and percentages.

RESULT

TABLE 1: Distribution of adolescents according to their demographic and clinical variables (N=1420)

Si. No	Demographic variables	Number (no)	Percentage (%)
1	*Age*		
	10-14 years	1005	70.8
	15-17 years	374	26.3
	18-19 years	41	2.9
2	*Gender*		
	Female	764	53.8
	Male	656	46.2
3	*Grade*		
	V standard	217	15.3
	VI standard	177	12.5
	VII standard	195	13.7
	VIII standard	209	14.7
	IX standard	228	16.1
	X standard	213	15.0
	XI standard	95	6.7
	XII standard	43	3.0
	College	43	3.0
4	*Religion*		
	Hindu	1043	73.5
	Christian	106	7.5
	Muslim	266	18.7
	Others	5	0.4
5	*Type of family*		
	Nuclear	747	52.6
	Joint	673	47.4
6	*Residence*		
	Rural	704	49.6
	Urban	710	50.0
	Tribal	3	0.2
	Others	3	0.2
7	*Socio-economic status (Kuppuswamy scale)*		
	Upper class	35	2.5
	Upper middle class	484	34.1
	Lower middle class	406	28.6
	Upper lower class	336	23.7
	Lower class	159	11.2

8	*Weight centile (IAP)*		
	3rd centile	176	12.4
	10th centile	214	15.1
	25th centile	270	19.0
	50th centile	267	18.8
	75th centile	228	16.1
	90th centile	162	11.4
	97th centile	103	7.3
9	*Height centile (IAP)*		
	3rd centile	147	10.3
	10th centile	183	12.9
	25th centile	283	19.9
	50th centile	305	21.5
	75th centile	235	16.5
	90th centile	171	12.0
	97th centile	96	6.7
10	*Body mass Index (BMI) centile (IAP)*		
	3rd centile	211	14.9
	10th centile	234	16.5
	25th centile	254	17.9
	50th centile	200	14.1
	23 adult equivalent	276	19.4
	27 adult equivalent	245	17.3
11	*Chronic illness*		
	No	1102	77.6
	Yes	318	22.4

TABLE 2: Distribution of adolescents according to their dietary habits (N=1420)

Sl. No	Diet	Number (n)	Percentage (%)
1	During the past 7 days, how many times did you drink 100% fruit juices such as orange juice, apple juice, or grape juice? (Do not count fruit punch, or other fruit-flavoured drinks like Rasna, Tang and other products)		
	A. I did not drink 100% fruit juice during the past 7 days	799	56.3
	B. 1 to 3 times during the past 7 days	461	32.5
	C. 4 to 6 times during the past 7 days	29	2.0
	D. 1 time per day	117	8.2
	E. 2 times per day	11	0.8
	F. $\geq$ 3 times per day	3	0.2
2	During the past 7 days, how many times did you eat fruit? (Do not count fruit juice)		
	A. I did not eat fruit during the past 7 days	255	18.0
	B. 1 to 3 times during the past 7 days	596	42.0
	C. 4 to 6 times during the past 7 days	56	3.9
	D. 1 time per day	453	31.9
	E. 2 times per day	57	4.0
	F. $\geq$ 3 times per day	3	0.2
3	During the past 7 days, how many times did you eat green or vegetable salad?		
	A. I did not eat green/vegetable salad during the past 7 days	586	41.3
	B. 1 to 3 times during the past 7 days	413	29.1
	C. 4 to 6 times during the past 7 days	54	3.8
	D. 1 time per day	322	22.7
	E. 2 times per day	33	2.3
	F. $\geq$ 3 times per day	12	0.8
4	During the past 7 days, how many days did your meal contain 25% of carbohydrates (rice including idly, dosai, potato and others)?		
	A. My meal did not 25% carbohydrates during the past 7 days	1156	81.4
	B. 1 day	19	1.3
	C. 2 days	10	0.7

