Assessment Of Neck Pain Using Smart-Phone Addiction Scale And Neck Disability Index In 30-60 Year Adults During Covid-19 Pandemic

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ABSTRACT

Background: The outbreak of Covid-19 pandemic has led to decline in social mobility and travel restriction to contain the infection amongst people around the world. Post-Pandemic the research has found out increase in the usage of internet and social media as people rely on their smart-phones for entertainment, work and learning purpose. Smart-phone being one of the most popular and easily available electronic gadgets is used by majority of today's population for communication and work purpose. Addiction of smart-phones can be a growing public health issue. Neck pain is a major public health problem, both in terms of personal health and overall well-being. Owing to the more usage of smart-phones during pandemic time, the aim of our study was to find out the percentage of people addicted to their smart-phone and to find out the percentage of mild, moderate and severe disability in neck in 30-60year adults using Smart-phone addiction scale (SAS) and Neck disability Index (NDI) **Methods & materials:** 50 subjects were recruited from the age-group 30-60years residing in Pune from different physiotherapy clinics by random sampling technique. Consent was taken. Subjects were asked to fill Smart-phone Addiction scale (SAS) and Neck disability Index scale (NDI). **Results & Conclusion:** In our study, we conclude that 54% of the subjects were addicted to their smart-phones who were using for more than 3hours/day and according to Neck disability index, 46% had mild disability, 26% had moderate disability and only 8% had severe disability in neck.

Key Words: Covid-19, Neck pain, smart-phones addiction, Neck disability index

INTRODUCTION

The World Health Organization (WHO) declared Covid-19 as Public health emergency of International Concern and after the declaration; government had imposed social mobility and travel restriction for the people. All the Educational Institutions and Companies were shut down and people were encouraged to work from home. [1] The COVID-19 pandemic is considered as the most crucial global health calamity of the century. It has been the greatest challenge that the human-beings have faced after the 2nd World War.

In December 2019, Wuhan, Hubei province China experienced a new infectious respiratory disease and was named by the World Health Organization as COVID-19 (Corona virus disease 2019). A new category under corona virus, known as SARS-CoV-2 (severe acute respiratory syndrome corona virus 2) was said to be the cause for occurrence of this disease. Considering the history of human civilization, there are instances of severe outbreaks of diseases caused by multiple viruses. In April 18, 2020, around 21, 64,111 people were affected due to Corona virus and nearly 146,198 deaths were reported according to the record as per World Health Organization (WHO) [2]

Mobile phone is a pervasive tool in today's era and it has become an important aspect of user's daily life that it has moved from being a 'Technological object'. Official work such as planning up meeting schedules, sending and receiving documents, giving presentations, Alarms, Job applications etc are easily done using smart-phones. Hence, mobile phones have become an essential device for every working people and for normal population.[3]. Differences in mobile phone usage are influenced by characteristics of work, income, education, marital status as well as by the attitudes, behaviors and perceived benefits of mobile phone.[4] An increase in internet usage with smart-phones was seen during the Covid-19 pandemic [5]Studies had found that an average Smartphone user spends around 20 hours a week. It has also shown that Smartphone user spends an average of 6 hours and 42 minutes a day for internet-based activities, which projects to nearly 100 days in a year.[6]

There has been an increase in the occurrence of the musculoskeletal disorders (MSD) of Upper limb involving hand, wrist, forearm, arm and neck all over the world due to forceful, prolonged, repetitive movements use of hand held devices. [7] Neck pain is a common health problem which is largely reported in adult patients. [8] In Western society, Neck disorders causes major medical and socio-economic problems. [9, 10] It can be originated from any structure in the neck including intervertebral discs, ligaments, facet, joints, muscles directed by the brain and spinal cord. Possible causes can be tumors, infection, inflammatory diseases, and congenital disorders. [11] Owing to the small screen size of smart-phone, recurrent usage results in more head and neck flexion are observed in all age-groups. [12]

There has been a substantial increase in the number of smart-phone users in all population. There can be various behavioral effects and its association with musculoskeletal discomforts in recent years is an increasing problem globally and can have a large impact on health in later life.

Objectives of the study:

To assess the percentage of people having neck pain using Smart-phone phone addiction scale (SAS) and disability using Neck Disability Index in young adults from 30-60years.

METHODOLOGY

Participants

50 participants were recruited for the study by simple random technique from in and around Physiotherapy Clinics in Pune. Participants were included in the study from both the genders and if they were using smart-phone for more than 3hours/day since past 1 year. Reasons for exclusion were as follows- Subjects with any other medical cause or a known condition which could lead to pain in neck, any congenital cervical problems, traumatic and pathological cervical problems.

