



# THE EFFECT OF SMARTPHONES ON THE SELF-RATED HEALTH LEVELS OF THE ELDERLY; A CROSS-SECTIONAL STUDY IN PUNJAB PROVINCE

## BATCH 14

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## INTRODUCTION

According to the annual report published by Pakistan Telecommunication Authority (PTA), the number of smartphone users exceeded 2G phone users in 2021. Self-rated health is based upon asking individuals to assess the status of their health usually on a five-point scale.

Previous research has revealed that mobile applications designed to monitor exercise, diet and blood pressure help the users improve their health status. Smartphones enable several people to interact with their friends and family and reduce stress in their life. This study aims to discover the possible effects of smartphones on the self-rated health levels of the elderly.

## OBJECTIVES

The specific objectives of this study include

- Finding the impact of smartphones on the physical and mental health of elderly
- Exploring their effects on the daily life and social activities of the elderly
- Learn the influence of smartphones on the family relationships
- Compare the effects on lifestyle with non-smartphone users among the elderly population

## RESULTS

In this research, we studied about various aspects of using smartphones on the self rated health of elderly. It is seen that mostly people use smartphones for purpose of getting information on electronic media and also for entertainment purposes. This study explored that they also feel some negative effects like less focused, less physically active and difficulty in reading.

On the other edge, maximum number of the people agreed that they feel tired after using smartphones(n=34,45.3%). Highest percentage of participants agreed that they feel less focused after using smartphones (n=33,44%). Mostly people disagreed that their hands shake after using smartphone at night(n=25,33%). Neutral response was seen when it was asked if they feel difficulty walking properly upstairs after long screen time.(n=27,36%). 36% of the participants agreed that they feel weakness in arms after holding smartphone for more than 2 hours. Obsession with smartphones is also seen and 38.7% of the participants agreed with this statement.

The limitations to this study include that it covers only one region of Pakistan and the questionnaire responses might be biased as data collection is done through online forms.

## STUDY DESIGN:

Cross sectional study.

The dependent variable in this study "self-rated health levels". According to the five categories that respondents used for their answers– "very poor, poor, average, good, very good"—dependent variable values were assigned from 1 to 5. The core independent variables were "Whether the elderly use smartphones"; "The ability of the elderly to use smartphones"; "Whether to use smartphones to search for learning and health information"; "The effect of the smartphones on physical health" and "The effect of the smartphones on mental health"

## STUDY SETTING:

Punjab province of Pakistan through Google Docs

## STUDY POPULATION:

Elderly subjects of age range defined to be ≥50 years

## STUDY DURATION:

July to October 2021

## SAMPLE SIZE:

Calculated by using following equation:

$$n = \frac{Z^2 \cdot P(1-P)}{d^2}$$

Z (level of confidence) = 95% or 1.96

P (expected prevalence) = 10% or 0.1

d (margin of error) = 5% or 0.05

n (sample size) = 139

## SAMPLING TECHNIQUE:

Snowball sampling, a type of non-probability sampling

## STUDY SELECTION AND DATA EXTRACTION

### INCLUSION CRITERIA

The study included elderly subjects of age range defined in this case to be ≥50 years, who are smartphone users, with Android and/or Apple devices with internet accessibility, living in the Punjab province.

### EXCLUSION CRITERIA

Following people were excluded from the study:

- Non-smartphone users
- People aged less than 50
- People outside the Punjab Province
- Elderly with known mental health disorders

