



# CELL PHONE ADDICTION IN CHILDREN AND ITS IMPACTS ON THEIR PSYCHOLOGY: A COGNITIVE ANALYSIS OF CHILDREN IN PAKISTAN

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**Abstract:** During last two decades, the adoption of mobile phones among the masses has become three-fold. As compared to other communication technologies, mobile phones or smartphones have been adopted by the masses in a huge number. Moreover, the smartphones serve as more than just a communication tool. The study explores the Psychological impact of mobile phone usage on the children and adolescents using the survey technique with the simple random sampling approach aimed at the 200 respondents from the commonality. The questionnaire was purported to investigate the parental opinions regarding the children's smartphone usage and to find out the Psychological, social, health check and the behavioral changes drawn from the mobile usage in children up to the age of 18 years. The study reveals useful information regarding all the issues the children are exposed to due to excessive mobile use

**Key Words:** Cell phone, Addiction, Children, communication, Psychology

## I. INTRODUCTION

The use of digital media and Technology has become pervasive during the last several decades. It wouldn't be wrong to term the use of cellular phones as an obsession. The inexpensive and widespread internet packages and now the Wi-Fi have truly changed the essence of using mobile phones. Today the mobile phone consumption is highly attributed to the other entertainment stuff like watching movies and playing high definition games rather than just communication purposes (Hussain, 2010). The cell phone's ubiquity hails several other factors that may cause a rift in the society. Since lately, the habit of mobile phone usage adopted by the children and adolescents has now become a global phenomenon. Not only in Pakistan but all over the world children and adolescents are often propitiated by advancing a smartphone playing a dancing lullaby or any interesting game.

Keeping in view the current trend of cell phone adoption in our daily life, Campbell (2005) termed the mobile phone from a technological tool to a social tool. Early on, during the 19th century, the fixated telephone was introduced to the world for the communication purposes of business dealings rather than social communication (Campbell, 2005). But ever since 1973 when Motorola became the first to produce a handheld cellular device, gradually until 2019 the use of mobile phone and then the smartphone has surpassed the number of landline phones with more than 5 billion users around the world eventually making the landline near to extinction. (Statista, 2019)

The rate at which youngsters have embraced the habit of using a cell phone in numerous counties of the world is significantly amazing. As a matter of fact, the cell phone had existed 10 years earlier than the youngsters truly received this innovation. The decrease in the expense of the handsets, their smaller size and the presentation of the prepaid telephone card in the 1990s added to the shockingly quick reception rate by the teenagers around the world. The companies like Nokia, Siemens, Motorola, Sony Ericsson (now Sony Mobiles) are the reputable and popular mobile phone brands (MACRO, 2004). Different studies worldwide has discovered a soaring trend of cell phone use among youngsters. In Norway in 1999, 80% of 13 to 20-year-olds claimed to keep a personal a cell phone, while in the United Kingdom in 2001, 90% of youngsters younger than 16 owned their mobile. The 70% of children from nine to ten years of age owned their personal cell phone in Italy during 2013, while the remaining 30% expressed their longevity for their personal handset (Guardian, 2013). The personal cell phone possessing rate in Tokyo among the youngsters has appeared to be 100% (Srivastava, 2005). In Australia a study found that 50,000 kids somewhere in the range of 5 and 9 years old had a personal cell phone, 33% of kids belonging

to the age group of 10 to 13 years and 45% of 13 to 15 years additionally possessed the smartphone in 2004 (Allison, 2004). Moreover, as of late, a majority of young people having a personalized cell phone have risen so significantly that as compared to the parents, their kids are highly likely to possess a cell phone (Campbell, 2005).

Then came the Android smartphone with secure, up to date and easy to use user interface appealing people's maximum attention. The advanced mobile phones, being another innovation of humankind, turned into an inborn piece of human's life. The advanced cell consolidates diverse, complex functions. The things which we never thought would be available in a cell phone are available at present. On the Android smartphone now you can read emails, write word documents, check and reply emails, play all sorts of videos and play all sorts of games, take pictures, make high definition videos and surf internet. In most of the cases, the mobile phone or a smartphone signifies as a status symbol in society. After the arrival of the Android user interface, the smartphones have become unlimited entertainment. There are several other advantages of smartphones including the transfer of data or the lecture notes in the form of pictures and audio recorded by the phone. Cell phone even accompanies an exceptional application for children to expand their conceptualizing which is really great. All in all, smartphones have turned into the most rapidly spread innovation in the history of our planet. (Hardell, 2017)