	D. 3 days	12	0.8
	E. 4 days	14	1.0
	F. 5 days	13	0.9
	G. 6 days	20	1.4
	H. 7 days	176	12.4
5	During the past 7 days, how many times did you eat other vegetables? (Do not count green or vegetable salad, potatoes)		
	A. I did not eat other vegetables during the past 7 days	143	10.1
	B. 1 to 3 times during the past 7 days	389	27.4
	C. 4 to 6 times during the past 7 days	42	3.0
	D. 1 time per day	325	22.9
	E. 2 times per day	390	27.5
	F. ≥ 3 times per day	131	9.2
6	During the past 7 days, how many times did you drink a can, bottle, or glass of soft drinks, such as Coke, Pepsi, Sprite, 7up or Bovonto? (Do not count diet coke or pepsi)		
	A. I did not drink can, bottle or glass of soft drinks, such as Coke, Pepsi, Sprite, 7up or Bovonto during the past 7 days	939	66.1
	B. 1 to 3 times during the past 7 days	394	27.7
	C. 4 to 6 times during the past 7 days	25	1.8
	D. 1 time per days	47	3.3
	E. 2 times per day	7	0.5
	F. ≥ 3 times per day	8	0.6
7	During the past 7 days, how many glasses or cups of milk did you drink?		
	A. I did not drink milk during the past 7 days	511	36.0
	B. 1 to 3 glasses during the past 7 days	158	11.1
	C. 4 to 6 glasses during the past 7 days	34	2.4
	D. 1 glass per day	559	39.4
	E. 2 glasses per day	128	9.0
	F. ≥ 3 times per day	30	2.1
8	During the past 7 days, on how many days did you eat breakfast?		
	A. 0 days	30	2.1
	B. 1 day	9	0.6
	C. 2 days	29	2.0
	D. 3 days	13	0.9
	E. 4 days	29	2.0
	F. 5 days	21	1.5
	G. 6 days	15	1.1
	H. 7 days	1274	89.7

TABLE 3: Distribution of adolescents according to their physical activity (N=1420)

Si. No	Physical activity	Number (n)	Percentage (%)
1	During the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day? (Add up all the time you spent in any kind of physical activity that increased your heart rate and made you breathe hard some of the time)		
	A. 0 days	599	42.2
	B. 1 day	66	4.6
	C. 2 days	140	9.9
	D. 3 days	32	2.3
	E. 4 days	30	2.1
	F. 5 days	23	1.6
	G. 6 days	17	1.2
	H. 7 days	513	36.1
2	In an average week when you are in school, on how many days do you go to physical training (PT) classes?		
	A. 0 days	372	26.2
	B. 1 day	552	38.9
	C. 2 days	496	34.9

3	During the past 12 months, on how many sports teams did you play? (Count any teams run by your school or community groups) A. 0 teams B. 1 team C. 2 teams D. 3 or more teams	724 591 76 29	51.0 41.6 5.4 2.0

TABLE 4: Distribution of adolescents according to their sleep (N=1420)

Si. No	Sleep	Number (n)	Percentage (%)
1	On an average school night, how many hours of sleep do you get? A. 4 or less hours B. 5 hours C. 6 hours D. 7 hours E. 8 hours F. 9 hours G. 10 or more hours H. > 10 hours	15 31 99 249 480 383 121 32	1.1 2.2 7.0 17.5 33.8 27.0 8.5 3.0
2	During the past 30 days, where did you usually sleep? A. In my parent's or guardian's home B. In the home of a friend, family member, or other person because I had to leave my home or my parent or guardian cannot afford housing C. Somewhere else	1401 4 15	98.7 0.3 1.1
3	In a week how often do you feel sleepy during the day? A. 0 days B. 1 day C. 2 days D. 3 days E. 4 days F. 5 days G. 6 days H. 7 days	1003 56 112 65 18 73 25 68	70.6 3.9 7.9 4.6 1.3 5.1 1.8 4.8
4	In a week how often do you feel find it difficult to fall asleep after lying on the bed? A. 0 days B. 1 day C. 2 days D. 3 days E. 4 days F. 5 days G. 6 days H. 7 days	966 23 35 33 13 10 3 337	68.0 1.6 2.5 2.3 0.9 0.7 0.2 23.7

TABLE 5: Distribution of adolescents according to their screen time (N=1420)

Si. No	Screen time	Number (n)	Percentage (%)
1	On average, how many hours of electronic device (Television, smart phone, tablet, desktop, and laptop) usage per day are dedicated to school-related activities? Weekdays: _____ hours A. Less than 1 hour per day B. 1 hour per day C. 2 hours per day D. 3 hours per day E. 4 hours per day F. 5 or more hours per day	892 240 156 67 37 28	62.8 16.9 11.0 4.7 2.6 2.0
2	On average, how many hours of electronic device (Television, smart phone,		