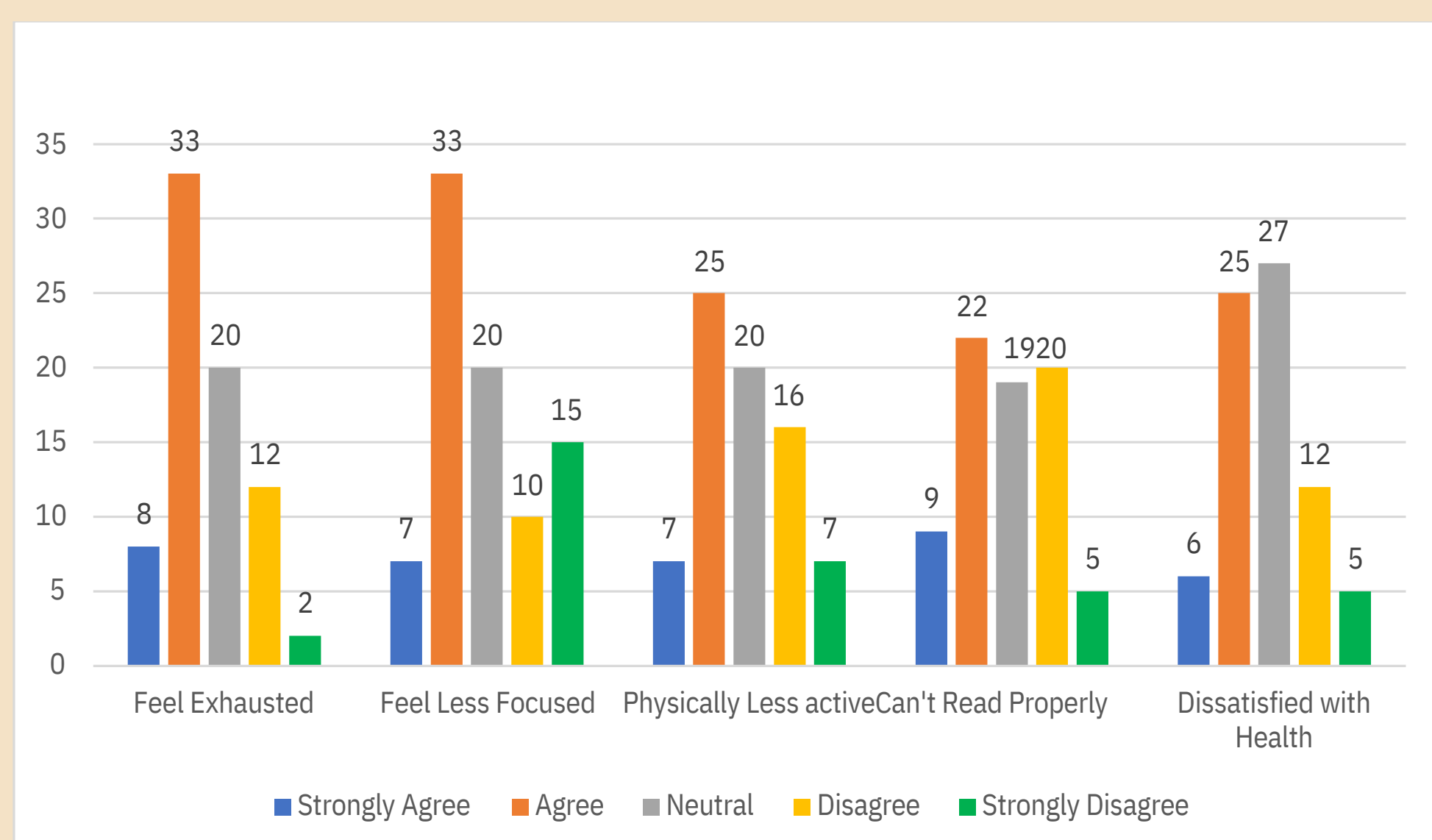
### DATA COLLECTION PROCEDURE:

Through Google Docs questionnaires

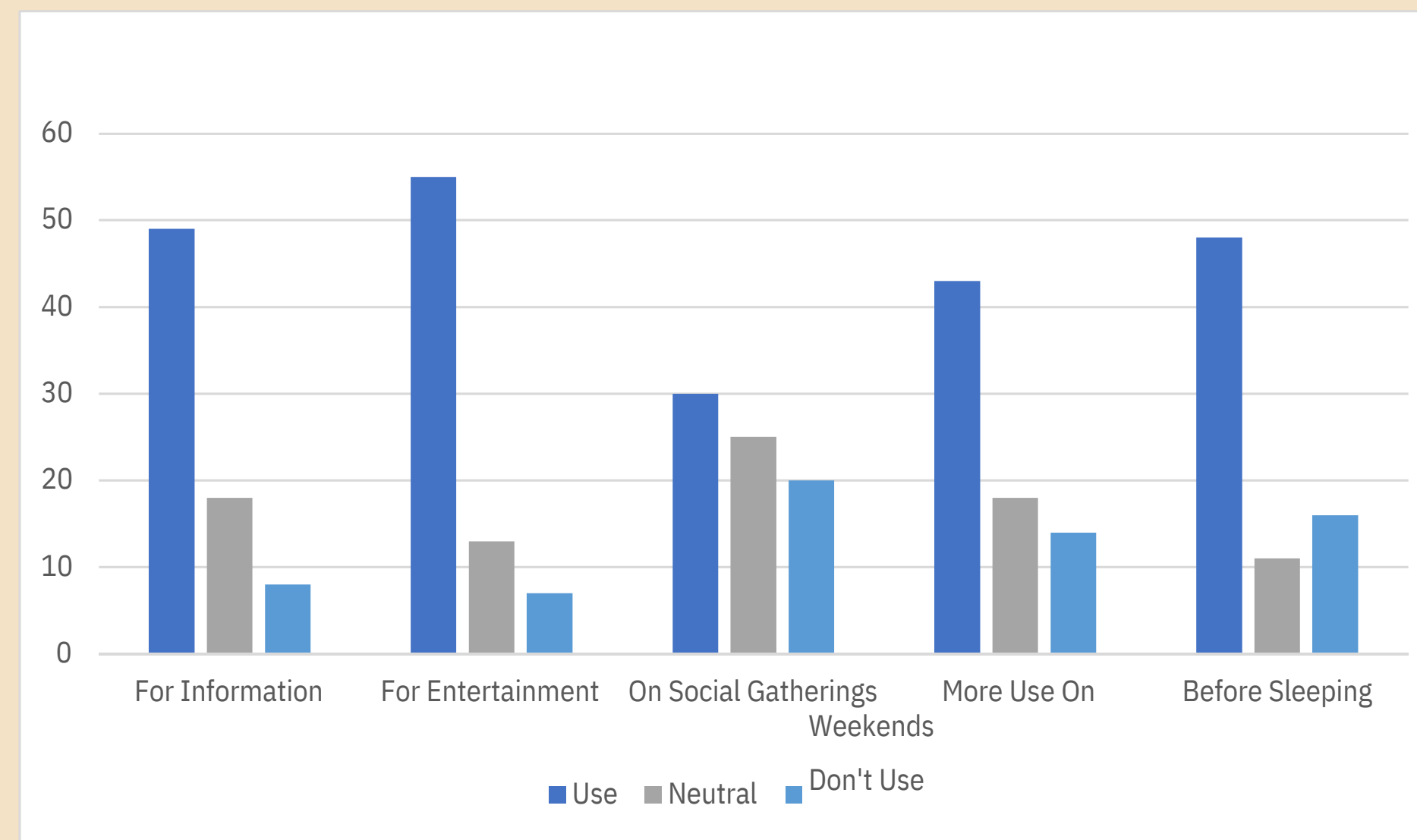
### DATA ANALYSIS PROCEDURE:

