

Evaluation Of Cognitive Functions And Emotional Disturbances In Elderly Patients Using Smart Phone Mobiles

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ABSTRACT:

BACKGROUND: Research shows that smartphones can lead to brain affects which slow ability and start to store information remotely outside the brain.brings mental laziness. When people are given smartphones they reduce the memory storing

OBJECTIVE : The present study planned to evaluate the Emotional disturbances and cognitive functions and language skills among android mobile non users and users

METHODS: A study population involved 20 adults in the age group of 50-70 years. They were divided into two groups.Group 1- Subjects who were not using any mobile phone but were using landlineGroup 2-Subjects on regular use of Smartphones. Battery cognitive tests were assessed using MINI mental state examination and the levels of orientation, memory, attention, language,abstraction and recall was analysed. The results were tabulated and statistically analysed using an independent sample t test. The emotional status was assessed based on a cross-sectional study using a depression questionnaire performed among 100 elderly subjects in the age group of patients from private dental colleges and hospitals . The data was collected and analysed using SPSS software version 23.

RESULTS: As the result of mobile phones as it causes diseases. Apart from cancer, mobile phones influence our brain and nervous system. They may cause decreased attention,sleep disorders, headache, shortness of temper, and depression, mostly among elders.

CONCLUSION: Mobile phone usage causes more cognitive changes in middle aged and they must be educated with the harmful effects of more and frequent usage of mobile phones. And they should impact with their family and relatives

INTRODUCTION

Memory refers to the processes that are used to acquire, store, retain, and later retrieve information. Use of smartphones had gradually increased over users and people started getting addicted to its usage. Much research has been done on smartphone usage and its impact on all adolescents for so many years. But reports on smartphone addiction and changes in cognition and memory related changes in geriatric population is still lacking.(Vergani *et al.*, 2019)

There are certain harmful health effects, which might be caused by the immoderate use of cell phones. According to modern research, the most menacing problem is the connection between cell phones and

cancer. Even though the data remains controversial, most scientists agree that there is a certain threat from using cell phones too much. It is reported that people who talk on the phone for several hours a day are 50% more likely to develop brain cancer. The reason for this is the radio waves produced by mobile phones. It is calculated that every minute the human brain receives about 220 electromagnetic impulses, which are not necessarily harmful, but which definitely affect the brain in cases of prolonged impact.(Beatty, 1993) Recent studies report two types of brain cancer may occur – glioma and acoustic neuroma. Apart from cancer risk, mobile phones influence our nervous system.(Strelets, 1997)They may cause headaches, decreased attention, shortness of temper, sleep disorders and depression, mostly among teenagers. Radio waves are not the only reason for such symptoms. It is the sad reality that nowadays many people, especially youth, experience lack of human contact, and they try to compensate for it by mobile-phone communication, which is not an adequate substitute for personal intercourse. Adolescence is not an easy period of life, and at that time a young person is especially vulnerable. In cases of excessive mobile phone use there is a possibility of becoming addicted to the phone; the real world seems to fade in comparison with hours-long chats and hundreds of messages. These aspects cause psychological problems, as people start to feel uncomfortable in face-to-face communication.(Monaco and Comi, 2001)

MATERIALS AND METHOD:

A study population involved 20 adults in the age group of 50-70 years. They were divided into two groups.Group 1- Subjects who were not using any mobile phone but were using landline.Group 2-Subjects on regular use of Smartphones.Battery of cognitive tests were assessed using MINI mental state examination and the levels of orientation, memory, attention, language, abstraction and recall was analysed. The results were tabulated and statistically analysed using an independent sample t test.The emotional status was assessed based on a cross-sectional study using a depression questionnaire performed among 100 elderly subjects using mobile phones in the age group 50-70 yrs. The data was collected and analysed using frequency analysis and Chi square test in SPSS software version 23.

RESULT

MINI MENTAL STATE examination showed that Visuospatial executive, naming and orientation was significantly lowered in Smartphone users compared to non smartphone users. ($p < 0.05$) But attention, language, abstraction and delayed recall showed a decreased score in smartphone users but the value was not statistically significant. ($p < 0.05$)

Parameters	Smartphone users	Non smartphone users
Visuospatial executive	1.40 \pm 1.65	4.10 \pm 3.107
Naming	1.00 \pm 0.667	2.10 \pm 1.101
Attention	0.70 \pm 0.823	1.10 \pm 0.738
Language	0.40 \pm 0.516	1.10 \pm 0.876
Abstraction	0.30 \pm 0.483	1.10 \pm 0.738
Orientation	2.70 \pm 2.003	5.50 \pm 0.850
Delayedrecall	.90 \pm .994	0.260 \pm 1.265

Values are expressed as mean \pm stdev.