Apart from the positive side and the benefits of a smartphone, it also possesses some health hazards, lets now talk about its harmful effects. The side effects of smart phone usage on children have been medically proven. Moreover, the smartphones emit plenty of electromagnetic waves, Various research studies have been directed in the previous years to distinguish the impact of electromagnetic waves produced from mobile phones on human wellbeing. Kids have delicate heads and more slender skull bone than grownups. Their tissues in the brain have additionally higher conductivity, and these conditions give higher ingestion from RF radiation (Radio frequency (RF) electromagnetic radiation (EMR) is the transfer of energy by radio waves) in grownups. The nurturing mind is progressively delicate to a radioactive and poisonous substance, and it is in a developing state until around 20 years old. The more noteworthy retention of RF waves per unit of time, the more immersion of their minds, in the long term, the higher will be a hazard of a growing tumor in the children's brains. (Hardell, 2017)

Youngsters are dependent on cell phones. Although with their school supplies on board, numerous children they go to their school with their cell phones. They chat on the telephone amid the extra time and send messages amid their class lectures. Consequently, they miss the exercise in class and remain behind among other class fellows. (Arshi, 2019)The objectives that cover the stirring issues are as follows.

The objectives that cover the stirring issues are as follows.

- 1-To find out do the children own mobile phone before 18 years of age?
- 2-To find out how a mobile phone does affect the habits and the psychological behavior of a child or an individual.
- 3-To know what parents think about mobile usage and ownership of a child.

## II. LITERATURE REVIEW

The mobile phone in Pakistan was introduced during 1992 when unlike contemporary call and SMS packages, making calls to mobiles would charge both incoming and outgoing calls. Now in the present time, the use of the mobile phone has been ungraded many folds. It has increased to such an extent that the landline phones are now seldom seen. Along with the facility of making calls and texting messages to the distant people, other features like radio, audio, music, recording videos, surfing the internet and playing games have attracted the masses and this led to the increase in the sale of mobile phones.

The effect of the cell phone usage in the school has not been as generally pondered upon and is one which can possibly cause numerous issues later on. Campbell (2005) suggested that the cell phone has played a vital role in connecting people. It additionally affects the developing intimacy inside the family, particularly by the connective power that the cell phone provides the youngsters with respect to security and the issues of wellbeing. The schools and other technical institutes, Schools and instructive settings report that understudy's cell phone use disturbs the learning process and diminishes the focus in class, bringing about negative academic results. (Campbell, 2005).

Another study was proposed to look into the impact of usage of cellular phones on the psychosocial development of students. As the habit of adopting smartphone keeps on developing, socialists must know about current patterns, have the knowledge about the particular dialect and use the factors that can change the lives of our childhood in all harmful and harmless aspects. Including the manner in which they act, cooperate with others, and comprehend the world. This data has noteworthy significance for future work. (Tunio& Soomro, 2009).

The children asserted that owning a mobile has now become a necessity. This isn't astonishing as the more youngsters are born in the era of vast technology, surely they will normally be highly receptive to any innovation. Youngsters today do not take the mobile phone as an instrument of communication but also as an approach to convey what needs be. Moreover, owning a cell phone now days has become a status symbol. The more expensive mobile one has got a more stylish and rich he will be deemed. (Okabe, 2004).

In his study, Van Dan Bulc (2003) pointed out that forming a habit of using a mobile phone can consequently disrupt the sleep routine. The text messaging on cell phone engages a distressing factor when the people do not get the replies of the ones whom they have messaged. Youngsters feel on edge when they are not getting answers from their companions, thus resulting in irritation and the individual stays up late at night. The dearth of rest and sleep causes adverse effects and is damaging the psychological health of the person.

Another study sheds light on the use of mobile in different aspects of society. The article explained the issues of mobile users like protection and talking in broad daylight. Moreover, the trend of publicizing efforts to draw adolescent young ladies into purchasing a specific cell phone brand is also included. This focused on components, for example, discovering one's feeling of being one of a kind, personality, and autonomy. The rate of cyber crimes sadly expanded since the initiation of cellular phones. The range of this sort of intimidation ought to be intently checked by the guardians and the responsible persons of the family of these youngsters. This is particularly imperative because of the likelihood that it can venture into homes and into the rooms of the youngsters. (Cilliers& Parker, 2011)

A similar kind of study by Lever and Katz (2007) indicated a comparative investigation of cell phone usage among the general public. The investigation was done in a large number of grounds, libraries at colleges and universities over the United States. The library is, for the most part, observed as a quiet and calm place. So normally, a noise produced by using a mobile phone can evoke irritation and disturbance. There has been a particular rise in utilization and a huge requirement for social change to oblige this. Because of exposure to such an expansion, libraries have instated the guidelines to attempt and check or limit this cell phone utilization.

