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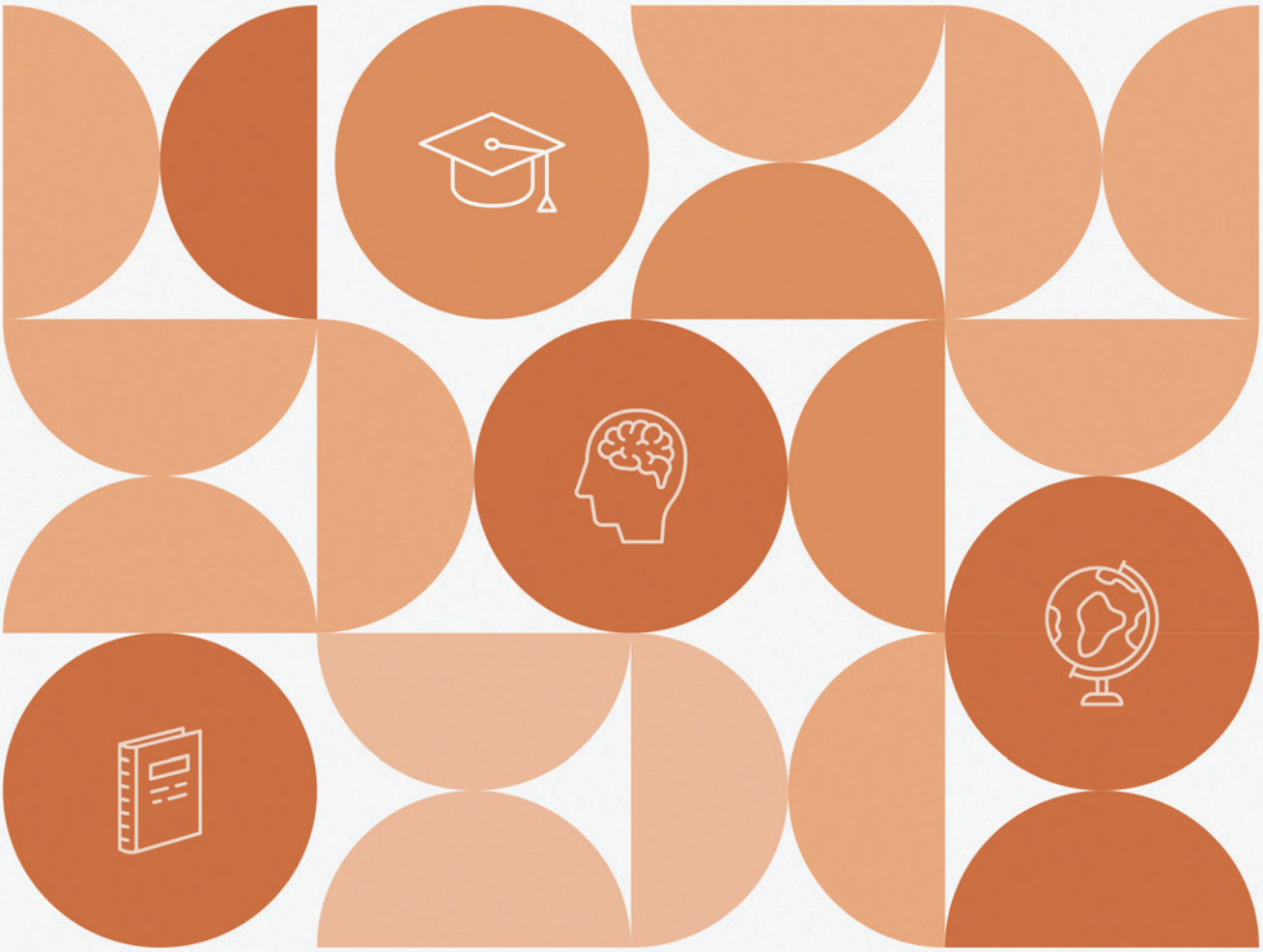
Technology Overuse Amongst Adolescents in Qatar – Preliminary Report



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EXECUTIVE SUMMARY

Excessive technology usage, called informally as Digital Addiction, is on the rise whether for legitimate reasons or due to a problematic experience. Adolescents excessive technology use is claimed to impact their health, education and family relationship. However, the majority of research took an adult perspective to the issue while the perspective of adolescents themselves was not a focus. We hypothesize that the problem is bilateral where parenting style and parents' technology usage may impact their kids' behavior in relation to technology use. We also question the type of arguments used by parents when trying to handle the issue in their adolescent kids to whether it is substantiated with facts, persuasive and convincing or being emotive and coercive. We also revisit the relation between excessive internet use on one hand and adolescents' health, education and family relationships on the other. the reasons for revisiting that relationship is due to the cultural impact including family structure and living styles and environment and also due to the new changes COVID 19 has imposed on all such as the increased reliance on technology for work and education. With the scarcity of validated and specialized approaches to combat the issue, whether in prevention, harm minimization or treatment, we also study the services provided to families, their content, public attitude to them and evidence of success. This project focuses on the population of Qatar to answer these questions.

In this interim report, we provide initial findings of this project related to the parents' views of the issues. We report on the preliminary analysis of a series of interviews we have conducted with parents in Qatar about their adolescents' technology usage. We then report on the descriptive analysis of a survey that we disseminated amongst parents in Qatar about the issue.

The results showed that the issue is widespread, and most families needed help in dealing with it. Approaches used by parents to combat the problem are yet basic and mainly based on limiting time, taking off devices and distracting kids with alternative activities. Most families frequently have serious arguments with their adolescent kids about their excessive technology usage. At the same time, a considerable part of the parents who completed the survey exhibit themselves symptoms of problematic internet usage and this positively correlated with their kids score in the same behavior, i.e. the higher the behavior in parents, the higher it is in their kids. There does not seem to be awareness of available services to deal with the issue in the country despite the need for help.

INTRODUCTION

CHAPTER ONE

Technology is increasingly becoming an integral part of our lives and people around the world use digital technologies for various purposes on a daily basis. In some cases, people use digital technologies excessively to the extent that it might affect their health, education, or relationships within their family and with others. The wealth of information technology and online connectivity are prominent characteristics of the quality of life, but their addictive use may result in a less sustainable and connected society. These factors affect the family and its members leading to disengagement, isolation, and distortion within the family affecting family relationships and sustainability.

Use of digital technologies in education has revolutionized teaching and learning over the past two decades. Schools and teachers are increasingly relying on digital technologies for providing quality education both in-person and remotely. This is not limited to teaching and learning only, but it includes testing, assessment and student information management as well. The number of technological products, solutions and companies offering these solutions is at an all-time high. At the same time, students are becoming more adept at using technology for learning and skill development. Clearly, use of technology has shown a direct impact on student learning outcomes and their academic performance.

However, this comes at a cost when technology is used excessively. In some cases, students use digital technologies excessively to the extent that it might affect their health, education, or relationships within their family and with others. Students are becoming so attached to their technological devices that they use them for purposes other than learning. Gaming, chatting, and viewing content are only a few examples of what students do when they use their devices uncontrollably. In this case, use of technology turns into a distraction to learning rather than an enabler of it. The end result is a lower academic performance, poorer learning outcomes, and a host of health, social and behavioral complications in students' lives.

As children grow, the capacity of digitalization to shape their life experiences grows with them, offering seemingly limitless opportunities to learn and to socialize; to be counted and to be heard; to express themselves; and access information and valuable support networks (Unicef. (2017; Unicef, 2019), etc. Although digital platforms can provide a space for a variety of information and knowledge; new ways of learning and searching for information; self-directed learning; flexible learning; use of artificial intelligence and virtual and augmented reality; a wider social network, and entertainment, concerns have been raised about the adverse effects of excessive use of digital technology on children development and health (OECD, 2018).

Digital technology and interactivity pose significant risks to children's safety, privacy, physical and mental health development and their overall well-being, magnifying threats, and harms that many children already face offline and making already vulnerable children even more vulnerable (OECD, 2018). The use of technology has been found in the literature to be associated with changes that are both transient, such as changes in mood or arousal, as well as longer-term effects in the brain or behavior (Gottschalk, 2019). Furthermore, overuse of digital technology more generally might be linked to poorer outcomes in children and adolescents including physical, behavioral, attentional and psychological issues (Rosen, L. et al., 2014). There is growing evidence that children and adolescents who overuse and/or are addicted to digital technology can experience a host of mental health problems such as anxiety, depression, anger, loneliness, and other mental disorders. Online bullying and the effect of children 5 and young people accessing inappropriate websites may promote eating disorders, self-harm, suicide, or other harmful behaviors (Blum-Ross, & Livingstone, 2016; OECD, 2018). Excessive involvement in online gaming can also result in harm including gaming disorder, included recently within the International Classification of Diseases by World Health Organization. Children can also be exposed to pornography, too much information

with little guidance, and physical problems such as backache, headaches, weight gain or loss, disturbances in sleep, Carpal tunnel syndrome, and blurred or strained vision, etc (Gottschalk, 2019; Blum-Ross, & Livingstone, 2016).

The Center of Health Protection of the Department of Health (CHPDH) has summarized the negative effects of overuse of digital technologies on the health and development of adolescents from physical aspects, such as obesity, decreased physical fitness, visual disturbances, musculoskeletal problems, lack of sleep, injuries and accidents or in psychological terms such as increasing feelings of loneliness, depression, decreasing self-sufficiency, and other mental health problems (The Center of Health Protection of the Department of Health, 2015). Therefore, as Katz and Rice (2002) stated, "digital technology seems another double-edge weapon that has intense positive and negative consequences."

Over the past three decades families have faced struggles and challenges. These struggles and changes in the society affect the family system. The past decades have shown a rapid increase in technology in the forms of smartphones, ipads and computers to be used as a communication method which later developed social media platforms and applications for entertainment and other purposes bringing families closer and more connected. Technology has affected families positively by making parents and children communicate easily on a day to day basis in all issues related to activities, education, entertainment, travelling etc. It brought families closer to each other and more accessible than before. Despite these positive impacts there are also negative side for the use of technology. The use of technology has led to less interaction between parents and children, less quality of time spent together, children need to interact face to face and this is decreasing with the use of technology. All these changes have an impact on the family members leading to addictive behaviors that because of the excessive use of technology there is an impact on family relationships and making the parenting process more challenging.

The literature has mainly studied the issue of Digital Addiction in adolescents from adults' perspective. We still lack research that gathered the perspective of adolescents themselves on the issue and whether they necessarily agree with what parents, educations, counsellors and health professional think of certain problematic patterns of digital usage in terms of symptoms, consequences and countermeasures. Moreover, the literature has not looked at the argumentation process between adolescent kids and their parents in terms of the nature, whether persuasive or inquiring, or even the construct, e.g. in terms of the common rounds and conflicts. We also note that Digital Addiction and problematic technology usage may be infectious and transferrable in the sense that parents may transfer that behavior to their kids and not play a role model. Hence, we also look at whether the problem in parents interprets the existence of the problem in their adolescent kids. The research on the relation between Digital Addiction and health and education and family relationship was rarely studied in the region and Arab population. Given the cultural impact, e.g., in family relationship and cohesion as well as the new reality that COVID 19 has imposed necessitating more online time, we revisit that relation in this research. Finally, our research in Cemiloglu et al (2021) showed that only a handful of empirically evaluated approaches to combat digital addiction exist and most of them are based on short lived studies and self-report. Hence, we wanted also to investigate the counselling and prevention tools used by healthcare providers and education institutes in Qatar and whether an evidence of their impact is being collected.

CHAPTER TWO

Technology has dramatically changed our lives and most people around the world currently use technology for various purposes including, but not limited to, learning, entertainment, business, communications, among others. The fast pace of technological advancement and the increasing access to modern technology around the world has shaped our lives in an unprecedented way (UNICEF, 2011). Everyone with access to technology has an opportunity to explore the world and communicate with others via a small device connected wirelessly to the internet.

The extent to which we use digital technologies varies according to our needs, equipment, connectivity, and other factors. However, it is clear that adolescents have the lion's share when it comes to use of the various technological tools. They are now growing up in an interconnected world where cellphones, internet, games, etc. are part of their daily lives and they use these tools and media in expected and unexpected ways (Dehmler, 2009). In this section, we review the literature and investigate between technology use and excessive use and adolescents' development and life in terms of their education, health and family relationships.

2.1 Technology and Education

Technology Role in Education: The Need for a Revision

Technology has been a great enabler in various aspects of education, especially for personalized learning, improving students' digital skills and saving teacher time. This is evidenced by several studies which have shown significant improvements in student outcomes through personalized blended learning (Pane et al., 2017). Computers, tablets, iPads, other technology devices, e-mails and the Internet are now integral tools in the classroom and have changed teaching and learning significantly. Moving towards technology-enhanced learning has encouraged students, who are tech-savvy already, to become more enthused with subjects where technology is used in teaching (Alhumaid, 2019). In the meantime, teachers now feel the urge to use technology as much as possible to enhance student engagement, motivation and learning outcomes.