The emotional state was analysed using frequency analysis of Depression scale in the survey and the findings revealed that about 54% are from age group 30 to 40 years 30% are from the age group 40 to 50 years 11% are from the age group 50 to 60 years 5% or from above 60. About 33% who answered is male and 66% are female and 1% or not prefer. For the question Are they really satisfied with their life 67% people said Yes and

33% of people said no. Because of the phone usage they really dropped many of the activities and interests and the answer was 49% said Yes and people 51% said no. (Figure 1)

Do they really feel that life is empty and 60% of people said yes and 39% said no. Whether people get bored often even after using mobile phones 57% said Yes and 43% said no. Are they in good spirit most of the time 50% said yes and 50% said no. Are they afraid that something bad is going to happen to them 56% said yes and 44% said no (Figure 2). Do they feel happy most of the time and 49% said yes and 51% said no. Do they feel helpless? 57% said yes and 43% said no. They preferred to stay at home rather than going out and doing new things 55% yes and 45% said no. Do they feel they have more problems with memory than most normally 59% said yes and 41% said no (Figure 3). Do they think it is wonderful to be alive 61% said yes and 39 % said no. Duty full energy 47% said yes and 53% no .

Do they feel that their situation is hopeless? 41% said yes and 59% said no. Do they think most people are better off than they are? 67% said yes and 33 % said no (figure 4).

Cross tab evaluation

The Association between gender and feeling of helplessness was analysed. Majority of females about 60% stated yes compared to male respondents (45%) and the value was statistically significant. Pearson chi square value = 0.019 ($p < 0.05$) (Figure 5)

The Association between gender and feeling of better off than they are was analysed. helpless was analysed. Majority of females about 70% stated yes compared to male respondents (55%) and the value was statistically insignificant. Pearson chi square value = 0.17 ($p < 0.05$) (Figure 6)

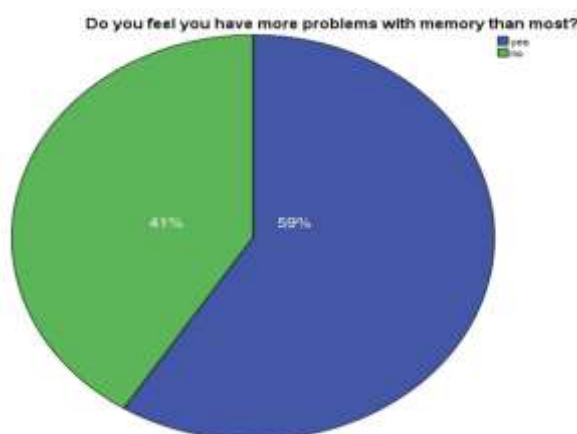


Figure 1: Represents do they feel they have more problems with memory than most. Blue colour represents yes and green colour represents no. 59% said that they feel that they have more problems with memory than most.

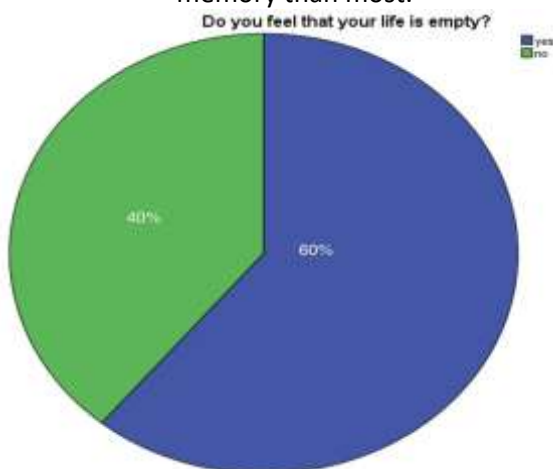


Figure 2: represents do they feel that their life is empty. Blue colour represents yes and green colour represents no. 60% said that they feel that their life is empty and 40% said they do not feel that their life is empty.

