



A PILOT STUDY AMONG ADOLESCENTS ON THE EFFECT OF BRIEF MINDFULNESS UNIFIED COGNITIVE BEHAVIOUR THERAPY (MUCBT-B) ON INTENTIONAL PHYSICAL CONTACT WITH THE MOBILE PHONE AND COMPUTER.

Dr. S. Krishnan	Associate Professor of Psychiatry, Government Medical College, Thiruvananthapuram.
Dr. Vijaykrishnan Y.*	Assistant Professor of Psychiatry, Government Medical College, Thiruvananthapuram. *Corresponding Author
Smt. Lekshmy K.	Psychologist and Counsellor, B-GHUD, Puthiyakaavu, Mavelikara

ABSTRACT Excessive use of mobile phone and computer has been shown to have negative psychosocial consequences, especially among adolescents. Mindfulness Based Interventions have been shown to be effective in the management of stress and emotional distress, which has been suggested as either a cause or an effect of excessive screen time. This study aimed to examine the effect of a Brief Indian Structured Mindfulness based intervention, Mindfulness Unified Cognitive Behaviour Therapy (MUCBT-B) on Intentional Physical Contact with Mobile phone and Computer on adolescents with excessive mobile phone and computer use. Study participants were assessed pre and post intervention. Mobile/ Computer use lessened by about 50% and the mindfulness score increased by about 3 times the pre- intervention score. Results of this study, the first intervention study using MUCBT-B, in problematic mobile phone use has shown clear beneficial effects and is a pointer to the need for further research.

KEYWORDS : Problematic mobile use, Mindfulness, MUCBT, Stress

Background

Addiction has been defined as a major, persisting condition of the brain reward that affects motivation, memory and related circuitry. Drug addiction is a chronic, relapsing brain disease that is characterized by compulsive drug seeking and use, despite harmful consequences. The term behavioral addiction has been used to refer to gambling, internet usage, games, and overuse of cell phones. The principal activities which adolescents carry out in phones include chatting, gaming, surfing, watching pornography etc. These activities show similar levels of addiction as those of drug and substance abuse.

There are reports of adolescents showing increase in the number of hours they spent with mobile phones. Studies have reported that about 73% of adult internet users use at least one social media site and about 42% use multiple social media sites. 40% among these opine that they would indeed find it hard to give up usage of social media. 54% of U.S. teens spend too much time on their cellphones, and two-thirds of parents express concern over their teen's screen time. 51% of teens in a survey often find their parent or caregiver to be distracted by their own cellphones when the children are trying to have a conversation with them. A significant proportion of children are of the opinion that they use the mobile phones for academic purposes. All this perhaps increases the amount of time children spend with mobile phones. At the same time, social media is extolled as a means to enhance communication skills, creativity, social connectedness, knowledge acquisition and technological proficiency. But in a minority population, it leads to serious negative psychosocial consequences like addiction, disturbed relationships, academic drop out and underachievement, cyber bullying and cyber harassment and the like—. Problematic mobile phone use has been suggested to complicate physiological and psychological problems too—. Mobile phone use has been chronicled as one of the risky behaviours indulged in by adolescents. Risk taking has been proposed as a common tendency in adolescence when the normal adolescent judgment goes awry and the adolescent becomes locked into a pattern with largely negative consequences. A 2017 systematic review showed a significant relation between brain tumours and mobile phone use. Compulsive and constant mobile and computer use had been suggested to be associated with low self-esteem in an adult population in addition to alcohol intake and depression in adolescent populations—. The term 'Ringxiety' also called 'Phantom Ringing' has been defined as a condition where individuals hear the phone ringing when it actually has not. About 25% of the mobile phone users in India have been suggested as suffering from ringxiety.

Excessive use of mobile phones has been reported to be associated with stress, depression—, sleep disorders—, aggression—, poor academic achievement, unprotected sex, and anxiety.

Having a mobile phone and even fear of not having it, both have been

reported to be causes of stress. The term "Nomophobia" is used as an abbreviation of "No Mobile Phobia". Fear of being out of mobile phone contact affects over 13 million people across the UK. A study conducted by You Gov revealed that nearly 53% of mobile phone users (58% men and 48% women) in Britain tend to get anxious or panic or phobic when they lose their mobile phone, run out of battery or credit, or have no network coverage. Over 20% accept that they never switched off their mobile phones – with one in ten citing the reason as job requirements, 9% saying the need to switch off their mobile phones made them anxious and 55% giving the reason as keeping in touch with friends, and family.

Mindfulness, derived from Buddhism, is defined as "the awareness that emerges, on purpose, by paying attention to the moment to moment experience, nonjudgmentally". It has been defined as the process of engaging a full, direct, and active awareness of experienced phenomena that is spiritual in aspect and that is maintained from one moment to the next. It is one of the fastest growing areas in the field of both physical and mental health. It has been found that over 70% of the general practitioners in the UK believe that mindfulness can be beneficial for the mental health issues posed by patients.