During the COVID-19 pandemic most schools shifted to remote learning on a very short notice, and education technology has become critical for the continuation of learning around the world (Bryant et al, 2020). Many education systems and countries had to utilise technology, in many cases without proper planning or training, to address the challenges created by lockdowns and other health restrictions. Using texting apps, TV programs, virtual learning environments, and teleconferencing platforms are but some examples of technologies used to provide remote learning opportunities for the students. However, the impact of this shift on student learning outcomes is yet to be assessed (Alfadala et al, 2020).

Digital technologies have altered the way adolescents interact, socialize and learn, and that raises a new set of issues that need to be considered by educators, parents, and policy makers. For these stakeholder groups, the question is how the excessive use of these technologies affect the academic performance of these adolescents. Although technology can be useful for learning, using it excessively throughout the day can have a negative impact on adolescents' educational attainment (Simuforosa, 2013).

The impact of technology use on daytime function

Adolescents and young adults tend to use digital technologies throughout the day until they go to bed. This is usually exacerbated by late bedtime and having to wake up early for school, college or work. Consequently, many of them do not get adequate sleep and wake up unrefreshed (Johansson et al., 2016). This might negatively affect their attention, motivation and academic performance in school or college and could result in lower educational attainment.

Owusu-Marfo (2017) argues that studies should be conducted to understand the effects of smart mobile devices on insomnia and its impact on student academic performance in high schools and tertiary education.

The impact of using technology in schools

The value technology brings to education in schools and the classroom is undeniable. However, even when technology is used in teaching and learning, there are also concerns about its excessive use. Alhumaid (2019) argues that technology could change education negatively through "*… deteriorating students' competences of reading and writing, dehumanizing educational environments, distorting social interactions between teachers and students and isolating individuals when using technology" (p. 10).*

Using Technology in the Classroom

Many studies have supported the idea that integrating technology into classroom results in meaningful learning and promotes innovative practices (Hillman, 2014). However, we should keep in mind that when we introduce technological application into the classroom, it should suit both the instructor and the student (D'Anelgo, 2018). Generally speaking, instructors and educators have positive attitudes towards the implementation of technology into the classroom, arguing that "they are provided with appropriate training on professional digital competencies, they can use technological tools in the classroom to enhance the learning process for students" (Kirkscey, 2012). When looking at the perspectives of the students, numerous studies have suggested that students show positive attitudes and high levels of satisfaction with the use of technology in education which allows them to engage interactively in their learning (Miller et al. 2012). Some of the features that make technology attractive to students include flexibility, accessibility, easy-to-use and overall engagement. Moreover, students believe that technology helps them with understanding the course content more, contributes to higher academic achievement and prepares them with future jobs that require the use of technology (Schindler et al. 2017). One of the negative effects of using technology from the teachers' side is that they need more staff and student training on these devices. They claimed that not all students know where to go and what to do with these devices and teachers should help them set up the devices which can take time from class and delay the teaching time (Carstens et al., 2021).

The impact of technology on student engagement

Several studies have suggested that overall student engagement and learning is enhanced by the implementation of technology (Mo, 2011). D'Anelgo (2018) argued that technology engages students behaviorally, through participating in learning activities; emotionally, through impacting the attitudes of students towards learning; and cognitively through the mental investment. Therefore, technology enables students to engage more with the instructor and with other peers. One the negative sides, some teachers mentioned that students can be easily distracted by the devices they are using, and can do, random searches during work time which therefore increase the distraction and dishonesty in students (Carstens et al. 2021). Finally, a study by (Banitt et al., 2013) confirmed that student engagement is increased when using technology. Increased engagement should result in improved attitudes and motivation in the classroom, which will eventually improve student achievement. They suggested that future research should look at whether certain technologies are more effective or engaging that others.

Actual effect of technology use on children's and adults' education and success

The emergence of new technology has changed the way things are done, including the work in schools and universities and the teaching and learning process which will all affect students' education and achievement (Juan et al., 2016). In their study, they used a randomized sample of 4,697 of people and categorized them into two groups: The ones who use the internet for academic activities and the ones who use it for their entertainment. The findings of study showed that people who "perform interactive

activities with peers and teachers or use in a balanced way the different internet tools tend to have more academic success than those who only seeks information" (Juan et al. 2016). For using the internet on entertainment, there was also positive impact on the students' academic achievement. They explained that students who download audio, video, or any form of entertainment programs, are more likely to succeed in their academic achievement (Juan et al. 2016). Another study that I have came across focused on the heavy usage of internet and its influence on university students' academic success. They defined heavy usage as when the student uses the internet for more than 3 hours a day (Jehopio et al. 2017). Also, they refer to the internet as a general term which can also include software applications and social networking sites such as Twitter, Facebook etc. (Jehopio et al. 2017). The study found out that students who spend more time using the internet for education and learning purposes are more likely to achieve higher academic scores compared to light or average users. Overall, both studies found out that high usage of the internet is correlated with high academic attainment. (Schindler et al. 2017) argues that "Incorporating the use of several technological applications allow students to participate in higher-order thinking, enhance communication, engage in collaborative problem-solving activities and discussions. Many studies have supported this notion and claimed that students who have learned academic content in technology outperformed those who learned the content without technology (Carle et al. 2009).

Parents' perceptions of the effect of technology on children's education

The use of new digital technologies by children have been a widely discussed topic for such a long period, and many people are concerned with the effect of this use in many aspects such as health, education, and family relation. Of course, parents have a vital role in this, and it has affected them on the way they raise their children or their parenting practices. In this paper, we will focus on the effect of technology on children's education, if exist. According to a national survey that was conducted by Northwestern University on parenting in the age of digital technologies, they confirmed that there was a relationship between the use of technology and children's education. However, they also stated that "Parents are less likely to turn to media or technology as an educational tool for their children". Meaning that they would rather point their children towards a book to learn, but not towards any type of digital technologies. The same survey also asked parent about the effect of these technologies on children's academic skills and the majority of parents reported positive effect. For instance, 60% of parents reported that computer has a positive impact on developing the child's reading skills, while 53% thought that it has a positive effect on their math skills. The TV also has a good impact on their speaking skills with 57% stated mainly positive. Moreover, most of parents agreed that mobile platforms such as smartphones and tablets have a positive influence on children's education and with developing their academic skills. Overall, parents' perception of the effect of new digital technologies are more likely to be positive than negative. Another study that was conducted by the Ministry of Transport and Communication on the use of technology by youth in Qatar found divergence in parents' perspective on the effect of technology. According to this study, 75% of non-Qatari parents associate the use of technology with better academic achievement, while the other think of it as a negative aspect for their children's' learning. Interestingly, most of parents whether Qatari or non-Qatari are more concerned with the internet use impacts on the children's ability to focus on their studies. This can include the use of internet in the nighttime (Defined from 10 PM to midnight) with 58% Qatari and 47% non-Qatari children reported that they use the internet at the nighttime, which subsequently can affect their sleep and their focus in class in the next morning. From this paper, we can find out that there have been some differences between parents' perception of whether the use of new technology is associated with better educational outcomes or not. Moreover, we can extract more interesting topics such as students' ability to focus on their studies and the difference between each gender and their use of technology. Generally speaking, parents' perception differs whether positively or negatively on the effect of technology on education.

2.2 Technology and Family Life

Parenting and digital technology

The excessive use of internet has been enormous the past three decades. It is an integral part for everyone in the family and in particular for the children and adolescents. Children and adolescents tend to spend more time on the internet, and this is a disturbing issue for the parents. Parental control methods and information for parents is needed and be alert in how this technology can be of positive use for these children (Darmola, 2015). Studies have shown that with the massive use of technologies in family household, this has affected how parents and children work and play. (Livingstone, Haddon, Görzig, & Ólafsson, 2011; Takeuchi, 2011 cited in Nikken and de Haan 2015)

It has been studied that with the use of technology, parenting has become a complicated process leaving parents in a situation of how to prevent, mitigate the risks of the internet on the overall development of their children. Parenting as it has been defined is a full-time job in the family life cycle. It is a belief system which includes caring, nurturing, supporting, loving, socializing of children. It is the responsibility of the parents to actively meet the needs of children (İnan-Kaya et al, 2018). But studies have shown that child rearing these days is becoming more complicated since the digital media has been introduced. Parents are in a dilemma as to whether encourage their children to use digital media for education and try to minimize the risks of the negative effects on them (Livingstone and Helsper, 2008).

Studies have been written globally on the role of parents, children and the family and it impact on digital addiction or internet addiction (Faidah et al 2018, Kabakci et al 2008, Daramola 2015, Beyens et al, 2017; Wu et al 2016; Livingstone et al 2015; Knitter et al 2020; Huang 2021). Among these studies is the importance of how parenting styles have an impact on children and adolescents use of the digital media or the internet. The role of parents in the family is important in preventing adolescents and children in taking part in problematic behavior. Parents are concerned about the use of their children to the internet but how they manage these behaviors depend on their norms and practices of parenting. Studies have shown that there are four main types of parenting: authoritative parenting, in this style parents are both more responsive and demanding than average (Livingstone et al 2015); authoritarian parenting, characterized by high control but low warmth. In this style, parent tend to give strict rules to the children and if fail they will receive severe punishment. The result of this style is that the child may be aggressive (Faidah et al 2018, Livingstone et al 2015); permissive parenting, which is warm and supportive but non demanding; in this approach children are allowed to act in accordance with what they want without control. The result of this approach is that the child may become selfish. The democratic or laissez-faire style refers to the combination of authoritarian and permissive parenting approach. Children in this approach have limited freedom and parent communicate with children and have mutual understanding. It is noted that this is an ideal approach as it uses explanations and discussions to help the child understand and how to act (Faidah et al 2018, livingstone et al 2015).

Thus, depending on the above parenting styles, research has revealed that "teenagers with positive parenting experience a lower prevalence of digital addiction than those with permissive parenting and authoritarian styles" (Faidah et al 2015, p 274). Studies also showed that when you have a positive relationship with your children this will lead to a decreased internet usage and addiction by the children (Deng et al. 2013; Liu et al. 2013; Zhang et al. 2011; Zhu et al. 2015 as cited in Huang 2021, p 2510), while other scholars indicated that as parent and children conflict increases, most likely there will be risk to the increase in internet addiction (Deng et al. 2013; Yen et al. 2007 cited in Huang 2021, p 2510).

Scholars also studied that it is evident that parenting has a close connection with the addiction of gaming of children (Keya et al 2020). The result of this as studies showed included discouraging family relationship, parental neglect, depression and loneliness

and relief from stress, rejection of parents and parenting styles used (Loton, 2014; Hazar, 2019, Oskenbay et al., 2016; Anandari, 2016; Keya et al 2020). All those factors confirm relationship between parenting and child's digital addiction. Available studies confirm parenting has an influence on child digital game addition, however what conditions of parenting influence child's digital game addiction are not minutely addressed in the scholarly literatures. Therefore, although in this study we are not investigating the relationship between parent and adolescent it will be useful to highlight the importance of the parenting styles and relationship used by the parents with their adolescent in preventing, protecting and supporting their children in the risk of digital addiction or excessive use of technology.

Digital technology and Family Relationships

The excessive use of the internet and digital media has affected family relationships. Research has been conducted on the impact of family relations and social interaction and showed that there is a risk for the family (Alolyan, 2015). There are different kinds of risks associated with using digital media; children and adolescents are the most vulnerable group to those risks. Hasebrink, Livingstone and Haddon (2008) categorized three kinds of online risks: content, contact and conduct risks. The content risks are the exposure of children to inappropriate content. The contact risks are risky communications with peers and others and the conduct risks are the active actors who contribute risky contents or contact. Studies have shown that when children are not online they feel frustrated which has adverse effect as they ignore their family and friends wanting to spend more time online searching for new friends and having no purpose or aim (İnan-Kaya et al, 2018).

Studies have shown since the past four decades that technology will reduce the interaction with family members leading to social isolation and reduce the amount of time spend with the family members and interaction (Vitalari et al 1985; Sproull et al., 1992). It has been noted that families use the internet for communication with outside members of their families leading to less interaction within the family members (Nie, 2002). Also, studies showed that depending on internet reliance could lead to withdrawal from family, friends and social relationships. The time spend over the internet is taking away from the face-to-face interaction and the benefit of internet is that it provides information that is attractive to adolescent. Research has not explicitly mentioning that this time spend over the internet is more beneficial than traditional interactions (Kiesler, 2014).