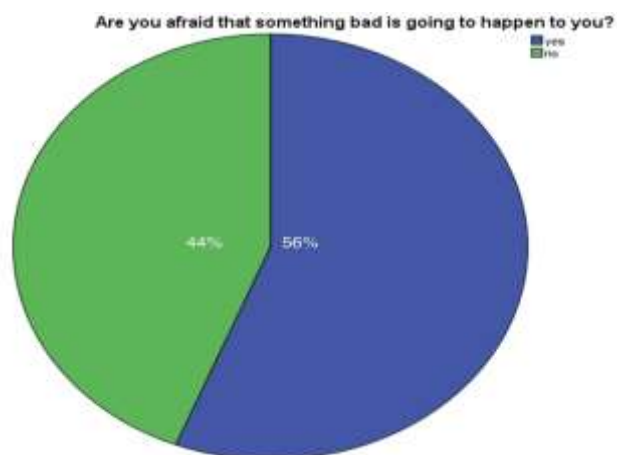


Figure 3: represents do they fear that something bad is going to happen to them. Blue colour represents yes and green colour represents no. 56% said that they are afraid something bad is going to happen to them. 44% said that they are not afraid something bad is going to happen to them.

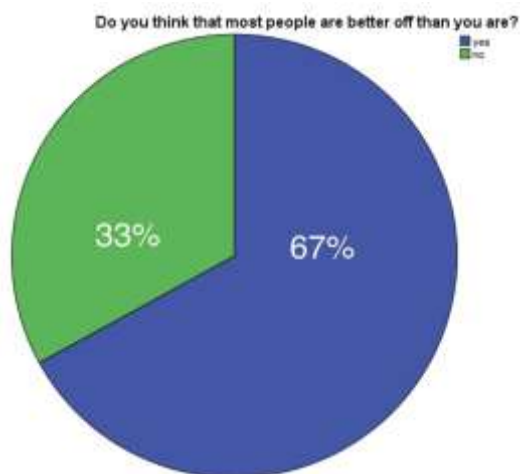


Figure 4: represents do they think most people are better than them. Blue colour represents yes and green colour represents no. 67% said that they think most people are better than them. 33% said that they do not think most people are better than them.

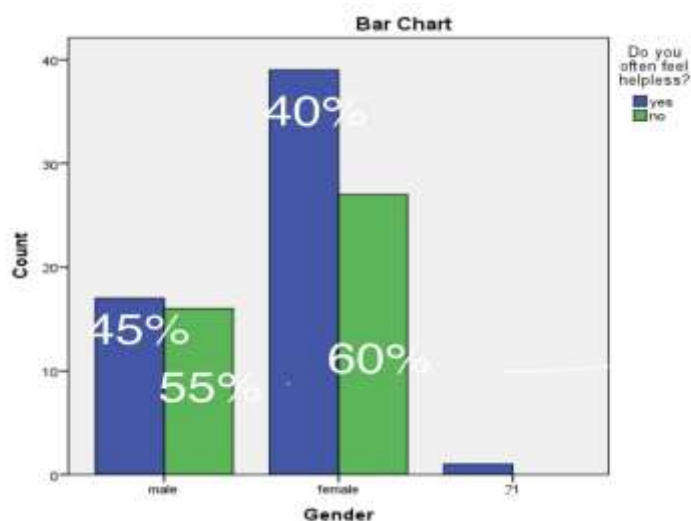


Figure5: Bar graph represents the association between gender of participants and do they feel that they often feel helpless . Blue colour indicates yes and green colour indicates no. females are more helpless than males participants. Pearson chi square test shows p value is 0.019, (p value < 0.05). Hence it is statistically significant.

