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ADDICTIVE CELL PHONE USAGE: THE RELATIONSHIP BETWEEN IMPULSIVINESS AND BEHAVIORAL ADDICTION

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ABSTRACT

The present study was designed to investigate the predictive relationship between impulsiveness and behavioral addiction. The sample of the study comprised of 100 male and female with an age range of 14-40. Mobile Phone Involvement Questionnaire (Walsh, White, & Young, 2010) which is based on Brown's (1993,1997) Behavioral Addiction Components was used to measure behavioral addiction as manifested by addictive cell phone usage. To measure personality trait of impulsiveness, Barratt Impulsiveness Scale (Patton, Stanford, & Barratt, 1995) was administered. Linear Regression Analysis was applied to interpret the data in statistical terminology. The results indicated impulsiveness and it's all three facets: attentional impuslivesnes, motor impulsiveness and non-planning impulsiveness to be the significant predictors of behavioral addiction as manifested by cell phone usage. The findings have implications for researchers and clinicians.

Keywords: Behavioral Addiction, Impulsiveness, Cell phone, Addictive usage, Facets of Impulsiveness

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INTRODUCTION

The term 'addiction' is no more confined to the usage of psychoactive drugs. Peele (1985) asserted that it is not the drugs but the experience that people get addicted to. Following this notion, researchers began to study non-substance addiction which includes various addictive behaviors. Addictive behaviors are the habits that turn into obligation (Peele & Brodsky, 1979).

Functional neuroimaging, genetic studies and treatment research have revealed a striking similarity between behavioral addiction and substance addiction (Grant, Brewer,& Potenza, 2006). It is found that the biochemical mechanism involving reward circuitry and the release of dopamine that underlie substance addiction explains behavioral addiction as well. Although physical signs of addiction may not always be present with behavioral addiction, functional impairment and withdrawal symptoms are common. Furthermore, people suffering from behavioral addiction often report addiction-specific phenomena which includes craving, excessive behavior, psychological and physical withdrawal symptoms, loss of control and development of tolerance.

Since the first step to cure addiction is to identify it, there was a need to establish the criteria to gauge non-substance addiction. Brown (1993, 1997) proposed six components that can be used to identify behavioral addiction.

1) Salience: Significance of that activity/behavior in one's life
2) Euphoria: Elation that the activity/behavior produces
3) Tolerance: The activity/behavior has to be done to a greater extent to achieve the same effect
4) Withdrawal symptoms: Cessation of the activity/behavior causes undesirable emotional or behavioral consequences
5) Conflict: Activity/behavior gives rise to conflicts with self and/or others
6) Relapse and Reinstatement: Tendency to return to the activity despite exercising some control over it for a period of time

Compulsive usage of mobile phone is one such addictive behavior which interferes with daily activities, occupational and social functioning.Yen and colleagues (2009) surveyed 10,191 adolescents and found that 30% of participants exhibited tolerance, 36% suffered withdrawal, 27% exhibited loss of control, 18% experienced relapse and 10% had conflict owing to excessive mobile phone usage. Stillman (2014) uncovered how mobile phone addiction

ruins relationship by substantially undermining the conversation between couples. Ito in 2006 reported that excessive cell phone usage resulted in financial problems for individuals. Thus, it would not be naïve to consider cell phone as a drug of choice.

With the advent of cellular phone, it was believed that this technology will make life easier for their consumers by strengthening the communication channel. Apart from communication, cellular phone offered its users a range of options such as games, calendar, calculator, time, alarm, radio etc. With the passage of time, the technology became more advanced and the era of smart phones opened a new horizon for their users. Nowadays, mobile phone is not just a communication device; it has replaced numerous gadgets and tools. Youth use cell phone to stay connected to their friends and family, to entertain themselves, to capture memories, to access social networking sites and it also helps them in academics. Professionals, with the help of mobile phone, can organize their tasks and meetings conveniently, respond to emails promptly and share documents. Moreover, the use of cell phone has also revolutionized marketing and banking sector. Be it a security guard or a CEO, a teenager or an adult, mobile phone has become a necessity for all.

