NEGATIVE EMOTIONAL REGULATION AND ITS RELATIONSHIP TO PROBLEMATIC USAGES OF MOBILE PHONES

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ABSTRACT:

The current study intended to explore the impact of technology on psychological wellbeing of late adolescents. The main objective was to investigate the relationship between emotional regulation and maladaptive phone usage and to determine the extent to which problematic phone usage regresses on Emotional regulation. Purposive sampling was used to collect data from 50 first year Undergraduate students (mean age = 18 years) of the Department of Visual communication. The key variables of interest were Problematic usage of mobile phones and Negative Emotional regulation. An ex-post facto research design was used to establish the relationship between the variables. The Negative Mood regulation Scale [1] and Mobile phone problematic usage Questionnaire [2] were used to measure the variables of interest. The participants took an online survey that was designed using Google Forms and the data was analysed using SPSS 16. Pearson product Moment correlation and Simple Linear regression were used to statically analyse the data. The results revealed a significant negative relationship between Negative Mood Regulation and Problematic Usage of Mobile phones ($r = -.76$, $p<.05$). It was also found that Negative Mood Regulation accounted for 47.3% of variance in problematic usage of mobile phones ($R^2 = .473$, $p<.01$). These findings have serious implications in designing interventions for maladaptive phone usage which should not only focus on behaviour modification but also address emotional dysregulation which may be the root cause of the problem.

KEYWORDS: *Negative Emotional Regulation, Predictive capacity, Problematic phone usage,*

INTRODUCTION

Use of the Internet and smartphones has grown all over the world, with more than three billion people using the Internet dailyand two and half billion people using smartphones every day [3]. Mobile phones have a number perceived benefits such as increased social connectivity, accessibility to data, promoting academic efficacy and convenience at the workplace but in the recent times a widespread outcry of self-professed "cell phone addiction" is on the rise [4]. Also, there has been an increase in public recognition of automobile accidents caused due to distraction from using mobile phones, health consequences such as stiff neck, dry eyes, migraines, fatigue, insomnia, and dizziness and its negative effect on interpersonal relationships. Though DSM-5 does not include any disorder related to problematic usage of mobile phones, there is much debate in it's inclusion as a diagnosable condition. Data from recent research suggest that some problematic users of mobile phones exhibit behaviour that is analogous to the diagnostic criteria for substance use disorders and pathological gambling [5]. These symptoms include preoccupation with mobile phone-based communication, excessive time or money spent on mobile communication plans, use of cellular devices in socially inappropriate or even physically dangerous situations (e.g., "texting" while driving an automobile), adverse effects on

relationships, increased frequency or duration of mobile phone communication, and anxiety when separated from one's telephone or when without an adequate cellular signal [2]

It is is important to note that individuals are not addicted to mobiles per se, rather they are addicted to the entertainment and communication that technology offers. Definitions of mobile phone addiction is varied. It may encompass inability to regulate use, resulting in negative physical, psychological and financial consequences and also signs of craving, tolerance, withdrawal symptoms and functional impairment [6]. Tolerance is likely to lead to increasing amounts of usage of the device to achieve the same level of gratification[7]. Withdrawal symptoms include irritability, depression, and annoyance when the user is unable to use the Internet or mobile phone, while at the same time engaging in obsessive thinking or fantasies about using the technology to reduce withdrawal symptoms.

Thus it is well established that mobile phone usage can produce psychological disorders in certain type of users. Future research will have to focus on the risk and preventive factors. Personality appears to be one risk factor, with Borderline personality disorder being the most prevalent among this population, followed by Antisocial personality disorder [8]. Another risk factor appears to be a history of affective disorders such as anxiety and depression. Thus psychological disorders can not only be consequences but can also be causal factors in the development of maladaptive phone usage [9]. Keeping in mind the relationship between emotional states and compulsive use of mobile phones, the present study aims to establish a link between emotional dysregulation and problematic usage of mobile phones .

1.1. Emotional Regulation (ER)

Emotion is defined as "episodic, relatively short-term, biologically-based pattern of perception, experience, physiology, action and communication that occur in response to specific physical and social challenges and opportunities" [10]. This lends itself to view emotion as consisting of various component processes such as subjective feelings, expressive motor behaviour, cognitive appraisal, physiological arousal, readiness to take particular actions in response to internal or external events and the resultant communication that occurs to name a few.

We are constantly bombarded with emotion provoking stimuli but it is only occasionally that we manifest full blown emotional response suggesting that there is a constant overriding of spontaneous emotional displays which is nothing but Emotional regulation. Emotional regulation is the process of manipulating the trajectory of an emotional response and it may be a conscious or an unconscious process [11].

