Analysis of Usage Pattern of Mobile Phone and Its Impact on Human Health in Vadodara City

Introduction

Technology has become a fundamental aspect in our lives and we cannot neglect its contribution in the welfare of human beings. Mobile are considered as an essential and an integral tool(item) necessary for communicating and connecting to family, friends and work even used for emergencies. Mobile phones are being used by each and every one today. Their use without any knowledge of their harmful effects is unsafe and have several downsides, especially on human health. Hence, we have conducted a study: "Analysis of Usage Pattern of Mobile Phone and Its Impact on Human Health in Vadodara City". The highlight of this project includes recent scientific facts and Analysis of Mobile phone on Human Health and Life. And we are discussing about how its impacting on human body, Sleeping pattern and Physical stress. Study was conducted before covid-19 breakdown.
Aim of this survey is to investigate the possible symptoms and sensations expressed by usage pattern of mobile phone.

Methodology and Field work

The population of this study is the number of individuals in Vadodara City that use mobile phone, aged 18-year-old and above and able to understand English or Gujarati language.
We have used Sample size determination based on Pilot survey results, by proportion method using proportions of mobile phone users and its impacting on human health? In response "yes" and "no", to determine the sample size.
For the collection of samples, we have used three stage sampling.
In first stage we have used cluster sampling, we have divided the Baroda city into different clusters based on the Zone.
In second stage we have used cluster sampling, we have divided the Zone into different clusters based on the ward.
In third stage we have chosen 4 wards randomly form each Zone by simple random sampling.
Then we have used Probability Proportional to size sampling to calculate the sample size of each cluster (ward).

Sample size for the population of Vadodara City (5,88,922) is 337.

Sr. no	Zone	Ward number	Ward name	Total Population	Sample size
1.	North Zone	7	Fatehgunj	1,82,567 (= N1)	105 $(= n_1)$
2.	West Zone	11	Vasna	1,22,645 (= N2)	70 $(= n_2)$
3.	South Zone	4	Pratapnagar	1,60,969 (= N3)	92 $(= n_3)$
4.	East Zone	2	Harni	1,22,741 (= N4)	70 $(= n_4)$

Objectives

To estimate Proportion of usage of mobile phone in Vadodara City.

To estimate proportion of users of mobile phone after 10 p.m. ward wise of Vadodara City.

To check whether there is significant difference among Gender based on Global score of Usual sleep habits.

To study the placing pattern of their mobile phone.

To study the trouble keeping enough enthusiasm in doing things.

Conclusions

In our study we observe the following …

- Proportion of usage of mobile phone in Vadodara City

In hours	0 to 2	2 to 4	4 to 6	More than 6
In %	14.5	25.2	30.6	29.7

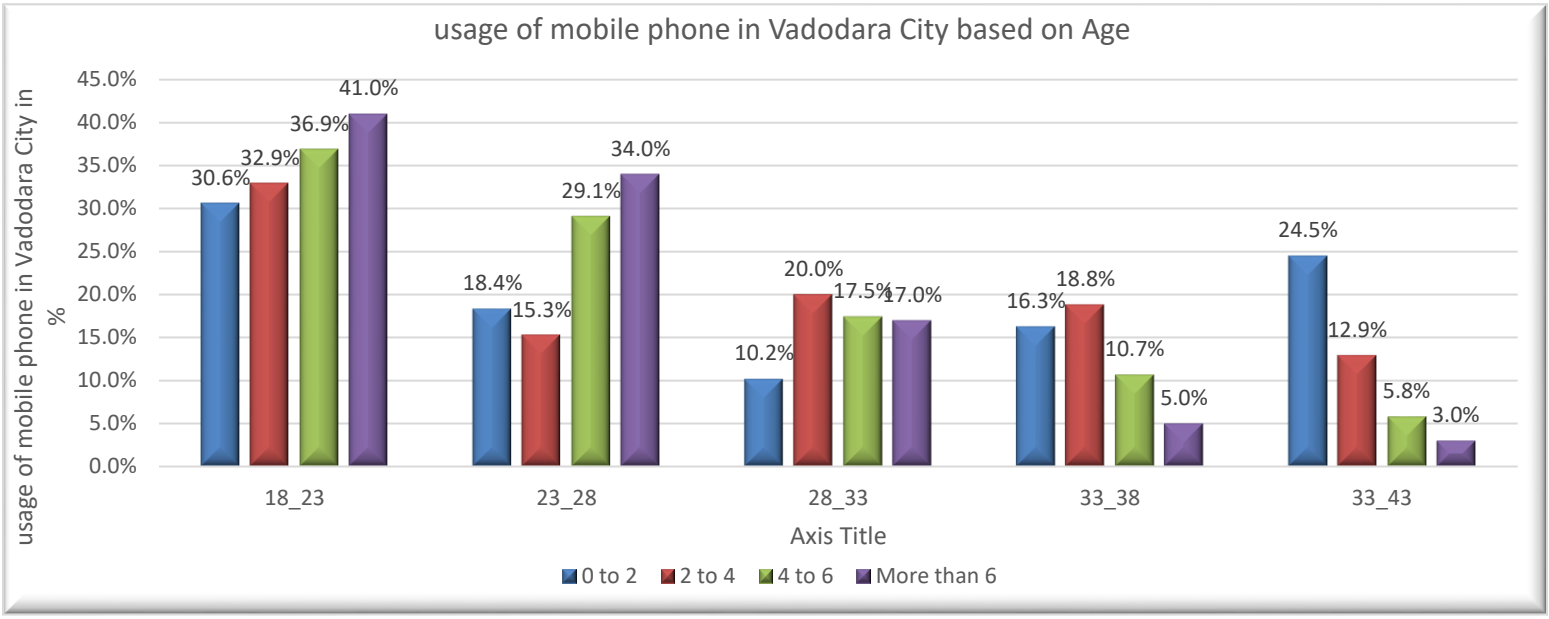
In our study we observe that 29.7% users usage their mobile phone for more than 6 hours