	tablet, desktop, and laptop) usage per day are dedicated to school-related activities? Weekend: _____ hours		
	A. Less than 1 hour per day	932	65.6
	B. 1 hour per day	225	15.8
	C. 2 hours per day	137	9.6
	D. 3 hours per day	63	4.4
	E. 4 hours per day	30	2.1
	F. 5 or more hours per day	33	2.3
3	On average, how many hours per day are spent on watching TV/ smart phone/ tablet/ desktop/ laptop for entertainment/leisure? Weekdays: _____ hours		
	A. Less than 1 hour per day	473	33..3
	B. 1 hour per day	412	29.0
	C. 2 hours per day	273	19.2
	D. 3 hours per day	125	8.8
	E. 4 hours per day	61	4.3
	F. 5 or more hours per day	76	5.4
4	On average, how many hours per day are spent on watching TV/ smart phone/ tablet/ desktop/ laptop for entertainment/leisure? Weekends: _____ hours		
	A. Less than 1 hour per day	343	24.2
	B. 1 hour per day	293	20.6
	C. 2 hours per day	301	21.2
	D. 3 hours per day	174	12.3
	E. 4 hours per day	120	8.5
	F. 5 or more hours per day	189	13.3
5	On an average when do you stop using any form of screen prior to sleep? Weekdays: _____		
	1. 3 hours	121	8.5
	2. 2 hours	80	5.6
	3. 1 hours	166	11.7
	4. 30 minutes	151	10.6
	5. 15 minutes	69	4.9
	6. Just before sleeping	833	58.7
6	On an average when do you stop using any form of screen prior to sleep? Weekends: _____		
	1. 3 hours	120	8.5
	2. 2 hours	78	5.5
	3. 1 hours	163	11.5
	4. 30 minutes	151	10.6
	5. 15 minutes	68	4.8
	6. Just before sleeping	840	59.2

DISCUSSION

Demographic and clinical variables:

Table 1 denotes that the majority (70.8%) of the study participants were early adolescents belonging to the age group of 10-14 years, the number of males (46.2%) and females (53.8%) were almost equal, and most (16.1%, 15.3%, and 15.0%) of them were perusing their IX, V, and X standard in school. A large portion (73.5%) of the families followed the Hindu religion, 52.6% of the families were of the nuclear type, an equal number of the participants lived in rural (49.6%) and urban (50.0%) areas and 34.1% of the family belong to the upper middle class. Among the health-related characteristics of the participants, a significant proportion (19.0% and 18.8%) had weights in the 25th and 50th centiles, and a similar trend was observed for height, with 21.5% and 19.9% in the 50th and 25th centiles, respectively. However, a notable finding is that most (19.4%) had a BMI of 23 adult equivalent, indicating a potential health concern. On a positive note, a large

majority (77.6%) do not have any chronic illness.

Diet:

Table 2 presents the results of the diet-related YRBS survey. The data shows that adolescents who did not drink 100% fruit juices in the past 7 days were 56.33%, and 42% ate fruits 1-3 times. This is consistent with the YRBS survey conducted among high school students in the USA in 2021, which revealed that 47.1% of students had drunk 100% fruit juices or eaten fruit <1 time/day[26], and the 2019 survey showed 41.8% of school children had eaten fruit or drunk 100% fruit juices <1 time/day[7]. However, this contrasts with the findings of a survey conducted among high school students in Duval County (DC), USA, where just 11.3% of students did not eat fruit or drink 100% fruit juices[27].

The present study revealed that 41.3% of the adolescents did not consume green/vegetable salads, and the majority (27.5% & 27.4%) of the teens ate other vegetables 2 times per day or 1-3 times during the past week. The findings are congruent with the YRBS survey 2021, which revealed that 45.3% had eaten vegetables <1 time/day[26]. The 2019 survey showed that 40.7% had eaten vegetables <1 time/day[7]. However, a different finding was shown in the DC study, where only 12.1% ate vegetables[27]. The question on consuming canned drinks showed that 66.1% of the participants did not drink canned beverages, whereas the 2021 YRBS survey revealed that 14.7% had drunk pop or sugar-sweetened soda ≥1 time/day and 11.2% had drunk a sports drink ≥1 time/day[26]. The contrary result was also seen in 2019, where 15.1% had drunk sugar-containing soda or pop ≥1 time/day, and 10.6% had drunk a sports drink ≥1 time/day[7].

The current study revealed that 89.7% of the adolescents ate breakfast daily, whereas the 2021 YRBS survey revealed that 75.0% had not eaten breakfast daily[26]. Similarly, the 2019 study showed that 16.7% had not eaten breakfast all 7 days[7]. The present study also revealed that the meals of 81.4% of adolescents did not contain 25% carbohydrates, and 39.4% of them drank milk once a day, but almost 36% did not drink milk in the past week. In 2019, a study conducted in Manipur reported that the prevalence of a healthy diet, defined as one that meets the recommended daily intake of essential nutrients, was only 5.8%[28]. These findings underscore the need for interventions to improve adolescent dietary habits by providing information about the constituents of a healthy diet among adolescents and their parents.

Physical activity:

The data presented in Table 3 is significant, revealing that 42.2% of adolescents did not perform the recommended 60 minutes of daily physical activity. This trend is mirrored in Manipur, where the prevalence of physical activity at and outside school was 29.7% and 28.7%, respectively[28]. These findings starkly contrast a study by the CDC in 2019, which reported that 23.2% of students engaged in physical activity for ≥60 minutes/day on all 7 days[7]. In DC, 74.1% of adolescents were not physically active on 5 or more days[27].