One model of understanding the emotion generation process is the modal model which comprehensively unites commonalities of multiple approaches of understanding emotions [12]. It begins with a psychologically relevant situation (external or internal) followed by direction of attention towards it, appraisal of the situation's meaning in relation to the individuals active needs and goals, and finally change in the emotional, mental or physical behaviours of emotional expression. This model also allows us to study emotion regulation corresponding to sequence of the emotion generation process (See Figure1.1).

Literature provides strong evidence for the importance of emotional regulation. A disagreement between the emotion and an event can have serious interpersonal, intrapersonal and physical difficulties. Emotions of the wrong intensity, duration and frequency in inappropriate situational contexts lead to maladaptive biased cognition and behaviour responses. The instances of emotions being unhelpful are abundant such as anger leading to harm of self or others, sadness leading to under-productivity, etc. This motivates the necessity of regulating the emotional responses to reach one's active goals [12]

1.1.1. Components of Emotional Regulation

There is no universality in the definition of ER and its components. This has led to inconsistencies across empirical research in the assessment, level of analysis and methods of

investigation of ER. For the present study, we consider MacDermott's components of ER: They are emotional control, emotional self-awareness and situational responsiveness. The first is the capacity for controlling outward expression of emotions and inner feeling states. Self-awareness is the degree to which one is aware of the intensity, duration, latency, frequency, consequences and appropriateness of an emotion. The third component is the ability to respond appropriately to social cues called as situational responsiveness [13]

1.1.2. Strategies of emotion regulation

Another way to conceptualise emotional regulation is look at the strategies used in ER. According to J.J. Gross, there are two methods of performing ER depending on where in the emotion generation paradigm it happens. Antecedent focused ER is used before the emotional response has become active [12] An example would be cognitive reappraisal, where one redefines the meaning of emotional cues to change its impact. In response focused ER, the emotional response has already become active. Emotional suppression is an example that involves inhibition of an emotion-expressive behaviour [13]

1.2 . Negative mood regulation and Maladaptive phone usage

It is posited that beliefs about one's inability to regulate negative emotions is linked to a range of clinical disorders including substance abuse, generalised anxiety disorders, PTSD and compulsive behaviours [14]. The thread linking negative mood regulation and problematic usage of mobile phones is not yet researched deeply. But there are increasing number of studies that draw an association between poor emotional regulation and dependence on substance [15].

Successful mood regulation is often equated with the use of adaptive coping strategies such as cognitive re-appraisal, seeking social support and problem oriented approaches. These are believed to be associated with positive psychological outcomes such as reduced stress and subclinical symptoms of psychopathology [7]. However, use of maladaptive strategies such as denial, avoidance and displacement predicts a range of negative behavioural and psychological issues such as substance dependence, anxiety and depression. But there is no clear understanding about the individual differences in the usage of adaptive vs maladaptive coping strategies.

Research has unveiled that individuals who show signs of mobile phone addiction are poor in regulating negative affect [9]. When confronted with troubling situations such as loneliness, frustration, or interpersonal problems, they readily turn towards technology that offers a safe refuge from the hassles of everyday life [16]. Especially virtual reality applications on the mobile phones create a sense of connectedness with others through online games or social media channels but paradoxically alienate the person from the real world. This is called as "internet Paradox" [15]. Thus using mobile phones as a means of distracting oneself from difficult situations is a maladaptive mood regulation strategy that can have long term consequences such as as a poor experience in handling interpersonal difficulties that shrinks one's repertoire of adequate emotional responses.

Another maladaptive coping strategy is emotional suppression which may offer short term benefits but can have serious negative ramifications in the long run. Studies have reported that techno dependence helps people nullify strong emotions, resulting in blunt affect which causes serious inter personal and intrapersonal difficulties [12]. Seeking social support has often been considered to be an adaptive coping strategy but it has its limitations keeping in mind an intrinsic dependence behaviour associated with it [7]. People who use phones maladpatively are likely to overexploit the accessibility that it offers by constantly turning towards people in the face of distress Though social support boosts well being, the kind and type of support matters .It has been found that some individuals are likely to engage in addictive texting where they constantly update significant others about their life situations, eliciting sympathy and support. In extreme cases it creates a strong need for approval and reliance on a significant figure. Such individuals are unable to even take minor decisions without consulting multiple people via text messages or calls (Liamng, 2011).

Recent research has begun to explore compulsive Mobile phone checking as a way of dealing with anxiety invoking obsessions [17]. There are new records of OCD patients who deal with their obsessions though compulsive mobile phone checking (unlocking and locking the phone a certain number of times, changing the screen saver a certain number of times, calling a specific number of people, texting using specific words etc..). Thus mobile phones appear to be readily available objects that draw compulsive behaviour in people Vulnerable to Obsessive Compulsive Disorders [8]. Also, There is a growing tendency of excessive mobile phone users to deal with anxiety provoking situations such as Threatening thoughts and Images (people are going to laugh at me, I am going to fail, I am worthless….) by submerging themselves in the various application of smart phones. This Avoidance behaviour is reinforcing, creating a vicious cycle.