- Proportion of users of mobile phone after 10 p.m. of Vadodara City.

Do you use your mobile phone after 10 p.m.	Yes	No
Response in %	77.70	22.30

In our study we observe that 77.7% users usage their mobile phone after 10 p.m. of Vadodara City.

- Proportion of usage of mobile phone in Vadodara City based on Age



In our study we observe that for more than 6 hours usage of mobile phone in Vadodara City, majority response is from age group of 18_23(41%).

In our study we observe that,

Age group 18_23, majority responder usage their mobile phone for more than 6 hours

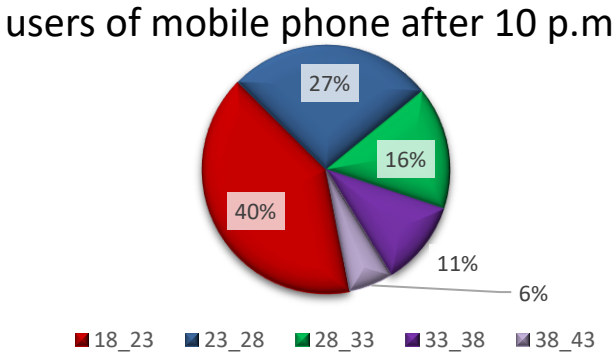
Age group 23_28, majority responder usage their mobile phone for more than 6 hours

Age group 28_33, majority responder usage their mobile phone for 2 to 4 hours

Age group 33_38, majority responder usage their mobile phone for 2 to 4 hours

Age group 38_43, majority responder usage their mobile phone for 0 to 2 hours

- Proportion of users of mobile phone after 10 p.m. ward wise of Vadodara City based on Age.



In our study we observe that maximum proportion of users of mobile phone after 10 p.m. lie in 18_23 age group.

- Placing pattern of mobile phone in Vadodara city.

Where do you place your mobile phone?	response in %
upper left side of your pocket	12.8
front side of jeans pocket	56.4
back side of jeans pocket	6.2
mobile zipper pouch	24.6

In our study we observe that majority of mobile phone users across all ages are keeping their phone in Front side of jeans pocket.

- Trouble keeping enough enthusiasm in doing things.

How much a trouble keeping enough enthusiasm in doing things?	response in %
No problem at all	37.4
Only a very slight problem	28.5
Sometimes a problem	27.9
A very big problem	6.2

In our study we observe that majority of mobile phone users across all ages are responded No problem at all for keeping enough enthusiasm in doing things.

- To check whether there is significant difference among Gender based on Global score of Usual sleep habits. (Used literature: the PSQI measures several different aspects of sleep, offering seven component scores and one composite score. The component scores consist of
  1) subjective sleep quality,
  2)sleep latency (i.e., how long it takes to fall asleep),
  3) sleep duration,
  4) habitual sleep efficiency (i.e., the percentage of time in bed that one is asleep),
  5) sleep disturbances,
  6) use of sleeping medication,
  7) daytime dysfunction.