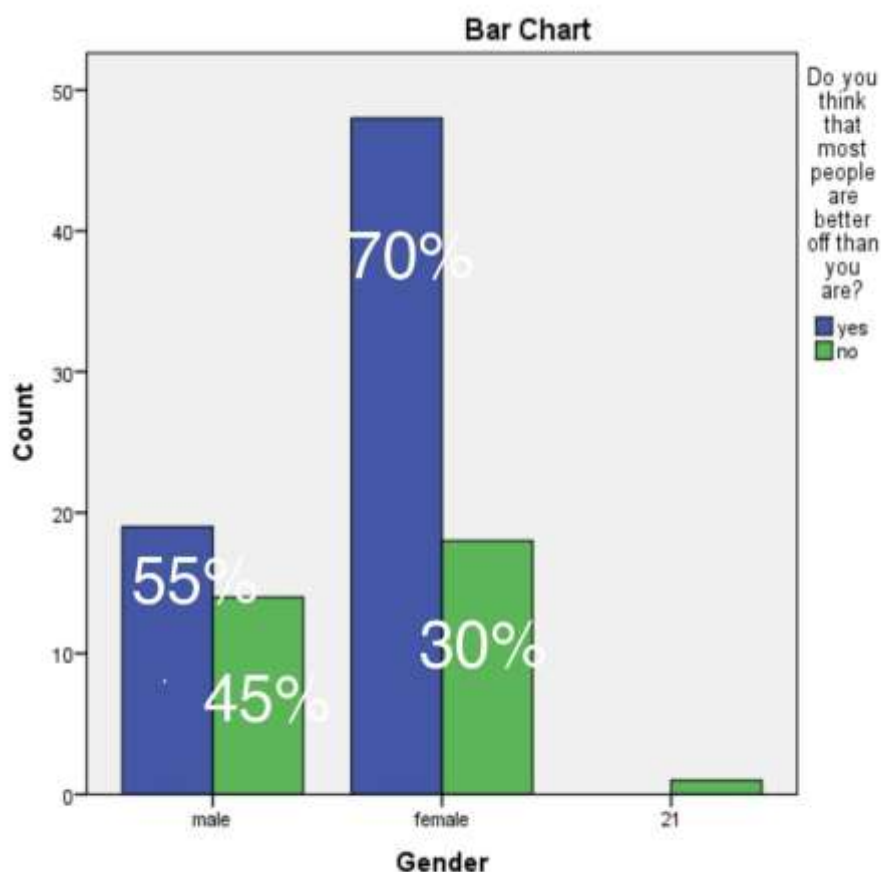


Figure 6: Bar graph represents the association between gender of participants and do they think that most people are better off than they are. Blue colour indicates yes and green colour indicates no. females are more helpless than males participants. pearson chi square test shows p value is 0.17, (p value > 0.05). Hence it is statistically insignificant.

DISCUSSION:

The smartphone has become ubiquitously very important in our everyday life. Recent researchers have focused on how smartphone and its-related effects influence on cognitive functions. (Hadjiev and Mineva, 2007) Previous reports supported our findings stating that “when cell phone use becomes an addiction, the behavior becomes stressful and might lead to depression” Although many age groups show addiction to smart and android phones, Elderly group are more prone for cell phone addiction because they have completed all their responsibilities in life and are in dependance on their son or daughter for their daily requirements. (Darmawati, Lindayani and Taryudi, 2020)

In consistent with our findings, previous reports claim that Excessive use of smartphone paired with negative attitude and feeling of anxiety and dependency on gadgets may increase the risk of anxiety and depression (Rosen et al., 2013) (Howell, Robinson and Griesbach, 2020)

Also studies reported that based on usage time, usage frequency and notifications reception may also play a role in potential changes in human beings. The inability to inhibit the tendency to check the regular messages can have a negative impact on the productivity at workplace, low motivation, and self-efficiency (Calderwood et al., 2014; Duke and Montag, 2017) (Zakharov, Lokshina and Yakhno, 2009)

Working memory is one of the core components of higher cognitive functions with limited capacity to store information temporarily. There is confounding evidence that mere presence of one’s own smartphone reduces performance in a working memory task in human beings (Ward et al., 2017). (Abreu and Abreu, 2020) A study by Reinecke et al. 2017 explored the psychological health effects and effect of digital stress on 1,557 German internet users aged 14 to 85 and reported smartphone usage was related to perceived stress and

had an indirect impact on depression and anxiety too. De-Sola Gutiérrez et al. revealed that the problematic cell phone usage had been associated with sleep deficit, depression, anxiety, and stress.(Igumnov, 2007)

CONCLUSION :

Thus, it can be concluded that the excessive smartphone use had a negative psychological effect. So, the elderly people must be aware of the ill effects of cell phone usage so that addiction induced depression and emotional disturbances can be prevented.

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AUTHOR CONTRIBUTIONS:

Ms.Muffetha : Literature search, survey, data collection, analysis, manuscript writing

Dr. Sridevi.G : Study design, data verification, manuscript drafting

CONFLICTS OF INTEREST:

The authors declare that there are no conflicts of interest in the present study

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