We used one-way ANOVA with repeated measures to assess the statistical variations. Alpha level of significance was accepted when  $p < 0.05$ . Data was statistically analyzed in IBM SPSS Statistics for Windows (Version 28.0. Armonk, NY: IBM Corp.)

## EFFECT ON HEALTH AFTER SMARTPHONE USAGE



## EXTENT OF SMARTPHONE USAGE IN ELDERLY



## DISCUSSION

In this research, we studied about various aspects of using smartphones on the elderly. It is seen that mostly people use smartphones for purpose of getting information on electronic media and also for entertainment purposes. A vast majority of participants agreed that they are active internet user, spend most of their time using it and they enjoy it alot. The study explored that they also feel some negative effects like less focused, less physically active and difficulty in reading. Because of Increase use of smartphones, people spend less time with their families. It is noted that people are engaged with their phones in the social gatherings. Duration of smartphone usage is further prolonged during weekends and at bedtime because they feel relaxed after consuming content from smartphones.

On the other edge, maximum number of the people agreed that they feel tired after using smartphones(n=34,45.3%). Highest percentage of participants agreed that they feel less focused after using smartphones (n=33,44%). Mostly people disagreed that their hands shake after using smartphone at night(n=25,33%). Neutral response was seen when it was asked if they feel difficulty walking properly upstairs after long screen time.(n=27,36%). 36% of the participants agreed that they feel weakness in arms after holding smartphone for more than 2 hours. Obsession with smartphones is also seen and 38.7% of the participants agreed with this statement. The response given on the satisfaction of their health status after smartphone usage was neutral.

The limitations to this study include that it covers only one region of Pakistan and the questionnaire responses might be biased as data collection is done through online forms.

To mention some implications of this research, taking into account the opinion and responses of the subjects certain suggestions can be made about using smart phones for mass education and awareness. People can be guided about how they can enjoy this invention wisely but not at the expense of their health.By reducing the screen time,using smart phones only when necessary can make them live a physically active and energetic life.They can be encouraged to use smart phones for getting knowledge regarding their health. This research mainly focuses on the self rated health of elderly people, we should also pay attention to impacts on mental health of elderly. Further researches can be made to explore the chronic or long term influence of smart phone usage on self rated health of elderly.Dynamic effects of smart phone usage can also be an area of focus.

The previous studies also show how usage of mobile phone is damaging the health of the elderly people, showing that most of the population is affected from this. The eye pain, inability to focus and tiredness after mobile usage are main complains. The use of the mobile phone was positively associated with the social activity of the elderly.Older adults use smartphones for social and non-social purposes especially social media. Smartphones have positive as well as negative impact. It prevents loneliness and cognitive decline but along with some problems.

The other reaserches showed that the elderly who use smartphones had better health status as compared to the non-users. The elders who used smartphones for gaining knowledge about heath had better health.The use of mobile phones is rapidly increasing with every passing day, mobile phones can act as an important tool to help manage and monitor the health of elderly. Instead of just being used as a leisure box it can help to positively affect their quality of life and wellbeing by being used for health purposes (including communication, education, and health monitoring).The elderly who are cell phone addicts have better response to stimulus. Smartphones users lead a better life in terms of quality. They provide a platform for users to search for health-related information online and thereby coping with health problems.

Our study has concluded that mobile phones usage has a significant effect on the life of elderly. While the mobile phones have been a good means of communication, connection and entertainment for the elderly, they might also have affected their quality of life and mental health adversely as most of the subjects spend most of their leisure time on the mobile phones instead of seeking healthy activities and going out and meeting people. Being chronically online and addiction with social apps also changes the chemistry of the brain as the subjects have been left feeling drained and mentally tired after longtime usage of mobile phones and are restless and bored in their absence.



## CONCLUSION

Smartphone usage is affecting the elderly in social, mental and physical aspects of life. They are less socializing due to excessive mobile usage. They feel tired and less focused and perform less physical activities. The elderly must be educated on how decreasing screen time will improve their mental and physical health.



Effect on Health After Smartphone Usage