The impact of the digital addiction as studies showed is that it can lead to social isolation as mentioned above. A study conducted in Korea showed the relationship between the use of internet by children and the communication within the family indicated that the time spend on internet has reduced the time spend with their families (Sook-Jung Lee et al 2009). In addition, Hampton and others argued that adolescent or young children like to communicate more with their same group online rather than face to face (Hamptons et al 2010).

Also, in a study conducted in Turkey on internet use with parents and children in 2008, the results showed that parents thought that the use of the internet has hindered the face-to-face communication. The parents complained that their children spend too much time on computers which in return has affected communication within the family negatively (Kabakci et al 2008)

Digital addiction and its impact on family relationships depend also on the parent-child relations as some scholars mentioned. Gunuc and Dogan, mentioned that the nature of the parent-child interaction is important to family relations. If the relation is active it does not lead to misbehavior or risk but if the relation is not supportive there is a risk of alienation between children and parents (Gunuc and Dogan, 2013).

Many empirical studies have shown a negative association between parent-children relationship and adolescents' internet addiction. Huang and others in a study on parent Parent-children relationship and internet addiction of adolescents mentioned that "Parent-children

relationship directly affects adolescents' self-concept and then their behavior" (Huang et al 2019, p 2515). The study showed that when there is a positive interaction between parents and adolescents, a healthy relation and a secure one will be established, whereas when there is negative parent-adolescent relationships this will lead to insecure relation and attachment between parent and adolescent which might result in problematic behavior like digital addiction (Huang et al 2019). Others also indicated that when there is a positive parent children relationship and quality of relationships with their parents there will be decrease in the adolescent use of the internet and addiction(Deng et al. 2013; Liu et al. 2013; Zhu et al. 2015), while a parent -children conflict relation will increase the risk of addiction (Deng et al. 2013; Yen et al. 2007; Schneider et al. 2001).

Parental Mediation and strategies

'Parental mediation' "refers to the diverse practices through which parents try to manage and regulate their children's experiences with the media" (Livingstone et al, 2015 p 7). Studies have shown that parental mediation depends on the country and nature of differences between parents and household (Livingstone et al 2015). Parental mediation can be classified as explained by Livingstone as:

> *Active mediation of internet use: practices such as talking about internet content and online activities, sitting nearby while the child is online and actively sharing the child's online experiences. 2. Active mediation of internet safety: activities and recommendations aimed at promoting safer and responsible uses of the internet. 3. Restrictive mediation: setting rules that limit time spent online, location of use, as well as content and activities. 4. Technical restrictions: the use of software and technical tools to filter, restrict and monitor children's online activities. 5. Monitoring: checking up on children's online practices after use (Livingstone et al, 2015, p 8).*

However, it was noted that the above-mentioned parental mediation does not fit all age categories with children. for example, in a study conducted by Clark in the USA, most parents they favor talk as a mediation strategy (Clark, 2013). In Europe, parents use active mediation of children's internet use for the age between 9-16 (Kirwil, 2009; Livingstone et al., 2011, 2012). While others use restrictive practices tend to be used more for younger children under 8 years old or when the parents are less educated (Chaudron et al., 2015), restrictive practices may be popular.

Studies showed that parental mediation strategies can be between a warm and supporting parent and a demanding parent (Clark, 2013). It was also mentioned that parenting style and the socio-economic situation play an important role in the usage of the mediation strategy. As Valcke mentioned authoritative parents combine their strategies as they include active mediation, social and technical restrictions (Valcke et al., 2010). Also, the level of education and the status of the parents also affects how parents use their strategies. Less educated parents engage in less active mediation for the use of the internet and they mostly use technical restriction. (Nikken and Schols, 2015).

Research also indicted that the strategies used by parents can create parent-child conflict. (Beyen et al 2017). Evidence has shown that the strategy of restrictive mediation led to more parent-child conflict. Children may show disobedience and rebellion against their parents' restrictions to use the internet (Nathanson; 2002, 2013 cited in Beyens et al 2017). This is a reaction against their parents as they want to preform that behavior and feel free to do what they want. It might also lead to children be more interested in the use of the internet. (Beyens et al 2017).

In a study conducted by Nathanson (2002) exploring the relationship between parental mediation and adolescent on the TV content and viewing, it was expected that active mediation would lead to more positive attitudes and reinforce the relationships, but this was not found in the study. Instead, it was

found that that when parents co-use and view what their children are doing together it would increase the bonding between child-parents and strengthen the relationship. This is because parents show interest in what their children are doing and willing to engage on the activities by their children and this will create a more cohesive relation (Mesch, 2006; Nathanson 2002).

Limited research has been done in Arab countries on the mediation strategies used by parents. In a study conducted by Alqahtani and other in 2017 on parents perceptions and attitudes and internet risk for children in Saudi Arabia revealed that most parents are interested in knowing what their children do online and minimizing the risk of internet but they have no strategy to reduce this risk. The findings indicated that there is an absence of collaboration between parent and children because of the shortage of resources and poor knowledge of internet or lifestyle (Alqahtani et al 2017). A survey was conducted of 400 adolsecnt in Joran in a study on parental mediation of adolescent internet use revealed that the mother educational level play a role in instructive mediation while the father have a significant effect on the co-use of as a mediation (Darweesh et al 2014). Thus, this research is important and will add empirical evidence on the strategies used by parents in Qatar and how it affects their relationship with the children.

2.3 Technology and Health

It is well documented that childhood is a critical period for physical, cognitive, emotional and social development and this period decides the trajectory for adulthood health and wellbeing (Kessler, Berglund, Demler, Jin, Merikangas, & Walters ,2005). Without proper support, early difficult experiences can disrupt healthy development and adversely affect the child's future mental and physical health. (The Colorado Children's Campaign, 2015). Although digital platforms can provide a space for a variety of information and knowledge; new ways of learning and searching for information; self-directed learning; flexible learning; use of artificial intelligence and virtual and augmented reality; a wider social network, seeking help, and entertainment, etc, concerns have been raised about the adverse effects of excessive use of digital technology on children's wellbeing, in particular, their mental and physical health (OECD, 2018). Yet, views on whether the impact of the overuse of digital technology would be positive or negative on children's health remains controversial.

The excessive use and rapid increase in screen time have been a major concern; issues around how children's digital technology use is affecting their mental and physical health are often at the forefront of discourse and polices related to children's digital engagement. Children's increased reliance on digital technology during the COVID-19 pandemic has only exacerbated these anxieties. Digital technology and interactivity pose a major risk to children's physical and mental health development and their overall well-being, amplifying the threats and injuries that many offline children have already faced, and making already vulnerable children more vulnerable (UNICEF, 2017). Existing research shows that greater use of digital technology may have some negative effects on children's health, ranging from mental health issues such as depression (Kim et al., 2010) or addiction (Young, 1996), to obesity, etc. (Sisson et al., 2010). This section, therefore, discusses the positive and negative effects that excessive use of digital technology might have on children's mental and physical health based on the latest evidence and the available intervention approaches for digital addiction. Where possible, findings from the Middle East and North Africa (MENA) and from Qatar specifically, will be highlighted.

Digital Addiction and Mental Health

Over the past few years, research on the correlation between excessive use of digital technology and mental illness has grown. Still, research into the use of digital technology and the mental health of children is not conclusive in various findings. Available studies have documented that children and adolescents

who are addicted and overuse of digital technology have low self-esteem (Kagan, 2016), mental disorders (Ko, Yen, Yen, Chen, Chen, 2012), Attention Deficit Hyperactivity Disorder (Weinstein, Yaacov, Manning, Danon, & Weizman, 2015;Mohamed & Bernouss,2019), depression (Morrison & Gore, 2010; Young, 1998), anxiety (Mood disorder) (Vidyachathoth, Kumar, & Pai, 2014), locus of control (Rotsztein, 2003), self-regulations (LaRose, Lin, & Eastin, 2009), Psychological well-being (Kim, LaRose, & Peng, 2009; Mohamed & Bernouss,2019), or that mental health is negatively affected by sleep loss or withdrawal due to high levels of digital use (Hokby et al., 2016; Van der Schuur et al., 2019; Abbey, Walter, & Frank, 2010; Lam, 2014)), to name just a few. In a study of 2,114 students diagnosed with IA using a self-report questionnaire documented that individuals with IA had higher attention deficit hyperactivity disorder (ADHD) symptoms, depressive disorders, social phobia, and hostility particularly among male adolescents (Yen, Ko, Yen, HY, & MJ, 2007). Others argue that the overuse of digital technology exacerbates self-harm tendencies among children with a history of self-harm due to easily accessible images and online communities that normalize and encourage these behaviors (Jacob et al., 2017; Patchin & Hinduja, 2017).

Empirical evidence from the MENA region also revealed that children who frequently used digital technology were more likely to experience mental health problems. A study conducted in Jordan found a positive relationship between anxiety, depression, and the occurrence of internet addiction (Abdrbo & Hassanein, 2017; Malak, Khalifeh & Shuhaiber, 2017). Research from KSA also found that 38.4% and 2.1% of the participants were classified as moderate to severe Internet addiction respectively, whereas 64.6% suffering from depression and 35.4% having depression symptoms. (Khalil, Alharbi, Alhawasawi, et al., 2016; Al-hantoushi & Al-abdullateef, 2014). In Egypt, many studies have shown a significant relationship between IA scores, social phobia and generalized anxiety disorder (Nafee, Mohammed&. Al-Hamdan, 2018; El Gazzar, 2011; Reda, Rabie, Mohsen, et al. 2012). Another study from the United Arab Emirates revealed that children, who excessively use digital technology might face social, emotional and behavioral problems such as isolation, anxiety and depression (Hussain, Ahmed, Hamid, Tuffaha & Aguilar, 2019).

On the other hand, studies that account for factors like friendship quality found no association between online use and feelings of depression among children that reported having medium or high-quality friendships. The opposite was true for children with low-quality friendships. When children with low-quality friendships interact with others online, they are less likely to report feelings of depression. Others find that digital self-harm might be associated with offline factors like experiences of bullying, drug use and delinquency, rather than internet-related experiences per se (Stoilova, Livingstone, & Khazbak, 2021; Blum-Ross & Livingstone, 2016; OECD, 2018).

Despite such documented negative impacts of the overuse of digital technology on children's mental health, there is evidence of a positive relationship between digital use and mental well-being through a positive association with accessing online mental health resources or support networks (Stoilova et al., forthcoming; Nikolaou, 2017; Hinduja & Patchin, 2019). Although there are many gaps in our understanding of Qatari adolescents' excessive use of digital technologies, one study found that mental health apps were the most popular type of health-related app among Qatari teens, with one in three respondents using them (Schoenbach et al., 2017). These apps seem quite effective, as 75% of those using mental health apps attempted to change their behaviors after using these apps.

Digital Addiction and Physical Health

The prolonged use of digital technology has been recognized by The American Academy of Pediatrics as major contributor to childhood health problems in the 21st century (American Academy of Pediatrics, nd; Center for Screentime Awareness, 2009). Numerous studies have shown that excessive use of technology can negatively impact children's physical health, increasing the risk of somatic health problems, insufficient sleep,

excessive weight in adolescents, increased head and neck flexion, and increased lumbar lordosis (Richard, Akre , Berchtold, et al. 2011; Punamaki , Wallenius , Nygard , et al. 2007; Surisa , Akre, Pigueta et al. 2014; Nafee, Mohammed, &Al-Hamdan, 2018). Several health issues have been linked to frequent use of digital technology, including carpal tunnel syndrome, dry eyes, headaches, musculoskeletal difficulties, discomfort, and visual fatigue (Anderson, 2001). For example, a study of American youth found a relationship between excessive computer time and musculoskeletal discomfort, which is described as musculoskeletal pain. Computer use is an important health risk factor for children as neck / shoulder and back pain during adolescence can lead to early onset of degenerative musculoskeletal dysfunction (Hope et al. 2007; Bener, Al-Mahdi, Vachhani & Al-Nufal, 2010). According to Hakala (2006) and Gur, Sisman, Sener et al. (2016), teenagers who sit on the Internet for a long-time experience pain in the back, neck and arm, constipation, gas, watery eyes, or redness of the eyes. Another study found an association between complaints of musculoskeletal pain in both boys and girls and daily computer use for more than 3 hours (Saueressig et al. 2015; Derbyshire et al. 2013).