The current study's findings presented a unique perspective, with just 38.9% of Indian adolescents attending a physical training class at school at least once in the past week. This contrasts with the CDC's 2019 report, which found that 25.9% of students attended physical education classes every 5 days of an average school week[7]. A cross-sectional survey of young people from various countries and regions was conducted to assess the physical activity patterns of adolescents, where 57.1% attended PA up to 3 days per week[29]. More than half (51%) of the study participants were not a part of any sports team in the past year. However, the CDC revealed that 57.4% had played on ≥1 sports team[7].

This contrast infers that the educational system in India needs to give more importance to physical activity. The findings suggest that Indian schoolchildren

were physically inactive. This could be because students are so overburdened with academic work that they need more time to engage in physical activity. Moreover, in our country, there is a culture of private tuition where the parents want to give their children an extra boost in their academic performance. Another reason may be ascribed to some schools not having adequate resources and facilities for the students to play and engage more in activities related to physical fitness.

Sleep:

Table 4 denotes that most (33.8%) of the adolescents slept for about 8 hours during the school days. In contrast, a descriptive study to assess the sleep pattern, hygiene and daytime sleepiness among school students in Tamil Nadu reported that more than 64% of adolescents slept ≤8 hours at night, and 5.6% slept <6 hours[22]. In another study to determine the relationship between hours of sleep and adolescents' health risk behaviours, it was reported that more than two-thirds (68.9%) reported insufficient sleep (< 8 hours) on an average school night[30]. A study done to find the association between inadequate sleep and prescription opioid misuse among high school students revealed that among 6,884 participants, 79.4% reported insufficient sleep (< 8 hours)[31].

Most (98.7%) of the participants slept in their homes; a similar finding was found in the sleep study in Tamil Nadu, which reported that most (98.7%) slept there[22]. 70.6% of the participants said they did not feel sleepy during the day. In contrast, the study in Tamil Nadu reported that 69.5% of adolescents reported not feeling refreshed on waking up from sleep. Most (65.1%) of the study participants also complained of feeling sleepy during the daytime in the class[22].

In the present study, 68% of the adolescents reported difficulty falling asleep, which demands immediate attention. This is in line with the findings of the sleep study in Tamil Nadu, which reported that about 48% of adolescents

suffered from prolonged sleep-onset latency[22]. These findings underscore the urgent need for further research and intervention to address the significant prevalence of sleep issues among adolescents, which could potentially impact their overall health and well-being.

Screen time:

Table 5 indicates that the majority (62.8% and 65.6%) of adolescents spent less than 1 hour per day of screen time for school-related work during the weekdays and weekends, whereas 33.3% and 29% of them spent <1 and 1 hour/day during the weekdays and 24.2%, 20.6% and 21.2% of them spent <1, 1 and 2 hours/day respectively during the weekend for entertainment purpose. A similar finding was reported in Manipur, where nearly 29.6%, 36.4%, and 36.4% of the students spent around 1-2 hours/day watching TV, using the laptop/computer, and using the Internet (except for social media), respectively, whereas 50.6% of them used their smartphones for a duration of <1 hour/day[28]. A community-based cross-sectional study in New Delhi to evaluate SBM and screen time assessment among adolescents revealed that 98% used SBM. TV is the most used medium (96.5%). The mean screen time was 3.8 hours/day[25]. Another cross-sectional survey was conducted in 2019 among school children in Mysuru District to assess the usage of SBM and screen time among adolescents. Mobile formed the SBM, which is the most used. Of the total screen time, 90.5% is spent on TV, 95.6% on mobile, and 91.7% on TV and mobile, followed by other SBMs. Of the overall population surveyed, 25.6% had about 3 hours/day of screen time, and 5.9% had more than 3 hours/day[32].

Most participants (58.7% and 59.2%) stopped screentime just before sleep on weekdays and weekends. A similar finding was reported where most (64.1%) adolescents watched TV in bed, and about 23% used mobile phones in bed[22]-a Karachi survey aimed to uncover

adolescents' lifestyles and behavioural patterns. The results were striking: more than half (61.8%) of the respondents admitted staying late at night to watch TV or listen to music[33]. A study from Taiwan reported similar results, with 82.3% of the subjects staying up late, making it the second most prevalent health risk behaviour[34].

CONCLUSION

Adolescence is a time when behaviours that affect present and future health begin. Several health-compromising behaviours (e.g. smoking, alcohol), as well as health-enhancing behaviours such as a balanced diet, regular physical exercise, good sleep and avoiding excessive screen time, are adopted in adolescence, and they often persist into adulthood[35]. Therefore, helping adolescents establish healthy lifestyle practices and avoid developing health risk behaviours is crucial and should be started before these behaviours are firmly established[36].

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