Mindfulness based relapse prevention (MBRP) has been found to be an effective treatment for reducing substance use relapse. Other examples of various mindfulness based interventions (MBIs) used in behavioural addiction treatment studies include Mindfulness Based Cognitive Therapy (MBCT), mindfulness enhanced cognitive behavior therapy, Mindfulness Based Stress Reduction (MBSR) and meditation awareness training—. In our part of the country a popular Mindfulness Based Cognitive Behavior Therapy intervention is Mindfulness Unified Cognitive Behavior Therapy (MUCBT). MUCBT is a 10 week program with one 150 minute session on a pre-fixed day of every week. MUCBT-B is a brief version of MUCBT with 4 sessions, each of 150-180 minute duration.

The major components of various mindfulness based interventions include weekly sessions of 90-180 minutes duration, a psycho-education session, guided mindfulness exercises and a CD of guided mindfulness exercises to facilitate daily self-practice and various degrees of one to one discussion based therapy with the program facilitator. The present study was planned because there is no data on mindfulness based cognitive therapy interventions from our part of the country.

Methodology

This pilot study aimed to find the effect of MUCBT-B, a 4-week Brief Mindfulness Unified Cognitive Behaviour Therapy (MUCBT-B) program in reducing perceived stress and total time spends in intentional physical contact with the mobile phone and computer while

using internet one month after the four week training. The hypothesis of the study was that the 4 weeks MUCBT-B program will result in the reduction in perceived stress and total time spent in intentional physical contact with the mobile phone and computer. 18 adolescent students of both genders who were brought with complaints of excessive mobile phone use by parents were taken as study sample.

Exclusion criteria were clinically suspected intellectual subnormality, psychiatric disorder amounting to a severity which impairs participation in structured activities of the MUCBT-B program and any evidence of psychoactive substance abuse. No subject was on any psychotropic medications. Those students whose parents were not willing to start any medications for their children were taken into the study. Two subjects who were willing to participate in the study were excluded because of starting of mood stabilizer and antipsychotic medications.

We also intend to follow-up the sample at every months for an year to see the longitudinal effect of MUCBT-B.

Tools for the Study

The main tools used for the study were a semi-structured proforma for collecting socio-demographic data, 4 item perceived stress scale (PSS-4) and Mindful Attention Awareness Scale (MAAS). PSS-4 and MAAS were done during the pre- assessment phase and as a part of post assessment one month after the 4thweek session. Sessions were conducted for about 150 minutes on a specific day of the week. One parent was present with the sample, during the sessions. Parents were also requested to practice the Mindfulness exercises taught during each session. Some of the exercises included the parent and child participating together in the exercise.

Perceived Stress Scale (PSS-4)

PSS-4 is a short version of PSS-10, which measures the degree to which circumstances in one's life over the past month are appraised as stressful. The PSS-4 poses general queries about relatively current levels of stress experienced.

The 4-item version is appropriate for use in situations requiring a very brief measure of stress perceptions. It is not a diagnostic instrument. The higher the degree and longer the duration of self-perceived stress, indicated by a higher score, is considered a risk factor for a clinical psychiatric disorder.

Mindful Attention Awareness Scale (MAAS)

The MAAS is a 15-item scale designed to assess a core characteristic of dispositional mindfulness, namely, open or receptive awareness of and attention to what is taking place in the present. The scale shows strong psychometric properties and has been validated with college, community, and cancer patient samples. The measure takes 10 minutes or less to complete.

Results

Results were analyzed statistically by using frequency and paired t test. There were a total of 18 participants. 11 participants (61.11%) were males and 7 participants (38.89%) were females. All the participants were 14-18 years of age. The mean age of the participants was found to be 15.5 (SD=0.9852). Mean age of Male Participants was 15.45 (SD=0.6875) and female participants were 15.57 (SD = 1.3972). The mean number of hours the participants were spending with internet or computer were 6.22 (SD=0.878). Females used to spend more time (6.571 hours; SD=0.787) than males (6.00 hours; SD=0.894).

Table 1 clearly shows the difference the mean scores in PSS, MAAS and total duration of Mobile/ Computer use for different genders and for the whole group before and after intervention. The PSS-4 and Total Mobile/ Computer use lessened by about 50% and the mindfulness score as detected by MAAS increased by about 3 times the pre-intervention score.