Mobile phone usage casts significant effects on society in several facets. It affects the people's style and opportunities selection for communication and spending life. A psychological study in the United Kingdom suggests that the issues of social health, cognitive health, physical health, and mental health are associated with the heavy usage of mobile phones by teenagers. The body and brain of the youngsters till 20 years are undergoing the process of development so the RF rays emitting from the cell phone can result in harmful effects on their developing brain and heart. The research study further suggests that it is necessary for the people to remain fully cognizant of the health issues led by their regular habit of using a mobile/smartphone. The government of UK has started issuing a health caution concerning the vulnerabilities about the long term side effects of the regular use of smartphones. (Fowler & Noyes, 2017)

### III. THEORETICAL FRAMEWORK

The present study has adopted the theoretical framework of Vygotsky's (1978) socio-cognitive theory. The theory postulates about the thinking patterns and perceptions of the children. The children construct the perception and their knowledge development takes place as per their personal interactions. Vygotsky stressed to the point of cognitive development of the children through their social interaction. (Bunyakarte, 2010).

The second theory for empirical research is Piaget's (1936) theory of cognitive development. The theory contends that all humans in the world enhance their knowledge as a result of their experiences and their ideas. (McLeod, 2018). The three hypotheses have been invented for the study

H1 Children have their own mobile phone before the age of 18

H2 Mobile phone usage effects on children's psychological behavior

H3 Parents allow their children to own their personal cellphone after the age of 18.

### IV. METHODOLOGY

The survey conducted as part of this research was aimed at the parents of the children and Adolescents up to 18 years of age. The survey was completed by distributing the questionnaires among the sample of 200 people in Karachi. The survey technique has proceeded with the help of the random sampling approach of the families having the child's age ranging from a toddler to the 18 years.

## V. FINDINGS

The hypothesis of the study were tested by the Chi-square method. The results are presented with the help of the contingency tables and the chi square tests run on SPSS. To find out do the children keep the mobile phone in their teenage life

- HA - Children have their own mobile phone before the age of 18
- Ho- children don't own a cell phone before the age of 18

Table 1: Results of Hypothesis 1

<b>what is your age? * Does your children own their personal mobile set Crosstabulation</b>				
Count				
		Do your children own their personal mobile set		Total
		yes	No	
what is your age?	1 to 3 years	36	3	39
	4 to 6years	32	1	33
	8 to 10 years	27	4	31
	14 to 18 years	42	1	46
Total		137	12	149

Table 2: Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.122 <sup>a</sup>	4	.538

Assessing the results with the method of Chi-Square Test, we opted for a chi square test over here because we have nominal variables, as a result of Chi-Square the discovered value of significance i.e. P value turned out to be .536 which is greater than 0.05. Hence, the null hypothesis is retained that states the children don't own a cell phone before the age of 18.

HA : A mobile phone does affect the habits and the psychological behavior of an individual.

Ho: A mobile phone does not affect the habits and the psychological behavior of an individual.

Table 3: Results of Hypothesis 2

<b>What are the behavioral changes adopted by children due to heavy mobile usage? * Generally due to heavy mobile usage your children avoid chit chat with other family members or guests Cross tabulation</b>				
Count				
		Generally do you to heavy mobile usage your children avoid chit chat with other family members or guests		Total
		yes	No	
What are the behavioral changes adopted by children due to heavy mobile usage?	they are getting stubborn	52	23	75
	children do not take interest in any other activities	46	15	61

	No change	11	2	13
Total		109	40	149
	Value	df	Asymptotic Significance (2-sided)	
Pearson Chi-Square	1.716 <sup>a</sup>	3	.633	

To evaluate the results of the chi square test to gauge the effect of a mobile phone on an individual, the Table 2 says that as per the law, the significance value of P is .633 which happens to be greater than .05. This indicates that our null hypothesis is retained proving that a mobile phone does not affect the habits and the psychological behavior of an individual

HA: Parents allow their children to own their personal cellphone after the age of 18.