Children's lifestyle patterns developed as a result of watching television and using computers are often harmful to their health. Children who spend a lot of time watching TV or using computers are less likely to engage in physical activities and are more likely to eat unhealthy foods, which increases the amount of time they spend in front of screens and may damage their vision (Davey, 2004; Bener , Al-Mahdi , Vachhani & Al-Nufal , 2010). Several studies have also shown that their exposure to advertising promotes kids to consume marketed fast foods and high-fat, high-sugar snacks (Bar-Anderson et al., 2009; Wiecha et al., 2006). These poor living behaviors have the potential to affect children's vision as well as their obesity rates (Bener, Al-Mahdi, Vachhani, & Al-Nufal, 2010). However, it is worth mentioning here that one of the few longitudinal studies in this field of 11-13-year-old suggests reducing time children spend online does not automatically result in increased physical activity. The authors argue that internet use is not replacing exercise time. Rather, other factors such as a lack of interest or motivation may be more relevant. Therefore, the authors suggest promoting physical activity and adhering to a healthy diet independently could be a more effective approach (Gebremariam et al., 2013).

Research on digital technology use and its impact on children's physical health in the MENA region is limited, however existing data from the region have also documented the negative impact of overuse of technology on children's physical health. A comparative study measuring the health effects of excessive Internet use on Saudi and Egyptian adolescents found that approximately 87% of Saudi Arabian adolescents use the Internet every day, compared with 69.6% of ARE. Internet addiction among adolescents, 0.9% was severe, 45.3% was moderate, 47.7% was mild, while ARE one was 0.3%, 46.3%, and 44.2% respectively. About 67.3% of KSA adolescents developed musculoskeletal pain due to Internet use, while ARE adolescents accounted for 74.3%. Empirical evidence from Qatar also found that a greater proportion of Qatari students have Problematic Internet Use (PIU). Compared with the non-PIU group, students with PIU had significantly less sleep time. Furthermore, the proportion of students who engaged in moderate physical activity was considerably lower in the PIU group than in the control group. PIU was positively associated with Qatari nationality, male sex, having a nonworking mother (housewife), eating fast meals, and having a high BDI score, but moderate and light physical activity were negatively associated with PIU, respectively (Bener & Bhugra, 2013). Bener et al., (2010) further documented that low vision is strongly associated with unhealthy lifestyle habits such as spending prolonged hours on the internet and reclining and having a high BMI. In Oman, many teens download Internet content without being aware of its legality. This can adversely affect their lives and behaviors, and using mobile phones can expose them to fatigue, headaches, poor concentration, local irritation, and hand burns (Al) (Badi, Al Mahrouqi, Ali, 2016). It is worth noting here that, as with digital use and mental health, the results of the literature are mixed or inconsistent, and no firm conclusions can be reached regarding the abuse of children in digital technology and physical health.

2.4 Current Intervention Approaches for DA

Digital addiction is not officially recognized in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), yet it is considered a growing public problem around the world. Over the past two decades, DA has emerged as a popular term and point of focus of research due to its growing popularity and social concerns related to excessive use of digital devices and services (Almourad et al., 2020; Cemiloglu, Almourad, McAlaney and Ali). While the status of this phenomena as a diagnosable mental health disease is still open to question, there is a need for evidence - based prevention and intervention strategies that encourage people to have more control over their internet use (Cemiloglu, Almourad, McAlaney and Ali).

Although DA is increasingly recognized as an important subject in the field of public health, and it is recognized that preventive interventions are needed, little is known about the best strategies to prevent this problem or the effectiveness of existing prevention programs (Romero Saletti, Van den Broucke & Chau, 2021). Therefore, several useful prevention and interventional approaches to treat different types of DA, such as the Internet, social media, and game addiction, have been proposed as a response to individuals seeking professional help (Ruggieri et al. 2016; Chau et. al.2019; Hou et al. 2019; Cemiloglu, Almourad, McAlaney and Ali). A literature review of 87 studies on combating digital addiction has documented the available prevention and interventional approaches and grouped them under three categories: psycho-social, software mediated and combined (Cemiloglu, Almourad, McAlaney and Ali). Below is a brief summary of each approach:

Psychosocial approaches

A number of psychosocial treatment approaches have been summarized by Cemiloglu, Almourad, McAlaney and Ali) to explain technology addiction, most of which have been demonstrated to be effective in lowering DA levels or reducing time spent with digital devices or services. Such approaches focused on cognitive behavioral therapy (CBT), which is the most common one, education strategy, and other approaches. Overall, CBT aims to help individuals understand the behavioral and cognitive components of their excessive behavior, and train them to cope with reactions and avoid relapse (Young 2013; Cemiloglu, Almourad, McAlaney and Ali). CBT is used within the context of DA, by emphasizing internal and external triggers that challenge their impulse control, as well as by emphasizing feelings, psychological needs, and cognitive distortions overuse (Wölfling et al. 2014; Ke and Wong 2018). This understanding can help individuals identify the causes of addictive use patterns and challenge the negative emotions and misconceptions associated with digital overuse. Educational strategy research aims to teach students DA and strategies for coping with such behaviors through the use of group activities, video viewing, and role modeling (Cemiloglu, Almourad, McAlaney and Ali). Other approaches include Craving interventions: Recognize and deal with irrational beliefs and negative emotions about craving ; The role of family dynamics: Meet unmet psychological needs leading to digital abuse by strengthening family communication and relationships; Mind subtraction mediation ; Mindfulness intervention ; Manual therapy ; Short-term abstinence intervention specialized adolescent psychotherapy (PIPATIC) ; reality therapy; positive psychological intervention ; Motivational Strengthening Therapy, and Solution-Oriented Simple Treatment Cemiloglu, Almourad, McAlaney and Ali).

Software mediated approach

Within the context of DA, Software Mediated Countermeasures have been demonstrated to be effective in raising awareness on DA and introducing direct interventions to behaviour (Cemiloglu, Almourad, McAlaney and Ali). Raising awareness on DA would be through 1) using a website as the main platform for intervention (Su et al. 2011; Sei et al. 2018) where students visit the website to gain general knowledge about internet addiction, receive personalized feedback about their digital usage and learn about coping mechanisms; 2) adopting a gamification approach and made use of online training modules (Chau et al. 2019) where students can be informed about hasty online behaviour, negative consequences related to Internet gaming disorder, and ways of preventing such problems with educational

presentations, games, tournaments, and video discussions; 3) or making use of a mind-fulness app which consisted of tasks to increase mindful attention awareness to cravings (Ke and Shih-Tsung 2019).

Introducing direct interventions to behaviour would focus on limit setting as a DA countermeasure, Cognitive Task, Message Framing, and other countermeasures such as Use of Virtual Reality (Cemiloglu, Almourad, McAlaney and Ali). limit setting would include group-based intervention and Individual-based intervention. Group-based intervention aims to increase self-regulation by utilizing social support in which people would lessen their use together. This would be accomplished through a mobile service or app which supported the sub-functions of self-regulation (i) self-monitoring, (ii) goal setting and usage limiting and (iii) social learning. Such countermeasure was proven to be successful in improving self-regulation and that peers in the group encouraged each other in reducing the time spent on smartphones. Individual-based limit setting intervention focus on creating usage restriction rules (öchtefeld et al. 2013), limiting by setting time for non-use (Kim et al. 2017b), limiting by setting time for use (Hiniker et al. 2016), or making use of nudge (Okeke et al. 2018) in which participants were informed with a phone vibration when they reached their daily time limit. Cognitive Task focuses on impulse behaviors that arise from intuitive decision-making in explaining addictive behavior. Consequently, a lockout task that aimed to dissociate gratification-seeking thoughts from action outcomes was introduced. In terms of delivering intervention messages through software (Message Framing), productivity was improved when the intervention message emphasized time spent with distracting activities (negative framing) compared to time spent with productive activities (positive framing). Delivery of software-mediated interventions can be improved with context dependent interventions, for example using location-based reminders which can be activated in class or work settings (Ko et al. 2016; Kim et al. 2017a). Monitoring the use of across multiple improve software mediated interventions will limit addictive behavior in a more comprehensive style (Kim et al. 2017).

According to learning theories, addictive behavior develops into a habit because of the constant combination of addictive action with positive outcomes (Wood and Rünger, 2016). Thus, virtual reality has been used to combine previously liked game scenes with annoying noise in order to reduce unwanted excessive gameplay (Cemiloglu, Almourad, McAlaney and Ali).

Combined approach

The combined method refers to the simultaneous use of two or more countermeasure techniques to intervene in behavior (Cemiloglu, Almourad, McAlaney and Ali), such as CBT and drug prescribing (Kim et al. 2012), CBT and motivational interviewing (Thorens et al. 2014), and CBT and mindfulness training, (Li et al. 2018), CBT with electroacupuncture (Li et al. 2017), psychological intervention with physical exercise (Hong et al. 2020; Pan 2020), real therapy and mindfulness mediation (Yao et al. 2017) . As another approach, Sakuma et al. (2017) adopted a self-discovery camp that included CBT sessions, medical lectures, personal counseling, and workshops to train participants on the importance of balanced living, face-to-face communication, and collaboration with others. During the nine-day camp, participants were banned from using digital devices and led to outdoor activities and hobbies.

In general, it is important to note that such proposed approaches have been found to be effective in reducing DA. Yet, it is not possible to make a general statement about the effectiveness of the proposed methods due to the inconsistent perception of digital addiction and methodological weaknesses (Cemiloglu, Almourad, McAlaney, Ali).

CHAPTER THREE

The main research question of the study is:

What impact does excessive use of digital technologies have on family cohesion and relationships within the family, health of children and adults, and student learning, and what should parents and policymakers do to address this issue in Qatar?

The objectives of the project are:

1. Understand the perceptions and experiences of excessive use of digital technologies of families in Qatar, and attempt to define this problem and identify its aspects.

2. Identify the factors that contribute to excessive use of digital technologies among children and parents.

3. Understand the impact of excessive use of digital technologies on family relationships, and children's health (mental, psychological, and physical) and education outcomes or academic performance.

4. Identify parental monitoring, guidance, and mediation, parental norms and behaviors.

5. Identify coping mechanisms to deal with issues that lead to excessive use of digital technologies.

6. Propose recommendations based on the key findings and best practices that may contribute to relevant policy and program development and policy advocacy.

7. Contribute to the knowledge base on how excessive use of digital technologies affects family cohesion, health, and student learning.

To answer these questions, the project contains three major studies. The first focuses on capturing and analyzing the parents' perspectives to the issue in their adolescent kids and it consists of two parts. The first part is qualitative ant it is based on interviews. The second is quantitative and it is based on a survey. The second study repeats the first one but instead of parents, we interview and survey adolescents. The two studies will allow us to compare and contrast the two perspectives. The third study aims at analyzing the status of care services in Qatar with regard to aiding families with adolescents with excessive technology usage. We interview practitioners in different sectors in Qatar about the available services and the public attitude towards them.

In this interim report, we only present results from the first study and, hence, describe its method in details.

3.1 Research Design and Methods

A cross-sectional quantitative survey was conducted on a non-random sample of parents who have children aged 10-16 and residing in Qatar (N=183), using online SurveyMonkey platform and the principles of snowballing sampling technique. The questionnaire was structured with mainly closed-ended; and the average time for study participation by each respondent will be 5-10 minutes. At the time of data collection, participants were informed of the purpose of the study and were advised that participation is voluntary, and they are free to refuse entirely; abstain from answering some questions; or withdraw from the questionnaire at any time without facing penalties. Participants were also assured that their privacy and identity will be protected and will not be disclosed; all information will be kept confidential, and the results will be summarized and presented in aggregate form. Data were collected through online administered questionnaires.

The survey was pretested first through a pilot study to ensure its adequacy. Respondents' ability to understand and answer the questions was assessed and refined accordingly. Following the evaluation of the pilot study data, the questionnaire was finalized. The survey was developed initially in English and subsequently translated into Arabic. Bilingual researchers have checked the quality of translation. The survey had the following main sections:

- Demographics, including age, gender, income, profession and country.
- Parents answers to the Internet Addiction Test – 8 items by Young (1998a)
- Parents answers about their adolescent kids' technology usage, education performance, arguments about technology usage, need for help regarding that and awareness of available services.
- Parents assessment of their kids Internet Addiction, measure through Wartberg et al, (2016).

In addition, face-to-face semi structured in-depth qualitative interviews with parents with children ages 10-16 in order to gain a better understanding of the perceptions and experiences of excessive use of digital technologies of families in Qatar, and attempt to define this problem and identify its aspects; Identify the factors that contribute to excessive use of digital technologies among children and parents; and Understand the impact of excessive use of digital technologies on family relationships, and children's health (mental, psychological, and physical) and education outcomes or academic performance. Furthermore, professionals from the health and education sectors to assess the current approaches offered by health and education sectors in Qatar and their status were interviewed as well.

3.2 Sample and Settings

In this study, the target population will be Arab parents with children aged 10-16 and professionals from the health and education sectors in Qatar. With regard to the qualitative interviews, a non-probabilistic purposive sampling approach will be used to select parents with children ages 10-16 (n=44) and professionals from the health and education sectors (n=10-20). However, the analysis for this report will be based on a sub sample of 12 parents. Parents will be recruited to participate in this study through social media, messages, emails, and flyers. As for the survey, anon- random sample of parents with children aged 10-16 in Qatar (N=174) was recruited using online survey monkey platform and the principles of snowballing sampling technique.