Outcome Measures

Smartphone Addiction Scale (SAS): Smart-phone addiction is self- reporting scale which assesses smart phone addiction. It consist odd six factors and 33 items, with a six point Likert scale (1-"strongly disagree" to 6- "strongly agree"). The six factors were daily life disturbance, positive anticipation, withdrawal, cyberspace-oriented relationship overuse and tolerance. The scores range from 33 to 198. The higher the score, the great is the degree of use of smart-phone. [13]

Neck Disability Index (NDI): The neck disability index scale has been designed to give information as to how your neck pain has affected the ability to manage in everyday life. The scale involves in total of 10 items. 4 related to subjective symptoms (pain intensity, headache, concentration, sleeping), 4 activities of daily living (lifting work, driving, recreation) and there are 2 discretionary activities of daily living (personal care, reading). Each item is scored on 0-5 rating where 0 means no pain and 5 mean worst imaginable pain and the entire scale scoring is with a maximum score of 50. Higher the neck disability index score indicates greater neck disability. [14]

Procedure

Permission was taken from concerned institutional Ethical committee, Department of Physiotherapy, Tilak Maharashtra Vidyapeeth, Pune. Different Physiotherapy Clinics were approached and written consent was taken from the subjects prior to the start of the study. 50 Subjects were selected based on the inclusion and exclusion criteria. The aim of the study was explained to the subjects. The study was conducted for duration of 3 months. Basic demographic data like Age, Gender and their profession was obtained from the subjects. After taking the demographic data, the subjects were asked to fill the questionnaire -1) Smart-phone addiction scale (SAS) 2) Neck Disability Index (NDI) Both these questionnaire are self-reported. The Responses of the questionnaires were collected from the subjects and they were analyzed.
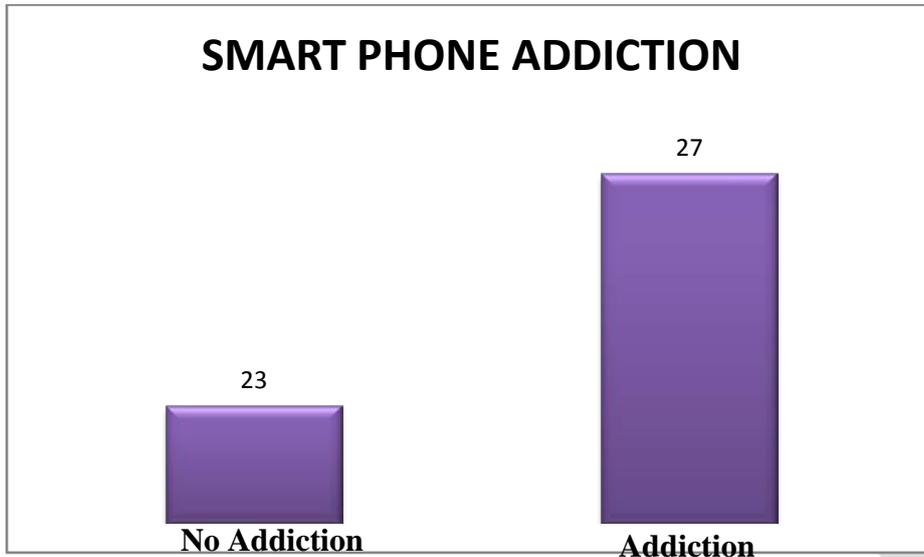
RESULTS

Figure No. 1 Pie Chart showing Male & Female Distribution in Study
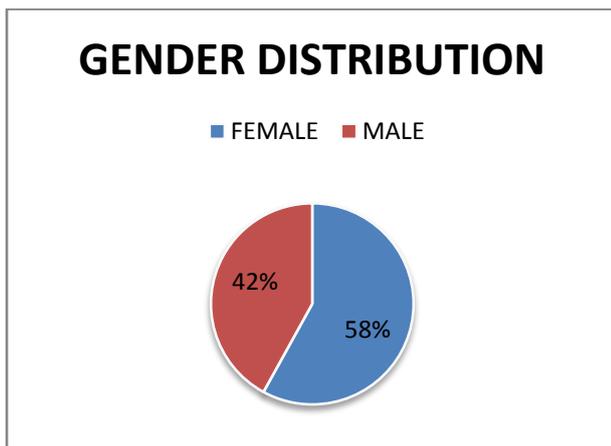

Interpretation- In our study, 42% were males and 58% were females who participated in the study.