Not only does mobile phone dependence promote less efficacious coping strategies such as suppression, denial and attentional deployment but it also reduces the likelihood of a person using cognitive reappraisal which is considered to be the most adaptive strategy where the person alters the meaning attached to the situation so as to see it as less threatening or disturbing .Overall, it can be concluded that problematic usage of mobile phones has a negative impact on the regulation of emotions effectively. It promotes short term gratification and less functional responses rather than helping the person deal with an emotion provoking situations at a deeper level by expanding self - awareness and employing response modulation strategies.

NEED FOR THE STUDY

Mobile phone being considered an "affective technology" is deeply connected to the emotional lives of users and is a powerful tool in Cyber Psychology. But very little scientific research has been done on it's usage and associated psychopathology, especially in a developing country such as India. It has addictive properties with it's innumerable applications such as music, games, news and information and videos which may have serious emotional ramifications. Significant research has done been done on Mobile phone usage and it's relationship to Depression, isolation, anxiety and self -esteem (Belshare, 1999) but it's relatedness to Emotional regulation is scarcely researched upon. The current study aims to close this gap in literature by trying to establish the predictive capacity of Emotional Regulation on Problematic Phone usage.

METHOD

3.1. Sample

Purposive sampling was used to select fifty first year undergraduate female students (M_{age} = 18.3 years, age range: 17 - 20 years) of the Department of Visual Communication at Women's Christian College, Chennai. The rationale for choosing students from the Visual Communication department was due to their course work (animation, designing, short filmmaking etc..) that requires them to constantly be in touch with technology (mobile phones, computers). This increases their chance of using mobile phones maladpatively.

3.2. Tools Used

3.2.1. Negative Mood Regulation Scale (NMR) (Catanzaro & Mearns, 1990):

Negative Mood Regulation Scale is a 30-item questionnaire that measures generalised expectancies for alleviating negative moods. Participants are asked to indicate the degree to which they believe their use of various coping strategies alters their negative moods. For each item, participants responded on a 5-point scale ranging from strongly disagree (1) to strongly agree (5). Sample items include, ''I can do something to feel better;'' and ''I'll feel okay if I think about more pleasant times.''
Scoring

Thirteen items were reverse scored and a total cumulative score was obtained by adding the rating for all items . Higher the score on the NMR scale, stronger the belief that one can alleviate negative moods.

Reliability

The NMR Scale has a high level of internal consistency (α = .86 to .92) and is a unifactorial scale. It has a good test-retest reliability over a two-week period (r = .67 to .78) [1]

Validity

The scale has good construct validity as it correlates in theoretically predictable ways with measures of depression, anxiety, coping responses, and emotional states, and has demonstrated discriminant validity from social desirability, locus of control, and depression [1]

3.2.2. Mobile Phone Problematic Usage Questionnaire (MPPUS) (Bianchi&Phillips, 2005):

MPPUS is 24 item questionnaire designed to evaluate the many symptoms associated with maladaptive mobile phone usage such as mobile phone addiction, withdrawal symptoms and destructive effects on health, social, economic and vocational status. For each item, participants responded on a 5-point scale ranging from strongly disagree (1) to strongly agree (5). Sample items include "I lose sleep due to the time I spend on my mobile phone" and "I have received mobile phone bills I could not afford to pay".

Scoring

A cumulative sum is obtained by adding the rating for all items . Higher the score on the scale, the more problematic is the person's usage of mobile phones.

Reliability

A test of internal reliability (Cronbach's alpha) was calculated on the MPPUS to demonstrate the level of internal consistency among items. A Cronbach's alpha of .93 was obtained, demonstrating a high level of internal consistency and suggesting that items are homogenous and related to the construct of "mobile phone problem use" (Philips, 2006). The test-retest reliability over a 5 week period was .56 (Kalhori, 2015). In another research, Takao et al. has reported that the Japanese translation of Mobile Phone Problem Usage Scale had good internal reliability (Cronbach's alpha =.89), showing a high level of internal consistency.

Validity

To assess the construct validity of the MPPUS, the relationship between this questionnaire and other scales of mobile phone dependency were considered. One measure of mobile phone use is self-reported questionnaire called CPDQ. There was a strong positive correlation between the scores on the MPPUS and the CPDQ, (r = 0.70, p < 0.01). Also, there was a significant and positive relationship between the total score of the questionnaire and the time spent on the mobile phone (r = .40, p < 0.001).