Inclusion criteria:

- Parents with children ages 10-16
- Adults (18 -60 years old)
- Resident in Qatar
- Male or Female
- Capable to give informed consent

Exclusion criteria

- Vulnerable population
- Not a resident in Qatar
- Children under 19 years old
- Not Capable to give informed consent

3.3 Data Management and Analysis

The quantitative data was coded and analyzed with JASP software developed by University of Amsterdam. Several statistical techniques were used utilizing both univariate and bivariate analysis. Univariate is descriptive statistics that describes the basic features of the data in the study to provide simple summaries about the sample and the measures, e.g., central tendency. Bivariate is a form of quantitative statistics that involves the analysis of two variables for the purpose of determining the empirical relationship between them, e.g., correlation.

For the Qualitative interviews, this research employed a phenomenological qualitative descriptive design geared towards gaining an understanding of the excessive use of technology of adolescents. Interested in the qualitative and contextual complexity of the issue, we focused on participant views (Creswell, 2003) of excessive use of technology by their adolescents.

Utilizing qualitative, semi-structured interviews with open-ended questions, we successfully elicited data that allowed the researchers to identify themes related to the reason for use, arguments, strategies, and help seeking of parents views and perspective of their adolescents use to technology.

The following inclusion criteria was used in this study: 1) live in Qatar; 2) have children between 10-16 years 3) originally Arabs, 4) have adolescents who heavily use technology. We recruited participants by using word of mouth, and snow balling technique. We recruited 44 parents who met the inclusion criteria. The study underwent ethical review approval by the QBRI ethics board. Among the 44 participants, 17 were male and 27were female. Of the 27 females, 12 were Qatari nationals and 15 were non-Qatari nationals. Out of the 17 males 8 were Qatari and 9 non-Qatari nationals. The age range was between 30-50 years. The nationality ranged from different countries representing Qatar, Sudan, Egypt, Jordan, Palestine and Yemen. Sub analysis of 12 participants is used in this report as preliminary results from the qualitative data.

Interviews were conducted partially face to face or via the phone due to covid-19 restrictions at a time and place which was convenient to participant. Interviews were conducted by the research team represented from the three institutes WISH, WISE and DIFI. Transcriptions of the data was done by researchers from the three institutes.

Interview data were coded and analyzed using Strauss and Corbin's (1998) grounded theory approach. In the coding phase broad categories were created for the meaning of digital addiction, behavior, conditions, reasons, pros and cons, strategies and arguments. Subcategories were then formed, as conceptually similar content was grouped via constant comparison. For example, the "reasons for use of technology" category had subcategories like "entertainment" and "education".

3.4 Ethical Considerations

IRB approval to conduct this research was obtained through Hamad Bin Khalifa University. In order to assure anonymity and privacy, respondents were informed of the study's purpose at the time of data collection, and that participation is voluntary, a written informed consent form was given. For the parents' online survey, a waiver of informed consent will be sought and a response to the survey was be considered indicative of consent to participate. They are free to refuse to participate, abstain from answering any question and/or withdraw from the interview at will without repercussion. All obtained information will be kept confidential, and the results will be summarized and presented in an aggregated and anonymous form.

CHAPTER FOUR

4.1. Characteristics of the parents interviewed

The parents interviewed comprised a mix of male and female from Qatari and Arab (Jordanian, Sudanese, Palestinian, Egyptian, others) expatriate populations in Qatar. They ranged in age from 35 and 55 years and most of them have graduate degrees. All parents interviewed are either fulltime or parttime employees except for one housewife. Most families have 3 to 4 children, and most families live in villas within gated communities (compounds) or detached houses.

4.2. Patterns, purposes and duration of technology usage among participants

Fathers and mothers use technology for various purposes and duration and in slightly different patterns. All **fathers** use digital technologies for both work and personal or social purposes. They use digital technologies for around 8-10 hours a day throughout the day but mostly during office hours for work. In the evening, they use these technologies for personal and social purposes including social media. However, a few fathers also use digital technologies for watching content (videos, TV shows, etc.,) in addition to one who uses technology to help children with homework. Most fathers use both a laptop computer and a cell phone but a few of them use cell phones only. One father uses a tablet in addition to a laptop computer.

On the other hand, most **mothers** use digital technologies for communication, social media and watching content online. Three mothers reported that they also use technology for work, and one uses it for online shopping and ordering food and groceries. Almost all mothers use digital technologies in the evening with some also using them during the day. A small number of mothers use digital technologies on and off throughout the day. In terms of duration, around half the number of mothers interviewed use technology for 3-5 hours a day. Fifty percent of the remaining ones use technologies 8-10 hours a day; the other fifty percent use technology for an unspecified number of hours. All mothers (except the housewife) indicated that they work for 7 to 8 hours in the morning/early afternoon. Then some help children with their homework, some run errands for the house, and some enjoy their social life including using social media and online shopping.

All **children** without exception use technology for more than one purpose. All of them use technology for school and homework given the move to remote education and learning. Many participants also use it for games and social media, and some watch content online. One participant indicated that his children use technology also to order food and for online shopping. All children use technology in the morning for schoolwork in addition to homework in the afternoon and/or evening. Many of them use technology throughout the week and on weekends as well. Most children use technology for around 8 hours with some exceeding that to 12 hours a day. All children (except one) use more than one device. Most of them use laptop computers and/or tablets in addition to cell phones. Six participants reported that their children use Play Station for games.

4.3. Impact of technology overuse as perceived by parents interviewed

Almost all participants indicated that using technology has negative impacts on their children and that the relationship of their children with technology is not healthy. Only one participant was neutral about this relationship, and two indicated that using technology also has some positive aspects. The negative impacts mentioned by the participants included: health issues (vision, physical

activities, back problems, eating and drinking bad habits), social issues (bad behavior and mood, lack of concentration and self- control, aggression, children becoming unsociable). For instance, one of the parents mentioned that *"In family gatherings, kids are no longer concentrated or willing to play with each other. Instead, they are all on their devices".* On the other hand, the positive impacts mentioned by two participants centered around the critical need for technology to do schoolwork and for learning, and the need for awareness of technology and being able to solve technology-related problems.

4.4. Children's use of technology compared to their peers

Only one parent indicated that his child uses technology more than his peers, and two indicated that their children use technology more or less as their peers. The remaining participants clearly indicated they their children use technology less than their peers. Their references were mainly what they heard from other parents or from their children about the use of other kids which can be very subjective.

4.5. Knowledge of the term "Digital Addiction"

Eight parents have reported that they heard of the term "digital addiction" whereas two have not.

4.6. When do parent says that their adolescent kids are excessive or 'addicted' users?

Parents mentioned several diverse factors and conditions that they notice in their children and characterize as relevant to the excessive use of technology. One of the factors was the amount of time spent using technology. Some parents indicated that using technology for 4-5 hours per day is problematic. Another factor is the lack of concentration among children as a result of using technology. Another symptom of addictive behavior is social withdrawal and changes in behavior. In these cases, children become nervous all the time and show signs of discomfort and anxiety. Lack of sleep was also mentioned as a sign of excessive use of technology, especially when it leads to health complications. The negative impact on family relations and family cohesion were also mentioned as signs of technology overuse. Finally, a few parents highlighted some severe cases when their children become more defensive and start to break things and jump if they do not get what they want or if they are not allowed to use technology.

4.7. Why do adolescents develop DA?

Parents had mixed views about why children have use technology excessively or are digital addicts. One of the reasons was that children are passionate about exploring and learning new things via technology, whereas the need to use technology to do schoolwork was mentioned as another reason for triggering the problem. Using technology was also associated with entertainment for children, especially as new technologies are designed to trigger children to continue using them. Use of technology was also viewed as a social status and for children to fit in with their peers.

The COVID-19 pandemic and lack of physical activity during lockdown times were highlighted among the main reasons why children use technology excessively. During these times children used technology to communicate with their friends and relatives since they could not interact physically.

Another important factor is the lack of parents' action and awareness of the issue. Some parents unconsciously contributed to their children's addictive use of technology as they did not control their usage and allowed it without supervision. One parent clearly stated *"the freedom to play games and chat with other people is tempting and accessible for the children to use. The attractive sites and information make the child indulged and immersed in the net and not feeling about the time because he or she has the freedom to explore new sites and information*

such as watching films after films and gaming so when you ask them to do another activity outside the net they are not interested because they find themselves more in close relationship with the iPad or the net because of the information they receive".

4.8. What is the negative impact of DA on adolescents and their families?

Parents' perspectives regarding the impact of technology overuse on their children clearly reflects a more negative than positive stand. Most parents agree that overuse of digital technology has a negative impact on their children and on their lives. The negative impact is in one or more of the following areas: social, education, health and behavior.

- ***Impact on social live and family relationships***

The social impact was clear in the change in family relations as children using technology excessively are becoming more socially disconnected and are not interested in family gatherings. Children also show signs of disintegration from the family with increased conflict with other family members over many things. Another aspect of social impact on children is that they became socially shy and do not know how to connect with other people.

- ***Impact on health***

The negative impact on adolescents' health varied but included several symptoms such as increased heartbeat, insomnia, fatigue, eyesight problem, neck pain, shoulder and backbone problems and obesity. Some adolescents had the symptoms of one of these problems whereas others had more than one. As one parent clearly explains: *"Now, in terms of health, as we have learned in life and seen many cases, for example, that they have an imbalance and increases in the heartbeat, an increase in electricity in the nerves, neck pain or shoulder growth has become different… the eyes are blurred and short-sighted from the devices. All these are real health indicators for the excessive use of technology."*

- ***Impact on education***

The impact of technology overuse mentioned by parents included poor academic performance as a result of lack of concentration. However, one parent indicated that use of technology has positive impact on the education of adolescents such as the expansion of knowledge, access to materials and other aspects. One parent succinctly reflects this view of both negative and positive impact by stating: *"Now, education, I see that a large part of it is positive growth. The use of digital education is positive in terms of extensive knowledge of world sciences, ... I mean, there is a great benefit, but certainly when we reach the point of addiction, it is a bad thing and can lead to a lack of focus and poor academic achievement...."* Another parent uses a specific example to clarify the negative impact of technology overuse on the academic performance of students. He states: *"These days the children are not creative enough they find all the information on the internet, and it is ready for them. you feel that their essay and writing is very primitive not critically written with mind thinking."*

- ***Impact on behavior***

Overuse of technology seems to affect the behavior of adolescents negatively according to most parents. The negative behavior was associated with some psychological problems such as stress, depression, loneliness and bullying. One parent mentioned that *"Use of technology has a really negative impact on academic achievements and social relations. When an adolescent uses technology excessively there is no social connection with their families. This is in addition to their behavioral changes; they become violent and stressed".*

Additionally, since adolescents are still growing and their personalities are being shaped, they can be easily affected by external factors. This is clear in the response of one parent who states: *"From a psychological point of view, extensive usage can lead to problems in personality such as duality in the personality loneliness, and so on. In fact, the psychological state of the young person is vulnerable to many disorders."* However, one parent indicated that adolescents could become more creative due to the use of technology.

4.9. Who is responsible for causing DA?

When discussing who is responsible for causing the excessive use of technology, most parents blamed themselves and held themselves responsible for their children's behavior in relation to use of technology. They indicated that the parents have the primary responsibility for their children's behavior. They claimed that most of the times parents are busy and they allow their children to use digital devices to keep them busy.

However, some parents also blamed the schools and governments for the children's attachment to technology. They think that schools have adopted technology in most aspects of education and do not educate the children about the potential negative impact of using technology. Some of the parents blamed government and specially the ministry of communications and claimed that they have a role in restricting the use of children by blocking some of the sites as this will help mitigate the problem. They also think the government can play a role in spreading awareness about the issue in the society. A few parents also blamed the technology companies for the children's excessive use of technology as they promote their products to generate revenue with no benefits of the children.

One parent believes there are three stakeholders responsible for managing technology use: 1) governments are responsible for legislation, controlling the content and preventing some programs that are not acceptable for the society; 2) schools are responsible for raising awareness among students of the impacts of technology overuse; and 3) parents, the most important stakeholder, play the main role in implementing and enforcing any restrictions.

Overall, most parents realize the important roles of school, governments, and technology companies in managing technology overuse. However, they are aware that the main responsibility lies with parents to control and mitigate the issue. One parent indicates that the parents' responsibility is to first control their children's use of technology but if they fail to do so, then they have to mitigate the effects of the problem. Other parents mentioned that they have to control the use of their children by giving them specific hours per day to use technology, or to only give them specific days such as weekends and holidays.