In spite of the plethora of benefits, it has been witnessed that the pattern of mobile phone usage has become problematic and alarming. In addition to addiction, numbers of psychological labels are being used frequently to explain excessive mobile phone usage; anxiety, phobia, obsession, compulsion and mania are the terms that are often associated with undue cell phone usage. Cell phone has become a compulsion and individuals develop anxiety if they do not have their cell phones in reach. The 'high' experienced while using cell phone is reflective of mania. Nomophobia is a term coined for an irrational fear of being without mobile phone or being unable to communicate via mobile phone (King et al., 2014). Jones (2014) cited a study conducted by Brian wherein she found that students experienced bodily changes and emotions which exclusively indicates addiction. Furthermore, students felt anxious, tensed and lonely without their cell phones. Shambare,Rugimbana, and Zhowa (2012) concluded that individuals tend to develop dependency on their mobile phones which reflects behavioral addiction.

To analyze whether the mobile phone addiction prevails in west only, we need to review the prevalence and pattern of mobile phone usage in Pakistan. According to Pakistan Telecommunication Authority (2015), there were 116

million subscribers in July 2015 which indicates that mobile phone penetration has reached a record level of 73.5%. Pakistan is ranked among the top ten countries with largest number of cell phone subscribers (Ahmed & Qazi, 2011). From the available statistics, it can be deduced that the mobile phone usage has boomed drastically in Pakistan and that too across all ages and socioeconomic classes. Ali, Rizvi and Qureshi (2014) explored cell phone mania among Pakistani youth and found that mobile phone is a source of gratification for boys as well as girls. It was ascertained that mobile phone has become an indispensable part of the youth lifestyle and it asserts a key influence on their well-being and their social and academic functioning. The study reveals the fact that dysfunctional mobile phone usage is not uncommon in Pakistan.

There is a dire need to address mobile phone addiction and for that, it is essential to understand what drives this addiction. Besides several reasons, impulsivity is hypothesized to be one of the key factors associated with the development of addiction. Impulsivity is a failure to resist an urge which is the first step towards addiction. Lee et al. (2012) carried a study with people diagnosed with different behavioral addictions. Their findings depict that people suffering from behavioral addiction showed increased level of impulsivity. According to Barratt (1994), impulsivity is the multi-dimensional construct with three main facets, i.e. attentional impulsiveness, motor impulsiveness and non-planning. Attentional impulsiveness includes being unable to concentrate and it is associated with cognitive instability. Motor impulsiveness can be gauged through one's imprudent behavior and lack of perseverance. Non-planning is the inability to anticipate the consequences of the behavior which results in the failure to control one's self. It can be presumed that all three facets of impulsivity are linked to behavioral addiction. Gentile et al. (2011) studied the risk factors for developing video game addiction (type of behavioural addiction) and found that impulsivity is one of the significant risk factors for behavioural addiction. Findings of a longitudinal study carried out by Billieuxet al. (2011) suggest that impulsivity can predict behavioural addiction. Roberts and Pirog (2012) asserted that impulsivity is one of the key factors which can turn cell phone usage into behavioral addiction.

Though the addictive cell phone usage is a growing concern in our society which is highlighted by a fair number of studies, we do not have ample culturally relevant literature concerning the factors that underlie behavioural addiction. For that reason, there is a need to study whether impulsivity can be one of the significant factors that drives behavioural addiction among Pakistanis. The

primary purpose of designing the present study is to explore the predictive relationship between impulsivity and cell phone addiction. Although the excessive and unhealthy use of cell phone is not a rare occurrence in Pakistan as pointed out by Ali, Rizvi and Qureshi (2014), people seldom approach clinicians to overcome this problem owing to lack of awareness. Thus, one of the ways to explore the link between impulsivity and behavioural addiction is to study masses and the insights generated can later be generalized to clinical segment as well. Hence, clinicians would be able to comprehend and treat behavioral addiction by targeting impulsiveness in the patients.

Contemplating existing literature, it was hypothesized that

1. There would be a predictive relationship between Impulsiveness, Attentional Impulsiveness, Motor Impulsiveness, Non-Planning and Behavioral Addiction as manifested by Mobile Phone Usage.

METHOD

Participants

One hundred mobile phone users served as a sample for the study. 60% of the mobile phone users were females and 40% were males. Sample was collected from different community settings of Karachi, Pakistan. Average age for men in the sample was 25.15 (*SD* = 4.44) with range = 14 - 40 years and for women mean age was 24.58 years (*SD*= 2.87) with range = 19 - 40 years. Regarding subscription of the packages that cellular network offer, 49% of the sample reported that they often subscribe, 31 % sometimes, 11% always and 9 % stated that they do not subscribe to any package.