Factor Analysis reveals the multidimensional nature of MPPUQ. Three factors including preoccupation, withdrawal symptoms and overuse of mobile phones were extracted and the factor loadings were satisfactory. These three factors were the same factors which were mostly obtained by the experts who did researches on behavioural addictions (Kalhori et al., 2015).

PROCEDURE

Data collection was done through online surveys where the two standardised questionnaires were typed out in Google forms software and the link was circulated through WhatsApp messages to the entire class of participants. Confidentiality agreement and a personal data sheet were also attached to the survey. The response channels were open for a week. Following the collection of data, the responses were analysed using SPSS 16.

5. Statistical analysis
1. Pearson product moment correlation for establishing relationship between negative emotional regulation and problematic mobile phone usage.
2. Simple linear regression to study the extent to which negative emotional regulation predicts problematic mobile phone usage.

RESULTS AND DISCUSSION

Table 1: Pearson product moment correlation between Negative emotional regulation and Problematic usage of mobile phones

	Measure	1	2	M	SD
1.	Negative Emotion regulation	-	-.76*	93.54	3.24
2.	Problematic Mobile phone usage	-.76*	-	98.73	6.45

* p<.05, two-tailed

Table 1 indicates that the mean score on Negative Emotion regulation scale (M= 93.45, n=50) is towards the lower end of the spectrum (which ranges from 78 to 102) indicating that the sample as a whole may experience difficulty in successfully alleviating negative mood. Also, their mean score on Problematic mobile phone usage (M= 98.73, n=50) appears to be on the higher end (range= 24 -120), implying signs of maladaptive phone usage.

The results also reveal a significant negative relationship between Negative emotional regulation and problematic mobile phone usage (r = -.76, p<.05). This insinuates that, as individuals beliefs in their ability to successfully deal with negative emotion reduces, the likelihood of pathological mobile phone usage increases or vice versa. The findings are consistent with research studies that have found a positive relationship between depression, anxiety, guilt (the crux of which is Emotional dysregulation) and Mobile phone addiction [15].

Table 2: Negative emotional regulation (NER) as a predictor of Problematic usage of mobile phones

Model	Variables	β	t	R	R^2	Adjusted R^2
1	Constant	198.47				
	NER	-2.27	66.80**	.483	.469	.473

**p<.01

Table 2 indicates that Negative emotional regulation is a significant predictor of Problematic usage of mobile phones. A significant regression equation was found (F(1,50)= 2.91,p<.001), with an R^2 = .473. This implies that 47.3% of variance in problematic usage of mobile phones can be predicted from one's inability to deal with negative emotions adequately.

The results can be explained by the Process model of Emotional regulation. In the context of using mobile phones as a source of escape, people who have poor emotional regulation skills may actively engage in less efficacious methods of coping such as avoidance of distressing situations by

opting to use the mobile phones, distracting themselves from negative thoughts by replacing it with mobile phone applications and suppression of intense emotions by choosing to rely on virtuality rather than reality. These strategies work at both the antecedent and response focused levels of emotional generation   [12]

This is substantiated by the results of percentage analysis of scores on the Mobile phone problematic usage Questionnaire (Bianchi & Philips, 2005). Sixty five percent of people have reported "Strongly agree" to statements that indicate using mobile phones for alleviating distress such as "I have used my mobile phone to make myself feel better when I was feeling down" (distraction); "I have used my mobile phone to talk to others when I was feeling isolated" (Relying on virtual medium); and "There are times when I would rather use the mobile phone than deal with other more pressing issues" (avoidance). Further analysis reveals that 63% percent of these individuals lie on the 75th percentile in the Problematic usage of mobile phones and the bottom 30th percentile in the negative emotional regulation questionnaire. This implies that those individuals who have reported to use their mobile phones for alleviating negative emotions are also the people who are likely to manifest problematic phone usage and experience poor emotional regulation as a whole.

CONCLUSION

The results reveal that lack of belief in one's ability to successfully alleviate negative emotions significantly predicts problematic mobile phone usage. This supports the notion of mobile phones being an "affective technology" that readily manipulates people emotional states.

IMPLICATION

The findings of the present study has serious implications in the development of intervention avenues for problematic mobile phone usage. Current treatment options such as SHUT clinics and digital detox centres primarily focus on behaviour modification but the results of the current study indicate a pressing need to address the underlying problem of emotional deregulation which appears to be a source for the development of pathological phone usage. However, further research needs to be done to understand the kind of applications (online gaming, music, videos, online shopping, gambling) that people use when experiencing negative affect and develop better intervention programs for promoting emotional regulation in the age of Information technology.

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