  Each item is weighted on a 0–3 interval scale.
  The global PSQI score is then calculated by totaling the seven component scores, providing an overall score ranging from 0 to 21, a global score of 5 or more indicates poor sleep quality; the higher the score, the worse the quality. And global score is less than 5 indicates good sleep quality; lower scores denote a healthier sleep quality.)

COMPONENT 1: SUBJECTIVE SLEEP QUALITY

In our study we observe that there is 30.2 % association between users of mobile phone after 10 p.m. and How they rate their sleep quality overall

45.4 % users of mobile phone after 10 p.m. are rating their sleep quality as Very good.

48.7 % users of mobile phone after 10 p.m. are rating their sleep quality as Fairly good.

5.9 % users of mobile phone after 10 p.m. are rating their sleep quality as Fairly bad.

No users of mobile phone after 10 p.m. are rating their sleep quality as Very bad.

COMPONENT 2: SLEEP LATENCY

(i.e., how long it takes to fall asleep)

22.0 % users of mobile phone have sleep latency less than 16 minutes (0-15 minutes)

51.3 % users of mobile phone have sleep latency less than 31 minutes (16-30 minutes)

18.7 % users of mobile phone have sleep latency less than 61 minutes (30-60 minutes)

8.0 % users of mobile phone have sleep latency more than 60 minutes (more than 60 minutes)

COMPONENT 3: SLEEP DURATION

24.9 % users of mobile phone have sleep duration more than 7 hours (more than 7 hours)

61.4 % users of mobile phone have sleep duration more than 5 hours (between 6-7 hours)

11.0 % users of mobile phone have sleep duration more than 4 hours (between 5-6 hours)

2.7 % users of mobile phone have sleep duration less than 5 hours (less than 5 hours)

COMPONENT 4: HABITUAL SLEEP EFFICIENCY

(i.e., the percentage of time in bed that one is asleep)

66.2 % users of mobile phone have habitual sleep efficiency more than 85% (more than 85%)

13.4 % users of mobile phone have habitual sleep efficiency more than 75% (between 76% - 85%)

12.2 % users of mobile phone have habitual sleep efficiency more than 65% (between 66% - 75%)

8.2 % users of mobile phone have habitual sleep efficiency less than 66% (less than 66%)

COMPONENT 5: SLEEP DISTURBANCES

38.6 % users of mobile phone had Never trouble sleeping.

42.4 % users of mobile phone had Sometimes trouble sleeping.

13.6 % users of mobile phone had Sometimes in month trouble sleeping.

5.4 % users of mobile phone had Sometimes in week trouble sleeping.

COMPONENT 6: USE OF SLEEPING MEDICATION

88.1 % users of mobile phone have Never taken medicine.

0.9 % users of mobile phone have Not during the past month taken medicine.

0.6 % users of mobile phone have Once or twice a month taken medicine.

10.4 % users of mobile phone have Three or more time a month taken medicine.

- 10.4 % users of mobile phone have Three or more time a month taken medicine. in this

  17.2% are from Age group 18_23,

  45.7% are from Age group 23_28,

  5.7% are from Age group 28_33,

  25.7% are from Age group 33_38,

  5.7% are from Age group 38_43.

COMPONENT 7: DAYTIME DYSFUNCTION

28.1 % users of mobile phone had Never trouble (on next day) staying awake while driving, eating meals, or engaging in social activity and No problem at all in trouble keeping enough enthusiasm in doing things.

37.4 % users of mobile phone had Not during the past month trouble (on next day) staying awake while driving, eating meals, or engaging in social activity and Only a very slight problem in trouble keeping enough enthusiasm in doing things.

30.0 % users of mobile phone had Once or twice a month trouble (on next day) staying awake while driving, eating meals, or engaging in social activity and Sometimes a problem in trouble keeping enough enthusiasm in doing things.

4.5 % users of mobile phone had Three or more time a month trouble (on next day) staying awake while driving, eating meals, or engaging in social activity and A very big problem in trouble keeping enough enthusiasm in doing things.

- ❖ With the help of global score, we observe that:

In our study we observe that 28% Female having good sleep quality and 72% Females having poor sleep quality.

In our study we observe that 42% Male having good sleep quality and 58% Males having poor sleep quality.