4.10. What are parents' strategies for dealing with DA?

The parents identified various strategies for dealing with the excessive use of digital technology by their adolescents. Some parents mentioned that one of the strategies they use is to control the time of use on a daily basis. Another strategy parents use is to have discussions with their children about the negative effects of digital addiction and try to persuade them to reduce the amount of time they use their devices. Another strategy used is trying to provide alternative activities such as sport or any other outdoor activities or reading books to shift the children's attention from using their devices. For example, one parent stated *"For my kids, I provided opportunities for physical activities. So, I bought table tennis equipment so they can practice and play instead of watching videos. I have a pool in my house, so I hired a coach for swimming".*

Parents mentioned a few other strategies they used to limit their children's use of technology. Some parents dedicate more family time for activities and family discussion so that the children do not feel lonely. other parents give their children incentives when they use digital devices in a timely manner and under their control. A few parents mentioned that they use punishment as a strategy to control the usage of devices. Finally, one of the parents mentioned that they use screen/sharing control with their child, so they cannot download or watch anything without getting the permission of the parent.

4.11. What makes a strategy to deal with DA successful?

Most parents agreed that giving their children a sense of commitment has helped them with their strategies to work. They also mentioned giving their children the responsibility over their use of the devices. For example, children would choose what hours they can use the device and they divide the time according to their preferences and then return the device to their parents. This way, they will feel more responsible, and they will be more supportive of their parents.

Some parents mentioned that giving the children the flexibility to use their devices has helped them with their strategy whereas other parents agreed to give their children specific timing to use the devices as a strategy that helped them with controlling the usage of technology.

Most parents were opposed to the idea of forcing the child to give up the device, but instead talk to them and try to persuade them to stop using their devices. Some parents mentioned that they have to be open with their children and have a sense of trust among them, for the children to be more supportive and cooperative with their parents.

Some parents try to give incentives to their children when they are supportive, and they follow the rules. For instance, one of the parents stated *"I tried once to take the devices from them completely, but it did not work. Instead, now I try to give them specific timing to use them and if they follow this role, I reward them".*

4.12. What leads to failure in a strategy to deal with DA?

Parents adopted various strategies to limit their children's use of digital technology but not all these strategies have been successful. Most parents indicated that forcing the child to completely give up the device was a failing strategy as children were not very cooperative when forced. Similarly, punishing the child or giving them penalties also failed as the children became uncooperative and they would use the devices even more when they have them again the next time. Some parents highlighted the importance of having a discussion with the children first to make them aware of the issue. For example, one parent mentioned that *"The forcing strategy did not work with me and so I learned to talk to my children instead of forcing them".*

One of the themes that emerged from the analysis of the parent interviews is that parents should be role models for their children and they also should control their own use of digital devices, otherwise children will not listen to them. Some parents mentioned that when their children lack motivation to give up their devices, all their strategies fail. Therefore, they must first motivate their children with incentives or any alternative activities in order for them to stop using their technological devices.

4.13. What is the nature of the dialogue between parents and kids? How do parents argue?

The nature of the dialogue between the parents and the children was in the form of mainly a family discussion and few of the participants whether the mother or the father initiated the discussion. Within this theme of **family discussion**, the participants used several approaches among them: persuasion, advice, convincing and friendly approach to talk to their children about the excessive use of technology.

Persuasion is used as an approach by some parents when discussing health issues. Health issues was the most concern among the parents when discussing with their children. This is because in the long run the impact of excessive technology on the health is harmful to the child and parents are more concerned about this very much. It is used by the parents to build trust between their children. the discussion is usually around the number of times the child uses the technology and for long. The pros and cons of technology was mentioned by the parents as it helps the child have a clear picture about the how and when to use the technology. By giving examples of the pros and cons such as shoulder pain and backpain the child will be able to notice this behavior. *"There is always an argument about the number of times he can use the tablet and for how long. I clarify to him that technology has good sides and bad sides and that we need to learn to use technology but also to have social time together"* also by giving example of health issues such as shoulder pain to the child is a persuasive and convincing method to approach. *"I tell them that i had a problem in my shoulder because of using the mobile so i do not want them to use it also because it affects their health. when i tell them to go out they say what shall we do all our friends and relatives have the iPad and net".*

Advisory approach was used by most of the participants. Advice on the importance of physical activities and socialization was mentioned by one of the parents. Advise that that the excessive use of technology will keep away the social activities and interaction with the family and friends was discussed. In addition, like the persuasion approach on health issues such as eyesight problems, affecting the mind and thinking was discussed with the parents. Also, the impact on education performance and piling of homework and low grades at school are of concern to some parents. *"it harms your eyes, you need to do physical activities, read a book, chat with your friend when he visit you do use the iPad . but i think they are still young to understand what i am saying and acknowledging my words. i feel that they need to grow up more to understand."*

Convincing approach was an approach used by some of the parents. The dialogue takes the form in convincing the child about the negative and positive impact of technology. Also convincing the child about how much time is wasted while using the technology and how the behavior change as a result of excessive use of technology *"I try to convince him that using the tablet too much wastes his time that he can use for more useful things. I also give him examples of how his mood and behavior change when he uses the tablet too much".* This approach was used in combination with other approaches as it emerged from the data

Friendly approach was used in the discussion between the participants and their children. This approach tends to build some confidence and trust, bringing the child closer to the parent. *"I use a friendly approach and try to become close to them when we discuss this issue. You need to convince them of your argument and also provide them with rewards when they comply with what you agreed"* being friendly with the children tends to be a cooperative approach in discussing the pros and cons of the technology.

Penalty and reward approach was used by two of the participants. The use of signing a contract with provisions was one of the approaches used by the participant. This sets boundaries and stipulations in the use of the technology. *"I mean, sometimes, for example, I show my son videos of those who spend a lot of time on Fortnite and their damages and good deeds. We talk about their good deeds that he sees his friends, and this is what I mean, we discuss issues related to the digital use and we decide to make a contract. We make a contract with laws so that it is clear, and we all sign a contract. Of course, the contract is required… And if the contract is entered into, then I am strong when the retribution comes, because it will be what I have committed, so I will not be bound by it, so he must understand that there are responsibilities and laws and such.. This approach helps both parents and child to refer back to the contract and provisions stated in it in case of any of the parties break any of the provisions."*

4.14. How do children argue?

Two main themes emerged from the participants. **Accessible and used by everyone** was a main theme that emerged from most of the participants. The argument was mentioned by most of the parents saying that their children would argue that all their peers use the technology so why not them. this argument puts parents in confrontation with their children as it makes children in a strong position to argue with their parents to use the technology. The influence of their peers in using the technology can be one of the drives to communicate with them.

That is why **communication** emerged as a theme and argument used by the children. The children want to communicate with their peers and family relatives through social media and have fun by playing games. *"They want to chat with their friends or relatives, or sometimes play games with them remotely at the same time. Particularly after the pandemic and during the lockdown the use of technology was the only means to socialize and interact with friends and families. Visiting was not allowed and this encouraged children to communicate via social media to be connected with their friends."*

Educational work was an argument used by the children to use the technology. It was obvious that children rely mostly on technology for their educational work at school and home. In particular after the pandemic and the transfer of education online made children use the computer or ipad more often than before the pandemic. This led children to rely more on the internet to conduct their school work. The children claim that the effect of their use on the technology will go after a certain time and it will not affect their health. They claim that *"We use it for the schoolwork and the effect will go"*.

Enjoyment was an argument used by the children. to have fun and enjoy playing games with their friends brings joy and happiness to the children . children argued with their parents that stopping to use it will stop having fun. *"You prevent me from doing something I enjoy."*

4.15. What is the help seeking attitude of parents?

General attitudes

This theme reflected the general attitudes that parents exhibited toward the health and support services available for digital addiction in their community and their interactions and experiences seeking help. The results showed that there is a mixture of views toward digital addiction support services. Several parents displayed negative attitudes toward digital addiction support services. As one of the parents stated:

"I have never had any available help resources. I cannot judge the existing things. I think if they do exist, they are not useful".

Another parent pointed out that:

"we did not feel like we need any support from anyone we as parents we talk to her and we can solve the problem"

However, few parents have displayed positive attitudes toward the support services. Parents discussed their knowledge of and prior experiences with help-seeking and reported that having positive experiences made them more likely to know where to seek help in the future. One parent expressed that:

"In Qatar, there is support for behavioral health. Being in the field, I know it, but many people do not know that there are free support services...I advise mothers and I am one of them to use applications such as Instagram, watch Dr. Jassim Al-Mutawa's program, and Somaya Al-Mutawa's talk, which provides sweet content about family ideas, ideas of parenting skills, etc".

Another parent emphasized that: *"We should have more entities focusing on this issue and providing services for families".*

Additionally, some parents indicated that they are unaware of any support services available in Qatar and they rely on their experience, online resources or by discussing it with friends. As declared by one parent:

"I don't have any sources to use now other than an Online search on things related to, they may be based on a different culture. I have not been through any sources of assistance available in the first place in Qatar. I rely on the internet for more information and sometimes discuss the issue with friends". Other parents further said: "I studied education technology for my PhD and I have some experience in this area but I have not heard of any support services in this regard. I have a library subscription and have access to many resources. Schools also have information and resources available". "No, I don't seek help or services, I only search for information about the problem online and try to learn how to deal with it". "I continuously discuss this with my friends and how we can prevent our children from using it too much and always discussing strategies to mitigate and limit the time"

On the other hand, few parents have mentioned that they are aware of some services in Qatar with regards to digital addiction through their work or experience and proved to be successful. Another parent further revealed that:

" last week I spoke with the psychological counselor in my son's school, and I told her that instead of working at home on homework, he spent 4 hours on YouTube and playing PS4, so I was upset. With this topic, she gave me a lot of advice and it was extremely useful. She reassured me that I am not the only one and that there are many people who have more problems. She gave me strategies for how to deal with him and she told me to earn his friendship by talking to him and sticking with him in using the penalties, and these things mean, it was very, very useful".

4.16. What are the COVID-19 related change?

The changes reported by parents related to the following:

Amount of time spent

The COVID-19 epidemic was accompanied by limitations, regulations, and instructions to stay at home. People stayed indoors, offices remained closed, schools and social avenues have been placed on long-time lockdowns, playgrounds remained deserted, and streets remained devoid of human interaction. Isolation and contact restriction impose a

dramatic adjustment in the daily routine of children and adolescents who have spent too much time in front of devices, such as TVs, cellphones, tablets, and laptops. Online activity on children's devices doubled in the early days of the pandemic. Most parents in this study have claimed that their children's use of technology has increased dramatically (too much screen time) during COVID19 pandemic and such an increase of time was seen as by parents as a problematic use that is difficult to control. As one parent stated:

> *"Before the Corona they used to come from school and do their homework and by 7pm they sleep but after corona the amount of time usage was too much as they after finishing schoolwork they watch the YouTube and download games to play, and this takes a lot of time and sleep late".*

Another parent pointed out:

> *"They use digital devices more often with the COVID-19 situation, which makes it harder for the parents to control this use".*

Purposes

The COVID-19 epidemic is taking place in a new technological and social environment, with seemingly unlimited and instant access to internet. Children and adults are becoming increasingly dependent on digital technology, as the COVID-19 pandemic demonstrates. Results from this research have revealed that children excessive use of the digital technology were mainly for the purposes of education (doing school homework and projects), social interaction, and entertainment such as playing games and watching You tube and social media. Almost all parents demonstrated that their children excessive use of technology was for educational purpose such as doing homework, projects, attending online school classes, etc. As one parent stated:

> *"There has been a huge shift in my son's use of technology since COVID-19. He uses the laptop computer so much as it is essential for school. He is attending lessons and doing homework using the computer. However, during breaks he starts to see YouTube videos and I have little control during this time".*

Another parent also mentioned that:

> *"During COVID-19 they used new applications for school such as Zoom and Teams which is a good thing, but it made them spend more time on the computer".*

Some parents have pointed out that their children use digital technology for communicating with others and entertainment like playing games and watching YouTube and social media. As one parent stated:

> *"In general, time has increased. This was the only way to study during the Corona period, I mean, not only studying, even social life, everything, these devices were the only interface for studying, social relations, and everything".*

Other parents further indicated that:

> *"Before corona it was 3-4 hours now, we have the PC for school and the iPad for games. it increased a lot they stay longer hours. In the iPad they watch the Tik Tok, YouTube and games"*

> *"Regarding the use of technology during Covid in which there was no going to school, there is an increase in the amount of usage so that most of my son's day spend it in doing school work and playing games on Play Station , use Instagram , Netflix , social media and communicating with his friends".*