Ho: Parents do not allow their children to own their personal cellphone after the age of 18.

Table 4: Results of Hypothesis 3

<b>Do you think that today people use mobile phone more as an entertainment tool * According to you, in which age children should own a cell phone Crosstabulation</b>							
Count		According to you in which age children should own a cell phone					Total
		12 years	15 years	18 years	22	33	
Do you think that today people use mobile phone more as an entertainment tool?	yes	15	30	89	1	1	136
	no	1	3	6	1	1	12
Total		16	33	95	2	2	148

Table 5: Chi-Square Test

<b>Chi-Square Tests</b>			
	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	9.948 <sup>a</sup>	4	.041

## VI. DISCUSSION

Another chi-square test was conducted to compute significance of mobile usage impact on children that whether or not the parents allow their children to keep a personal set before the age of 18. The results of the chi square test suggest that according to the rule, the alpha P value is 0.041 eventually less than 0.05 suggesting that Parents allow their children to own their personal cellphone after the age of 18. Hence the alternative hypothesis is accepted.

### 6.1. Demographic findings

A total of 200 respondents attempted the questionnaire, each one having a child at home with the age ranging from a toddler to the 18 years old. The 90% majority of the respondents' children used mobile phones ensuring the maximum response rate. Out of 200 respondents, 60% of the children were aged up to 10 years while the children ranging from 11 to 18 years old were 40%. The 60% mobile usage rate among children turns out to be 1 to 2 hours majorly while the other 31% and 9 % children spend their day three to five and five to seven hours on mobile respectively.

The paper digs out the facts covering the objectives of how a mobile usage among children and adolescents affects their habits, their most favorite feature in a mobile phone and parents' opinion about their children's mobile usage and its ownership. The results followed by the discussion are presented as follows:

### 6.2. Effects of a mobile phone on the habits of a child

Concerning the heightened smartphone usage among children and adolescents, its deep effects on several aspects of children's lives and habits are evident. The smartphone's increasing usefulness and

inexpensiveness has made it irrefutable among youngsters. The present study shells the effects of smartphone usage on different habits of children.

On one side of the spectrum, the study reveals that the social competence of a child is highly affected by high or low mobile phone consumption. According to the 60% of all respondents, their children use a mobile phone in their leisure time by surfing the web, playing the game online, watching cartoons and reading stories, etc. while the other 40% prefer to play outdoor games, watch Television and read the storybooks.

On the other side of the spectrum, in an attempt to find out the reason for which the parents let their children use a mobile, even if it's not their personal, before the age of ten. According to 55% of the respondents, they let the kid use mobile phone just to propitiate him and bring him back in a good mood. The 30% of the respondents asserted that they need to give a smartphone to their child so that he will be raptured in the mobile videos and not make a fuss out of eating the meal, otherwise it is impossible for the parent to feed the baby. The remaining 10% of the respondents argued that they have to handle several household chores at a time and many times the children's continuous rants become unbearable, for this reason, they handover the mobile set to them to quiet them up.

The increasing incidents of kidnapping and child abuse have compelled the 95% of the parents now prefer their children to stay indoors and play indoor games. In the majority of instances, the study uncovers the fact that the exuberant mobile usage has led the youth into social segregation. Today in Karachi the 91% of children avoid social activities and avoid mingling with relatives due to greater interest in smartphone activities. These results are parallel to Cilliers and Parker (2008) research on the social impact of mobile phone usage on teenagers. The study concluded that teenagers are highly engrossed in the mobile phone activity elevating social separatism. The parental and guardian concerns are on point about the moral infringement of their children due to their exposure to morally explicit and inappropriate material.

93% of the majority votes that the mobile phone usage cast adverse effects on the study patterns of the children. Moreover, when the parents object and imposed restraints on using mobile phone excessively then the parents have to face the unbearable brawls compelling them to go lenient on their children. The study also finds out that increasing smartphone usage has also caused some behavioral changes among the children. The extravagant use of a smartphone since childhood is causing obstinate behavior, low tolerance and reportedly the majority of the children have lost interest in almost every other activity except for the mobile phone.