Measures

For the estimation of mobile phone usage and for other demographic variables, simple-worded questions were framed. Demographic information was tabbed through questions that focus on the respondent's age, gender and qualification**.** Cellular network, mode of payment and frequency of mobile phone usage was inquired. Participants were also asked to report the frequency with which they subscribe to different packages offered by their network.

Mobile Phone Involvement Questionnaire (MPIQ)

Level of behavioral addiction was measured by Mobile Phone Involvement Questionnaire (MPIQ) developed by Walsh, White and Young (2010). The MPIQ is an 8-item scale based on Brown's (1993, 1997) behavioral addiction components. Respondents had to select the level of agreement or disagreement with the given statements on a 7-point Likert scale. Cronbach's α for the scale averages .78 which suggests moderate reliability (Walsh et al., 2010).

Barratt Impulsiveness Scale (BIS)

Impulsivity was measured via Barratt Impulsiveness Scale-11 (BIS; Patton, Stanford & Barratt, 1995). The BIS-11 is a second version of BIS-1 which was originally developed in 1959. It is a 30-item questionnaire that measures personality/ behavioral construct of impulsiveness. Items are rated on a 4-point scale ranging from never to always.It consists of three subscales: attentional impulsiveness, motor impulsiveness, non-planning impulsiveness. Internal consistency coefficients for the BIS-11 range from .79 to .83 (Patton et al., 1995).

Procedure

Since the scales used in the study were self-administered, questionnaires were distributed to the sample drawn using convenient sampling method. From the sample, mobile phone users who consented and returned the questionnaire in a given time became the part of the study. The questionnaire comprised of demographic information sheet, Mobile Phone Involvement Questionnaire (MPIQ) and Barratt Impulsiveness Scale (BIS-11). Respondents were reassured that there is no right or wrong response and they were requested to report their responses as accurately as possible. To satisfy the curiosity of the respondents, they were told about the purpose of the study in general terms before participation. Respondents were further debriefed about the study after they had responded to the questionnaires because sharing the details prior to administration would have biased their responses. Lastly, respondents were appreciated for their time and cooperation.

Statistical Analysis

Linear Regression Analysis was used to explore the predictive association between impulsivity and cell phone addiction. Descriptive Statistics were also employed.

RESULTS

Table 1
Summary of Linear Regression Analysis with Impulsiveness, Attentional Impulsiveness, Motor Impulsiveness and Non-planning as predictors of Behavioral Addiction

Predictors	***R***	***R²***	***Adj R²***
Impulsiveness	.380	.144	.136
Attentional Impulsiveness	.416	.173	.165
Motor Impulsiveness	.334	.112	.103
Non-planning Impulsiveness	.233	.054	.045

Table 2
Analysis of Variance for Linear Regression with Impulsiveness, Attentional Impulsiveness, Motor Impulsiveness and Non-planning as a predictor of Behavioral Addiction

Predictors	Model	*SS*	*df*	*Ms*	*F*	*Sig.*
Impulsiveness	Regression	1187.134	1	1187.134	16.522	.000
	Residual	7041.616	98	71.853		
	Total	8228.750	99			
Attentional Impulsiveness	Regression	1425.971	1	1425.971	20.542	.000
	Residual	6802.779	98	69.416		
	Total	8228.750	99			
Motor Impulsiveness	Regression	920.669	1	920.669	12.346	.001
	Residual	7308.081	98	74.572		
	Total	8228.750	99			
Non-Planning Impulsiveness	Regression	445.819	1	445.819	5.94	.020
	Residual	7782.931	98	79.418		
	Total	8228.750	99			

Table 3
Coefficients for Linear Regression with Impulsiveness, Attentional Impulsiveness, Motor Impulsiveness and Non-planning as a predictor of Behavioral Addiction

	Model	Unstandardized Coefficient		Standardized Coefficient	*t*	*Sig.*
		B	*SE*	*B*		
Impulsiveness	Constant	11.831	4.997		2.367	.020
	CB	.297	.073	.380	4.065	.000
Attentional Impulsiveness	Constant	13.858	4.056		3.416	.001
	CB	1.010	.223	.416	4.532	.000
Motor Impulsiveness	Constant	15.961	4.604		3.467	.001
	CB	.635	.181	.334	3.514	.001
Non-planning Impulsiveness	Constant	22.211	4.165		5.333	.000
	CB	.391	.165	.233	2.369	.020

DISCUSSION

The findings indicate a significant predictive relationship between impulsiveness and behavioral addiction as manifested by mobile phone addiction (R^2 = .144, F = 16.522, p< .01; Table 1, 2, 3). Our results are consistent with the previous studies (e.g, Billieux,Van der Linden, D'Acremont, & Zermatten,2007; Gentile et al., 2011). This notion stands true for adolescents and young adults in Pakistan.