Table 1 Mean scores of the whole group with gender specific differential scores:

Variable	Male	Female	Total
PSS Pre Mean	11.545	11.286	11.444
SD	2.382	2.498	2.357
PSS Post Mean	5.636	5.286	5.500
SD	1.433	1.254	1.339

Mobile/Computer Use Pre (Hrs)	6.00	6.651	6.222
SD	0.894	0.787	0.878
Mobile/Computer Use Post (Hrs)	2.000	2.429	2.167
SD	1.000	1.272	1.098
MAAS Pre Mean	7.636	6.142	7.056
SD	2.540	2.115	2.437
MAAS Post Mean	21.545	20.857	21.278
SD	2.339	1.772	2.109

Table 2 shows the Paired samples t test showing significance level of Perceived Stress Scale (PSS), Scores on Mindful Attention Awareness Scale (MAAS) and total intentional physical contact with the mobile phone and computer in 24 hours.

Table 2

Significance level of Perceived Stress Scale (PSS), Scores on Mindful Attention Awareness Scale (MAAS) and total intentional physical contact with the mobile phone and computer in 24 hours

Variable	Mean	SD	T	Df	Sig. (2 tailed)
intentional physical contact with the mobile phone and computer while using internet	4.056	1.056	16.299	17	.000*
MAAS	14.222	2.602	23.188	17	.000*
PSS	-5.944	1.697	-14.863	17	.000*

* Results are significant at p value </= 0.01. CI= 95%.

DISCUSSION

Mindfulness is one of the fastest growing areas of research in the field of mental healthcare especially, especially clinical psychology and psychiatry. This pilot study of an Indian Mindfulness Based Intervention aims to discuss the major findings of the feasibility trial to study the effect of MUCBT-B on Smartphone/ Computer Addiction among adolescents. All study subjects in the current study showed significant reduction in scores of PSS-4 and also in the total time spent with mobile phones.

Several earlier studies have also shown the relation between smart phone addiction and mindfulness and have suggested societal solutions for their resolution(35).

Another study using a group mindfulness-based cognitive-behavioural intervention (GMCI) on smartphone addiction in a sample of Chinese university students has shown reduced smartphone use and increase in mindfulness scores(36). Our study also gives also similar results.

An out-of-school mindfulness program on adolescents' stress reduction and emotional wellbeing reports reduction in perceived stress and increase in levels of mindfulness skills. The study has suggested that using an out-of-school mindfulness program may be an effective way to teach adolescents to use mindfulness to manage stress and to cultivate more positive emotional and social skills(37). Being an out of school program in itself, our study has peculiar similarity to the above mentioned study.

Considering the findings from the pilot study, we would like to suggest that out of school mindfulness programs for adolescents may also be conducted in our part of the country which perhaps is an area being flooded with various adolescent concerns like, substance use disorders, behavioural addictions and the like.

The three key areas which we have investigated in this pilot study are (1) intentional time spent with mobile phone and computer (2) Mindfulness scores and (3) Perceived Stress Score. Our pilot study has suggested that a structured mindfulness based intervention (MUCBT-B) has demonstrated its effectiveness in reducing the time spent with mobile phone and computer and also the perceived stress. Also it is found that, there is an increase in mindfulness score following the 4 week training in structured mindfulness intervention. Combining these findings we would like to suggest that further comprehensive studies in this field are required.

Limitations of the study

The primary limitation of the study was the small sample size. Assessment was done using screening instrument and needs to be repeated with more standardized specific tools. No proper blinding was accomplished in this pilot study. Duration of Mobile phone/ Computer use by adults in the household was not explored in this study. If the sample is able to prolong the newly learnt skill with behavioural change for longer duration, MUCBT-B may be considered an effective to efficacious strategy in managing behavioural addiction. These limitations of the study need to be addressed in follow up studies for the results to be generalized.

Conclusion

Recent years have witnessed a significant increase in the use of mobile phones by individuals irrespective of age and sex. Many individuals derive short and long term benefits from using the mobile phones. But in a minority, excessive social media engagement is associated with a variety of maladaptive psychosocial outcomes. These individuals showed impairment in function in social, occupational and other areas, yet didn't meet the criteria for a psychiatric disorder according to standard diagnostic criteria. Though medications can be used to treat many of these sub-syndromal behavioural patterns, many a times use of medications is not practical and is met with aversion by the society. Innovative non-pharmacological strategies which can ameliorate the detrimental effects have to be brought in to deal with the situation. Mindfulness has been recommended to be a strategy which can be used in management of substance use disorders and its use has been extended to mobile use disorders also. This pilot study shows that MUCBT-B is helpful in reducing the symptoms of increased and disturbing mobile phone and computer use. It has also suggested an increase in the mindfulness scores which can be helpful in social skills and life skills training.

In tune with many of the studies available, the current study also suggests that mindfulness based interventions may be an effective tool in addictive behaviours. The public interest and awareness of mindfulness are also increasing in recent times. Although preliminary studies indicate the need for application of MBIs in behavioural addiction management, the need for more methodologically robust research has to be emphasized.

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