Graph No 1- No. of Subjects who are addicted to their smart-phones according to Smart-Phone Addiction scale (SAS)

SMART PHONE ADDICTION

Interpretation – In our study, out of 50 subjects, 27 subjects - 54% had higher scores more than 100 in Smart-phone addiction scale (SAS)

Graph No.2 Results showing percentage of subjects having mild, moderate and severe disability according to Neck Disability Index (NDI)
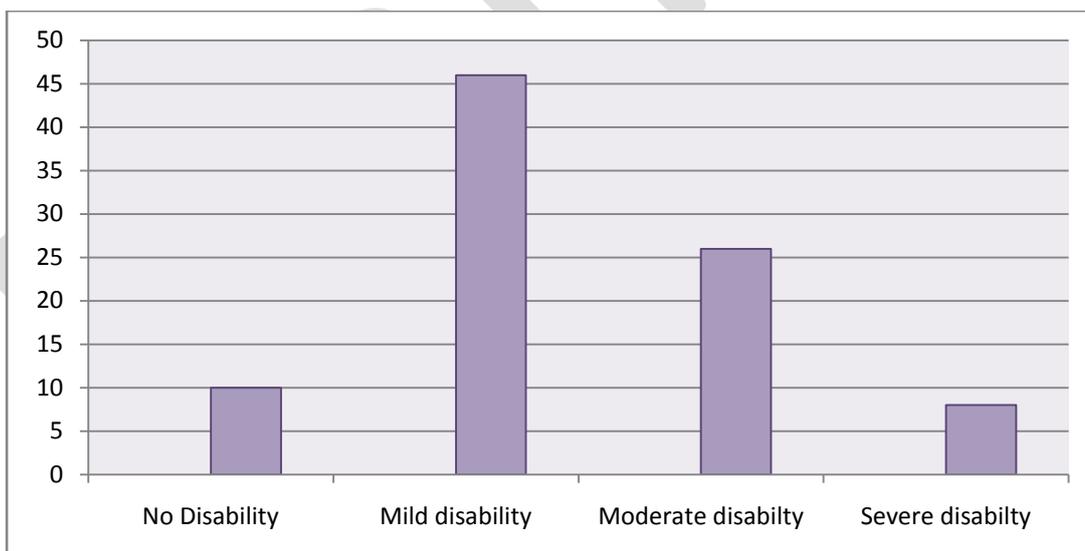
Interpretation- In our study, 23 subjects 46% had mild disability, 13 subjects 26% had moderate disability and 4 subjects 8% had severe disability according to Neck disability index scale.

DISCUSSION

The purpose of this study was to find out how many subjects were addicted to their smart-phone addiction using Smart-phone addiction scale (SAS) and subjects having disability in neck using Neck disability index (NDI).

This study included 50 subjects residing in Pune from the age-group of 30-60years. Out of 50 subjects, it was found out that 54% of the subjects were addicted to their smart-phones according to smart-phone addiction scale (SAS) and 46% had mild disability, 26% had moderate disability and 8% had severe disability in neck according to Neck disability index (NDI).

In our study, 42% were males and 58% were females who had actively participated in the study.

Graph No.1 shows percentage of subjects who were addicted to their smart-phones during covid-19 pandemic. The results show that out of 50 participants, 27 subjects- 54% were addicted and their usage of smart-phones was more than 3hours/day whereas 23 subjects 46% of subjects had no addiction to their smart-phones according to Smart-phone addiction scale (SAS). A cross-sectional survey was carried out in 101 medical and dental college students who were using smart-phones, laptops and tablet past 6 months in Lahore in 2018. The students were asked to fill self-structured questionnaire. The result of this study concluded that majority of the students had neck pain that was aggravated with using smart phone or other electronic devices and they did not perform any warm up before reading or using device.[15]

The results of our study are similar of Indian Meta-analysis by Davey et al who estimated the smart-phone addiction magnitude in India ranged from 39% to 44%.[16]

Graph No.2 shows interpretation of the Neck disability index questionnaire (NDI) of our subject's .In our study, 10% of the subjects had no disability, 23 subjects i.e. 46% of participants had mild disability, 13 subjects i.e. 26 % participants had moderate disability and 4 subjects i.e. 8% of the subjects had severe disability. The findings correlate with the study done by Priyal P et al who underwent a study on Correlation between smart-phone use addiction scale with text neck syndrome and Short message service (SMS) thumb in physiotherapy students. The results showed that the degree of cell phones influence was significantly correlated with musculoskeletal discomforts in the subjects, and there was a significant moderate positive correlation between the Smart-phone addiction scale and Neck disability index (p<0.001). Smart-phone addiction scale showed higher score indicating addiction to smart-phone use and the same with Neck disability index showed moderate disability which is 30 to 48 % moderate disability. [17]

CONCLUSION

The study concluded that 54% of subjects were addicted to their smart-phones based on smart-phone addiction scale (SAS) and according to Neck disability index, 46% had mild disability, 26% had moderate disability and only 8% had severe disability in neck.

FUTURE SCOPE

- Intervention based study including ergonomic and physiotherapy rehabilitation can be given in these age-groups and results can be studied.
- Gender specific study comparing the percentage of neck pain in both the genders separately can be carried out in future.

ABBREVATIONS

1. SAS- Smart-phone addiction scale
2. NDI – Neck Disability Index
3. WHO- World Health Organization

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