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Adverse Effects Of Use Of Electronic Devices On Medical Students

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Abstract : Human race has witnessed enormous technological advancements especially in last few decades.

Electronic gadgets are part of everyday lives of all individuals in all age groups. On one side they make our lives

easier and convenient and on the other side their excessive usage is harmful. These gadgets effect physical as well as

mental health. Present study was conducted to see the effects of electronic gadgets on physical and mental health of

medical students.

Methods: A cross-sectional study was conducted among MBBS students of Central India. Students who were present

on the time of data collection were included in the study. For the study, data collection tool was a pre-designed, semi

structured questionnaire, collected data was compiled in excel sheet and relevant analysis was done.

Results: About 70% have habit of waking up between 6 to 8 AM. 95.5% of subjects were using smartphones, 61.5%

of subjects using laptop/computer. 58% were spending time with gadgets less than 4 hours while 6.5% were spending

more than 10 hours. We found out that 54% had ophthalmic health effects and 46.5% participants accepted feeling

anxious, irritated or restless without their gadgets. The study revealed health problems of participants as headache

(30%), migraine (1%), depression (7%) and other problems like backache, weakness, joint pain and others.

Conclusions: The current and exiting data so far suggest that gadget have definite risk and adverse effects on the

health of the general population.

Introduction – Technology is a two-edged sword. Term technology comes from Greek word 'techne' which is defined as the art or skill used in order to solve a problem, improve a pre-existing solution to a problem, achieve a goal, handle an applied input/output relation or perform a specific function, technology is the making, modification, usage and knowledge of tools, machines, techniques and method of organisation.1 After industrial revolution the term became popular more so. Human race has witnessed enormous technological advancements especially in last few decades. Electronic gadgets are part of everyday lives of all individuals in all age groups. These days business, education, billing and various other activities are being undertaken through electronic gadgets. Data as per the report by Indo-Asian news service, gadgets 360 dated 30 January 2020 said that over 500 million Indians were using smartphones and out of them 77% remained online.2 But like every other scientific advancement electronic gadget also have both advantages and disadvantages.

METHODS A cross-sectional study was conducted among MBBS students at a medical college of Central India. Study was conducted between June 2019 to August 2019, for 2 months. For the study universal sample of the non-exam going batch was planned. Only two batch were free at the time of the study, so we planned our study on students of these batches using convenient sampling. Those students who were willing and present at the time of data collection were included in the study. Those students who were not using any kind of gadgets were excluded from the study. For the study, data collection tool was a pre-designed, semi structured questionnaire which contained questions regarding electronic gadgets, type of gadgets, use of gadgets, their effects on sleep and other activities of daily living, duration of usage, knowledge about the hazards of their use and some preventive measures. The study was done through the filling of questionnaire after explaining the procedure of how to fill the questionnaire. Informed verbal consent was obtained from the student and then they were asked to fill the questionnaire

RESULTS

In this study we could study on 200 students, out of which 97 (48.5%) were male. In our study 41% of participants were from upper middle class and 75% were from nuclear family. We found that 72.5% were having normal BMI and 54% were doing regular exercise. 70.5% have habit of waking up between 6 to 8 AM. 95.5% of subjects were using smartphones, 61.5% of subjects using laptop/computer and 57.5% of subjects using television. 58% were spending time with gadgets less than 4 hours while 6.5% were spending more than 10 hours.

Table 1: Socio-economic status and type of family of participants.

Socio-economic status

Upper

23

56

79

22.25, 0.00

Upper middle

46

36

82

Lower middle

28

11

39

Type of family

Nuclear family

77

73

150

2.11, 0.34

Joint family

18

23

41

Three generation family

2

5

9

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Table 2: BMI, habit of exercise, time of waking up and sleeping of participants.

BMI

Underweight

10

20

30

5.18, 0.07

Normal weight

71

74

145

Over weight

16

9

25

Habit of doing regular exercise

Yes

65

43

108

12.83, 0.00

No

32

60

92

Time of wake up in morning (in AM)

4-6

9

11

20

1.30, 0.72

6-8

66

75

141

8-10

16

13

29

After 10

6

4

10

Time of sleep-in night

10-11 PM

25

24

49

4.68, 0.19

11-12 PM

40

32

72

12-1 AM

18

32

50

After 1 AM

14

15

29

Table 3: Time spent with gadgets by participants.

Time spent with gadgets (in hours)

<4

49

67

116

9.53, 0.04

4-6

19

20

39

6-8

17

8

25

8-10

6

1

7

>10

6

7

13

Time spent on internet (in hours)

<2

36

39

75

1.17, 0.88

2-4

36

43

79

4-6

15

11

26

6-8

6

6

12

>8

4

4

8

Time spent on social media (in hours)

<1

28

28

56

1-2

36

37

73

2-4

21

29

50

4-6

8

7

15

>6

4

2

6

Time spent with laptop (in hours)

<2

62

40

102

3.37, 0.33

2-4

22

23

43

4-6

7

2

9

6-8

6

1

7

Table 4: Psychological and ophthalmic effects of gadgets use.

Stay without a mobile for a day

Yes

64

68

132

0, 1

No

33

35

68

Behaviour when not in touch with mobile

No reaction

51

56

107

1.92, 0.58

Continued.

Anxiety

23

21

44

Restlessness

10

16

26

Irritated

13

10

23

Feeling of irritation in daily life

Yes

38

43

81

0.13, 0.71

No

59

60

119

Use of any electronic gadgets in

While driving

30

4

34

Just before sleep

81

81

162

In midnight

47

40

87

Difficulty in sleeping

Yes

27

19

46

2.48, 0.11

No

70

84

154

Wears spectacles

Yes

45

63

108

4.38, 0.03

No

52

40

92

Table 5: Health problems faced by participants.

Headache	25	35	60
Backache	9	10	19
Weakness	9	9	18
Joint Pain	0	2	2
Depression	11	3	14
High blood pressure	1	0	1
Diabetes	1	0	1

Heart attack

0

0

0

Stroke

0

0

0

Asthma

0

1

1

Migraine

0

2

2

No problem

83

97

180

Figure 1: Distribution of subjects according to type of gadgets they have.

0

20

40

60

80

100

120

140

160

180

200

Simple Phone Smart Phone Laptops/

Computers

Television Tablets

Male 6 91 66 61 29

Female 3 100 57 54 12

Total 9 191 123 115 41

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We found out that 54% have ophthalmic health effects and are wearing spectacles. Similarly, 46.5% participants accepted feeling anxious, irritated or restless without them gadgets. The study revealed health problems of participants as headache (30%), migraine (1%), depression (7%) and other problems like backache, weakness, joint pain and others.

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