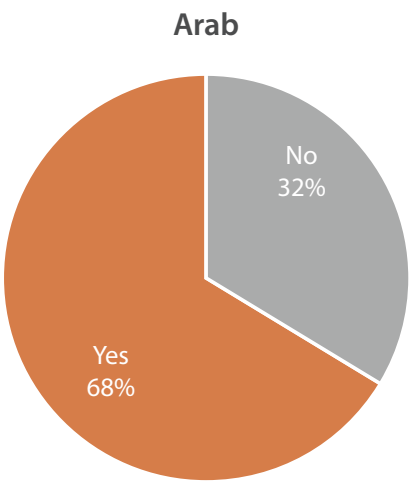
CHAPTER FIVE

QUANTITATIVE STUDY RESULTS

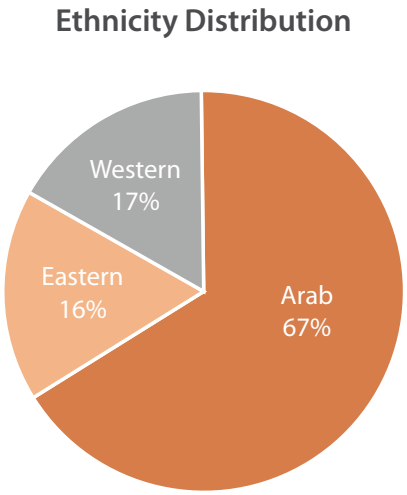
5.1. Demographic Details

Parent Gender and Age. We asked the parents about their age and gender. 174 people answered the question. 32.78% of the survey were filled by fathers, and 66.85% were filled by the mother. The average age of the mothers who filled the survey was 41.82 (Minimum: 26, Maximum:65) and average age of fathers was 48.19 (Minimum:35 , Maximum: 65)

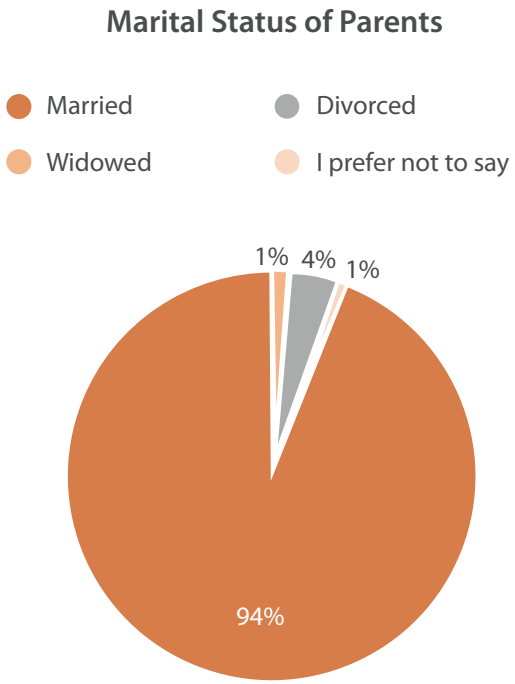
Nationality/ Ethnicity. 174 people shared details about their nationality and ethnicity. Among the survey takers, 36 % were Qatari citizens and 64% were not Qatari citizens. Among the parents who participated in our study, 68 % were Arabs and 32% were non-Arabs.



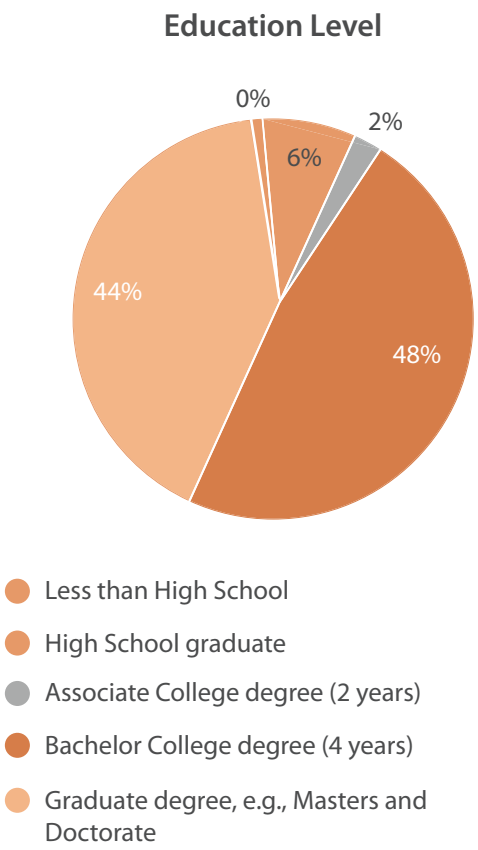
About 67 % of the parents who took the survey were from Arab countries, 17% from Western countries such as UK and Canada, while 16% were from Eastern countries such as India, Pakistan and Iran. Of the Arabs, 36 % were Qatari citizens and 64% were not Qatari citizens.



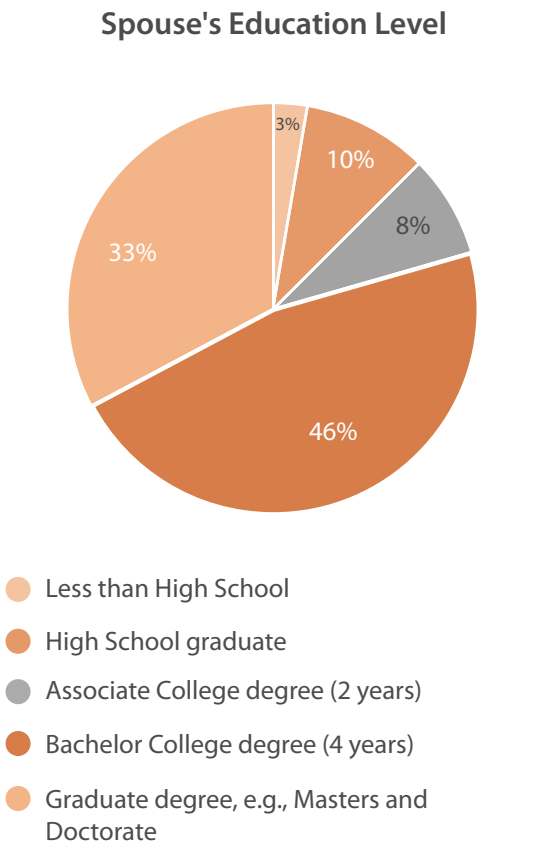
Marital Status. 174 people shared details about their marital status. 94% of the parents were married, 4% were divorced, 1% were widowed, and 1% chose not to answer.



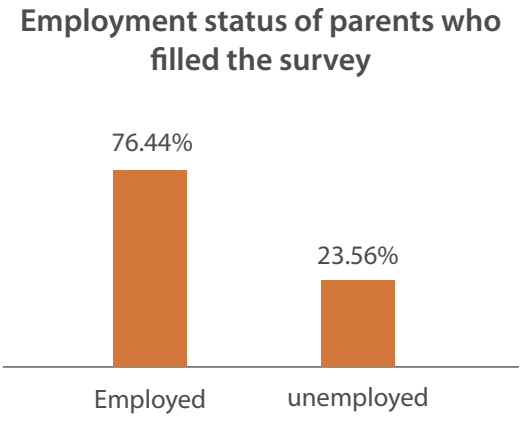
Education Level. We asked the participants about their education level. 174 people answered the question. 48 % had obtained a Bachelor's degree, 44% had obtained a graduate degree, e.g. Master's and Doctorate. 6% of the participants were high school graduates, 2 % had an associate college degree.



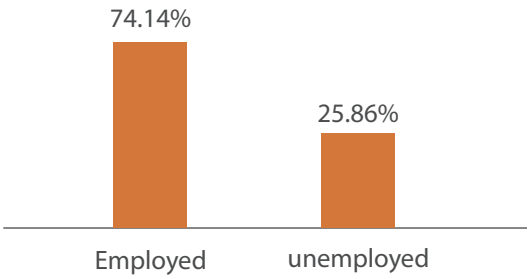
As for the spouse's education level, 46% had a Bachelor's degree, 33% had a graduate degree, 10% were high school graduates, 8% had an associate college degree and 3% had less than high school.



Employment Status. We asked the parents about their employment status. 174 parents responded to this question. parents – 76.44% parents were employed, and 23.56% were unemployed. As for the employment status of the spouses, 74.14% of the spouses were employed and 25.86% were unemployed.

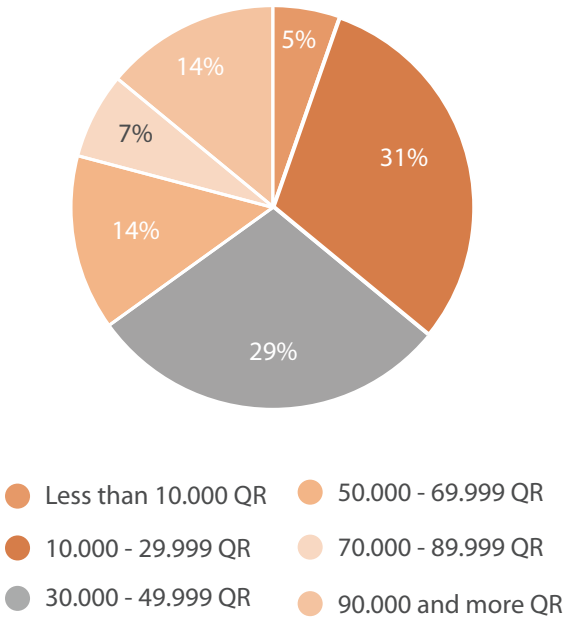


Spouses' Employment



52.87% of the respondents reported that both of the parents were working, 44.83 % had one of the parents working, and 2.30% reported that neither the father nor the mother were working.

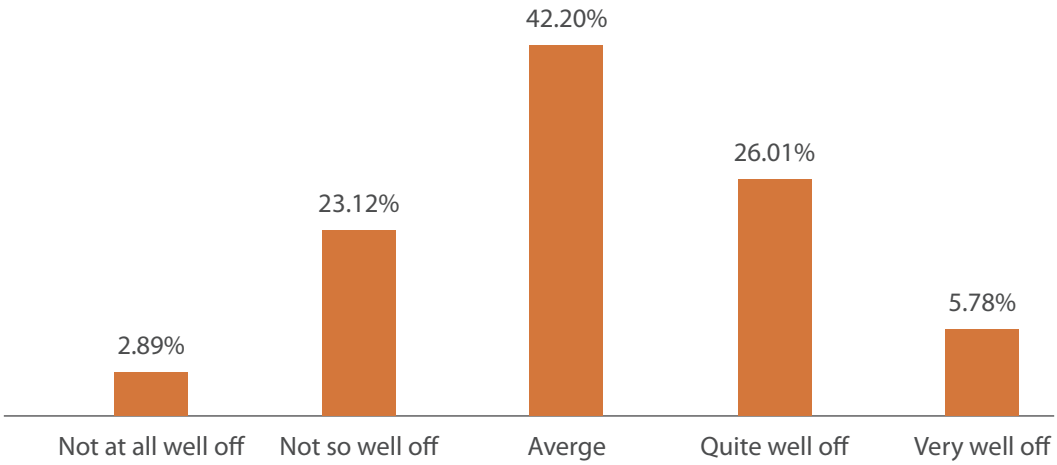
Monthly Income



Monthly Income. We asked the parents about their monthly income. 173 answered the question. The monthly household income of our participants varied from less than 10,000 QAR to 90,000 QAR. 31% of our participants earned between 10,000-29,999 QAR, 29 % of our participants earned between 30,000 – 49,999 QAR. About 14% of the participants earned between 50,000 – 69,999 QAR, 14 % earned above 90,000 QAR and 7 % of the participants earned between 70,000 QAR – 89,999 QAR. About 5 % of the participants earned less than 10,000 QAR per month

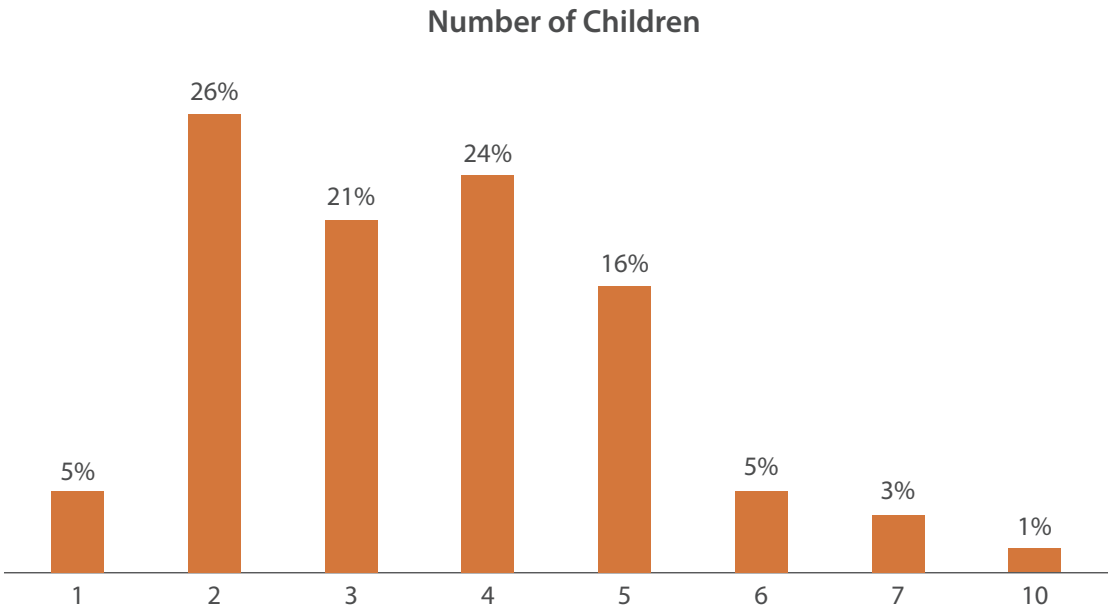
We then asked the participants of the study how well off their family was. 173 answered the question. 42.20 % responded that they lead an average life, 26.01% said they were quite well off and 5.78% said very well off. 23.12 % reported that they were not so well off, and 2.89% reported that they were not at all well off.