To explore what constructs of impulsivity are strongly associated with cell phone addiction, analysis were run for each facet of impulsivity suggested by Patton, Stanford and Barratt (1995). All three facets of impulsiveness *i.e.*

Attentional Impulsiveness (R^2 = .173, F = 20.542, p< .01), Motor impulsiveness (R^2 = .112, F = 12.346, p< .01) and non-planning (R^2 = .054, F = 5.614, p< .05) are found to be significant predictors of behavioral addiction (Table 1, 2, 3). These findings could be explained as such: People who have attention deficit tends to get distracted easily and mobile phone is one of the most common sources of distraction. Thornton, Faires, Robbins, and Rollins (2014) ascertained mobile phone to be a key culprit of distracted attention. They further unveiled that even the presence of cell phone is enough to cause distraction and impair performance. Ahmed, Qazi and Perji (2011) studied the pattern of mobile phone usage among Pakistani youngsters and 40% respondents reported that they cannot live a day without their mobile phone. Therefore, attentional impulsiveness could be the consequence of cell phone addiction as well. Constant checking and usage of mobile phone does not allow an individual to sustain attention which explains why people are unable to concentrate on task at hand if they are addicted to their cell phones.

Further, the significant relationship between motor impulsiveness and mobile phone addiction implies that individuals who act on the spur of the moment are at high risk of developing behavioral addiction. Dalbudack et al. (2013) established that motor impulsiveness could predict behavioral addiction. Another study also unveiled that individuals having elevated levels of motor impulsivity, are susceptible to develop an addiction (Verdejo-Garcia,Lawrence, & Clark, 2008). Therefore, it can deduced that people who act rashly are prone to mobile phone addiction which may lead to problems in academic, occupational or social functioning. Among 400 Pakistani young adults, 32% reported that they reply to texts and calls even when it is not convenient which reflects motor impulsiveness and the tendency towards cell phone addiction (Ahmed, Qazi, & Perji, 2011).

Moreover, the predictive relationship between non-planning impulsiveness and cell phone addiction implies that people who fail to think about the consequences of their behavior in the long run often end up developing an impulse-control disorder, antisocial behavior or an addiction (Schreiber, Odlaug & Grant, 2011; Komarovskaya, Loper, & Warren, 2007; Dalley, Everitt, & Robbins, 2011). In the context of cell phone addiction, Billieux,Van der Linden, and Rochat (2008) concluded that lack of planning was specifically linked to the prohibited use of the mobile phone. It implies that individuals who exhibit lack of deliberation could be observed using cell phone in situations which warrant punishment or social disapproval.

Conclusion

Thus, it can be asserted that there is a dire need for our youngster to overcome impulsivity in order to prevent behavioral addiction. Additionally, both cognitive and behavioral manifestation of impulsiveness should be taken into consideration for identifying cell phone addiction.

Although the findings of the study are quite insightful, it has some limitations. Since self-reported measures were used, responses could be biased. Paired interviews with friends or family can be more enlightening to give a more accurate picture. Age-wise analysis should be done to gauge the pattern of cell phone usage and impulsivity among different age bands. It is evident that impulsivity plays a crucial part in behavioral addiction but researches, in near future, should aim to clarify whether impulsivity only predicts behavioral addiction or the relationship between cell phone addiction and impulsivity can be explained more appropriately through vicious circle. Moreover, in-depth analysis can be done with respect to particular cell phone activities that are linked to addiction. Qualitative exploration would also be beneficial to understand the role of other personality and situational factors that are associated with behavioral addiction. With reference to clinical perspective, findings of this study would help clinicians to design behavioral (for motor impulsiveness) and cognitive interventions (for attentional impulsiveness and non-planning) to treat cell phone addiction, nomophobia (fear of not being in touch with mobile phone) and other behavioral addictions.

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