### **6.3. The most appealed thing in a mobile**

Today the cellular phones have become a whole lot of a mini laptop on the account of possessing all the features and functions of an operating system in a laptop. The study finds out that 90% of the instances endorsed the opinion about the usage of smartphones as more of an entertainment tool rather than as of a communication tool. The android phones have provided users with the interactive and entertaining interface allowing them to access the internet, consequently play and watch several games and videos. The findings of this study reveal that the majority of 61% instances the children love to play games on their mobile sets while in a lesser majority of 55% instances the children like to watch cartoons on YouTube. The 35% of the respondents aged between 10 to 18 years voted to have a cell phone to enjoy by making fun videos and sometimes upload it on different social media applications like Tiktok, Facebook and WhatsApp. This link to Dr. Suryanarayana's (2015) findings of the novelty of smartphones as the features we thought are impossible to be available on a mobile phone are now easily accessible. Moreover, a few respondents argued that they find good books and stories that they find it easy to read on their smartphone.

### **6.4. The parental opinion of mobile usage and its ownership**

The sight of children carrying and using a smartphone is a kind of usual thing now a day. Putting this forward one needs to find out what do parents think about the kids using smartphones at such a tender age. The survey results show that about 63% children own a personal mobile but the majority is between the age ranging from 15 to 18 years while the other 36% did not have a personal smartphone set but they use their parents' mobile for entertainment and enjoyment. The age range is from a toddler to 14 years.

After inquiring about when should a child start using and own a mobile the 60% of the majority voted for a child to be 18 years when he should be allowed to own a personal smartphone. On the other hand, the lower majority of 28% and 10% agreed for a child to be fifteen and twelve years old respectively to start using and own a mobile set. Only a single respondent commented that they will allow the children to own a mobile-only after their marriage. Focusing on another study area, 90% of the parents opined about how the increasing smartphone usage has vitiated the children raising the social and health incompetency. This coincides with the study of Daramola (2015) explaining the results observed after the children were

highly indulged in smartphone usage activity. Moreover, the study also proves that constant monitoring of a child while using his cell phone is becoming an impossible task no matter how vigilant a parent is. Nikken (2017) clearly stressed in his research study about the implications of the low or high media usage among children that the children of low educated and low-income families have higher media exposure as compared to the highly qualified and high-income families. The presented study suggested approximately the same results as the majority 65% people agreed to the research note that the children of educated and high living standards keep minimum mobile usage before 18 years while the children of lower financial status and low or uneducated parents spend more of their time on smartphones. 88% of parents think that excessive mobile use is causing a burden on the eyes and kids' eyesight is getting weak while the other 12 % parents think that the too much indulgence in smartphones is causing weaker brains. When the respondents have sought the opinion about the relationships and mobile use, the 96% think that the excessive use of mobile phone led communication gap between children and parents. Waqar (2011) came with the results parallel to the present study's findings. The study concluded that cell phones are causing effects on interpersonal communication among teenagers and their family. Other research in Dhaka city concluded that parent-children communication is highly influenced by the western culture introduced by the excessive mobile use by both parents and the children. (4597, 2014)

## VII. CONCLUSION

In this paper, the researcher has provided a brief overview of the use and Psychological effects of a mobile/smartphone among the children from the toddlers to the teenagers. Among the different facets of society today the extravagant use of mobile/smartphone is evident. The data attained from the respondents extends a basic knowledge about smartphone usage and its troubles. On one side of the spectrum, the study concludes that the increasing disposition of the children and teenagers towards the mobile/smartphone implicates more psychological hazards than the benefits. The excessive mobile usage can pose social, Psychological and health hazards, ebbing social cohesion, obstinate behavior, immobility and decline in other activities except spending time with the smartphone. On the other side, the present study elaborated on the gains that the smartphone has to offer. Although the benefits lie low in number they do exist. Children are easily beguiled and placated by the sight of a mobile screen when they come across an unpleasant situation, the fact indicates the psychological response of a kid towards the smartphone. Hence, in such a case, the smartphone is used as a pacifier. Today a mobile phone more than just a communication tool, it's a clock, a dictionary, a book, a computer, an interactive guide, a planner and a tutor. The teenagers read the different kinds of stories online on their cell phone while many of them work on their homework by using their smartphone. Moreover, a mobile phone serves as a preschool tutor to the toddlers.

## VIII. RECOMMENDATIONS

- According to the health point of view possessing a cell phone before 16 years of age could be hazardous to health as the body of an individual is weak to endure the radioactive ray emission.
- Children should use a head-set or hands-free while talking on a call.
- Experts do not approve of using a cell phone when the signals are weak.
- Limit the use of cell phone around children.
- The mobile set should not be at the bedside table of children's room at night.

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