How well off the family is

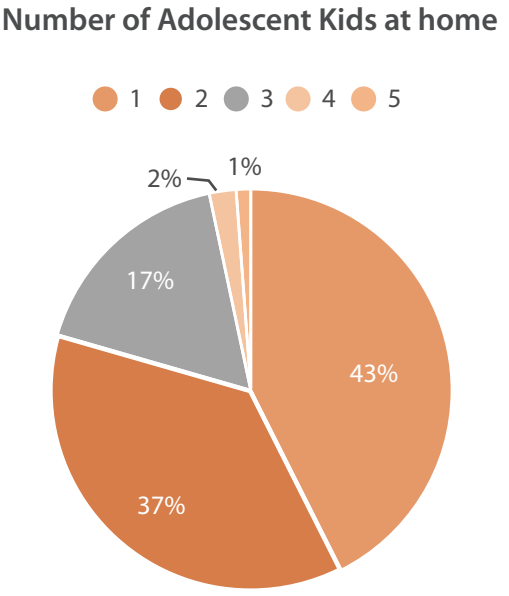


5.2 Adolscents and Technology Usage.

Children at home. We asked the participants how many kids they had. 173 people answered the question. 26% of the survey respondents had 2 children, 24% had 4 children, 21% had 3 children, 16% had 5 children, 5% had 6 children, 5% had 1 child, 3% had 7 children and 1% had 10 children.



Adoloscent Kids at Home. We asked the parents about how many adolescent kids they had at home. 173 parents responded to this question. 43% of the parents had 1 adolescent child at home, 37% had 2 adolescent children at home, 17% had 3 adoloscent children at home, 2% had 4 adoloscent children at home, and 1 % had 5 adoloscent children at home.



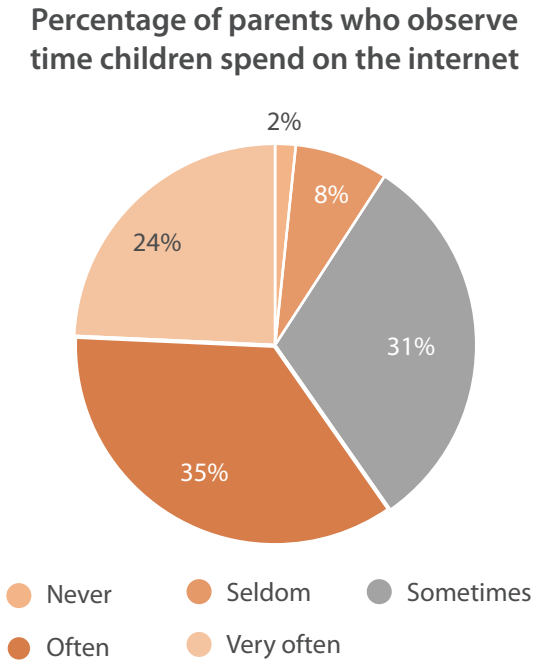
Time Spent on the Internet. We asked parents about the average time that children spent on average on the internet for study and personal development purposes and on other activities during weekdays and weekends.

125 parents answered this question. The below table reports the average time spent on weekdays and weekend based on gender.

Gender	Average Time per day on Weekend on Essential	Average Time per Weekday on Essential	Average Time per Weekday on Non-Essential	Average Time per day on Weekend on Non-Essential
Female	2.46	5.5	3.78	5.23
Male	2.35	5.35	4.13	5.197

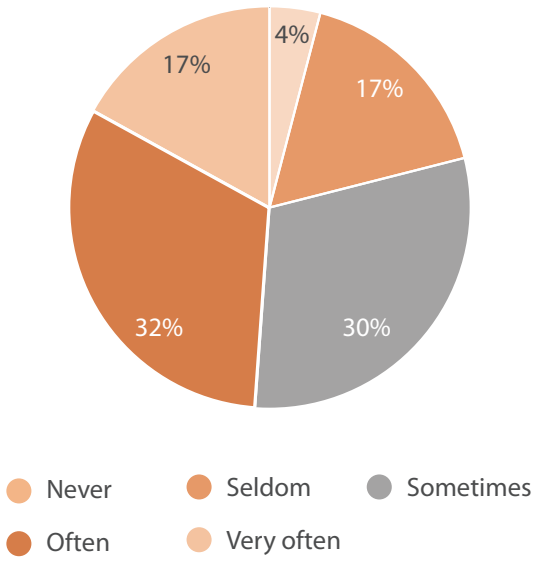
Monitoring Children's Internet Use and Activities

We asked parents on how often they monitor the time children spent on the internet. 125 parents responded to this question. 2% answered that they never observed the time children spent on the Internet. 8 % seldom observed, 31% observed sometimes, 35% observed often, and 24% observed very often.



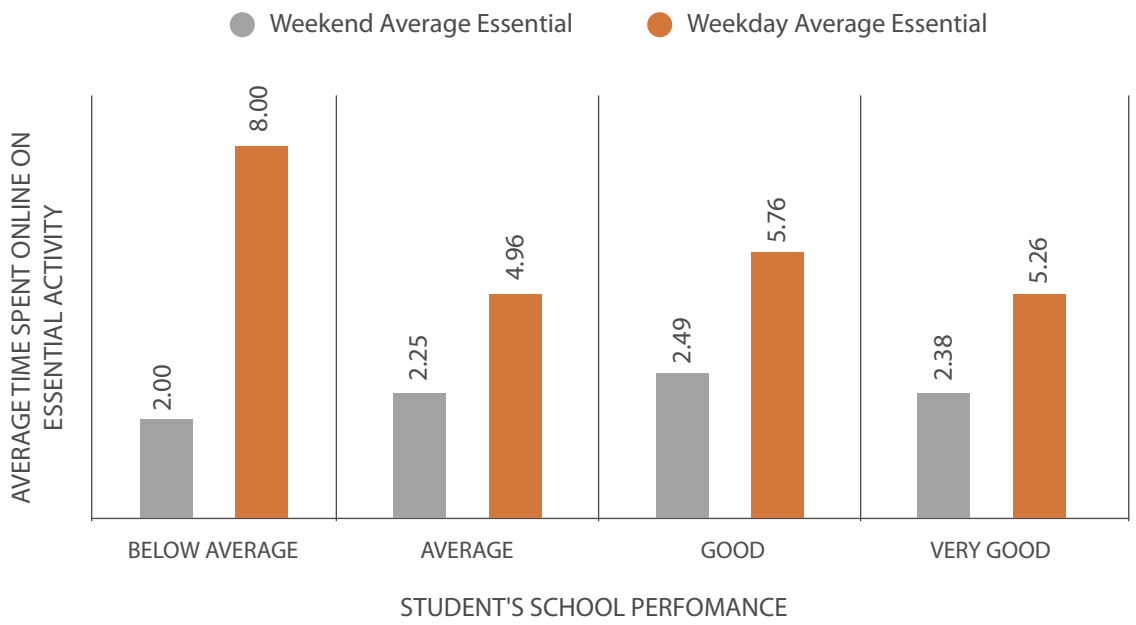
We asked parents on how often they monitored the activity of the children on the internet. 125 parents responded to this question. 4% answered that they never observed their children's activity on the Internet. 17 % seldom observed, 30% observed sometimes, 32% observed often, and 17% observed very often.

Percentage of Parents who observe children's activity on the Internet

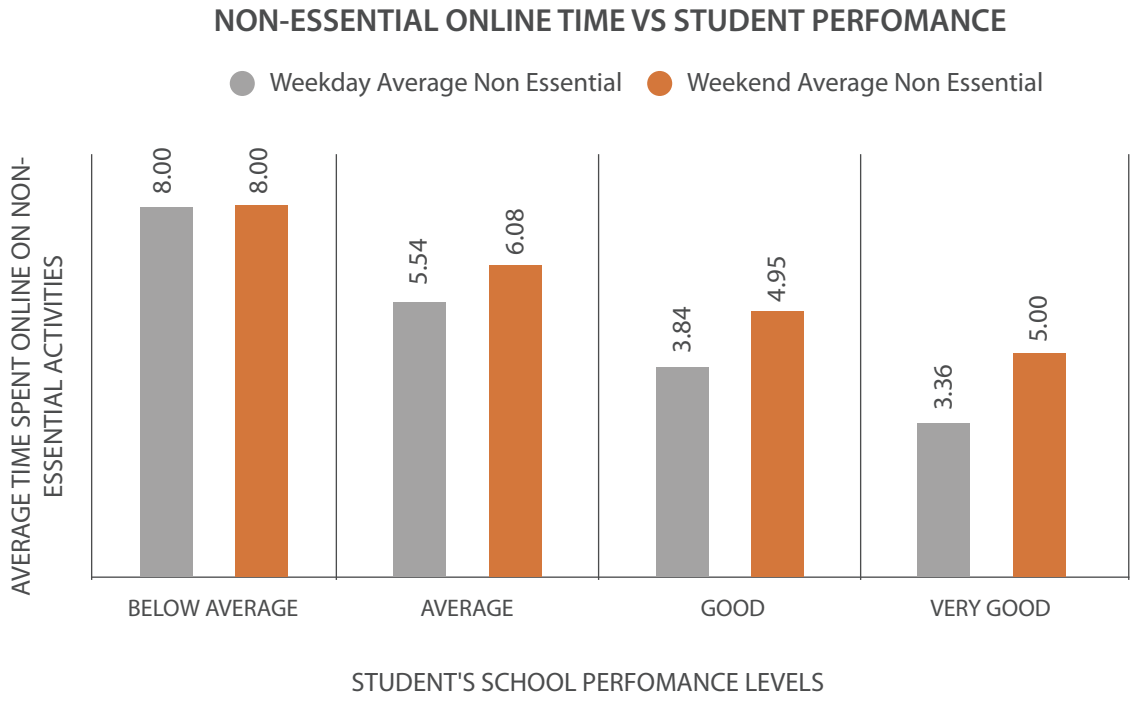


Students perfomance based on time spent on the Internet. The following figure show the amount of hours spent on the internet during the weekday and weekend on essential and personal development activities against each level of educational perfomance as reported by parents.

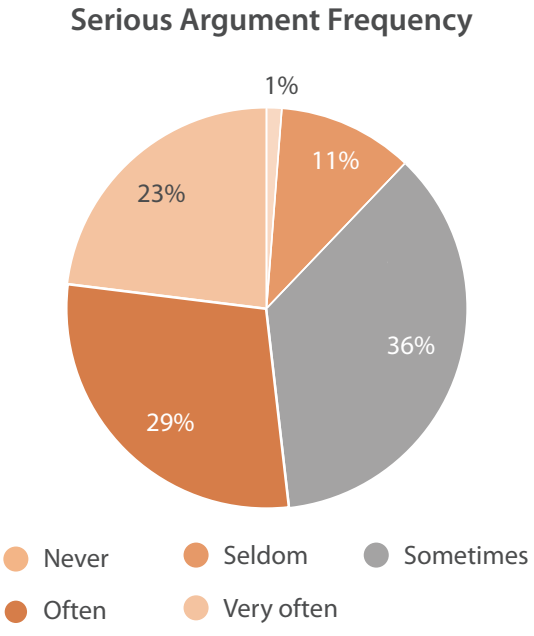
ESSENTIAL ACTIVITIES ONLINE TIME VS STUDENT PERFOMANCE



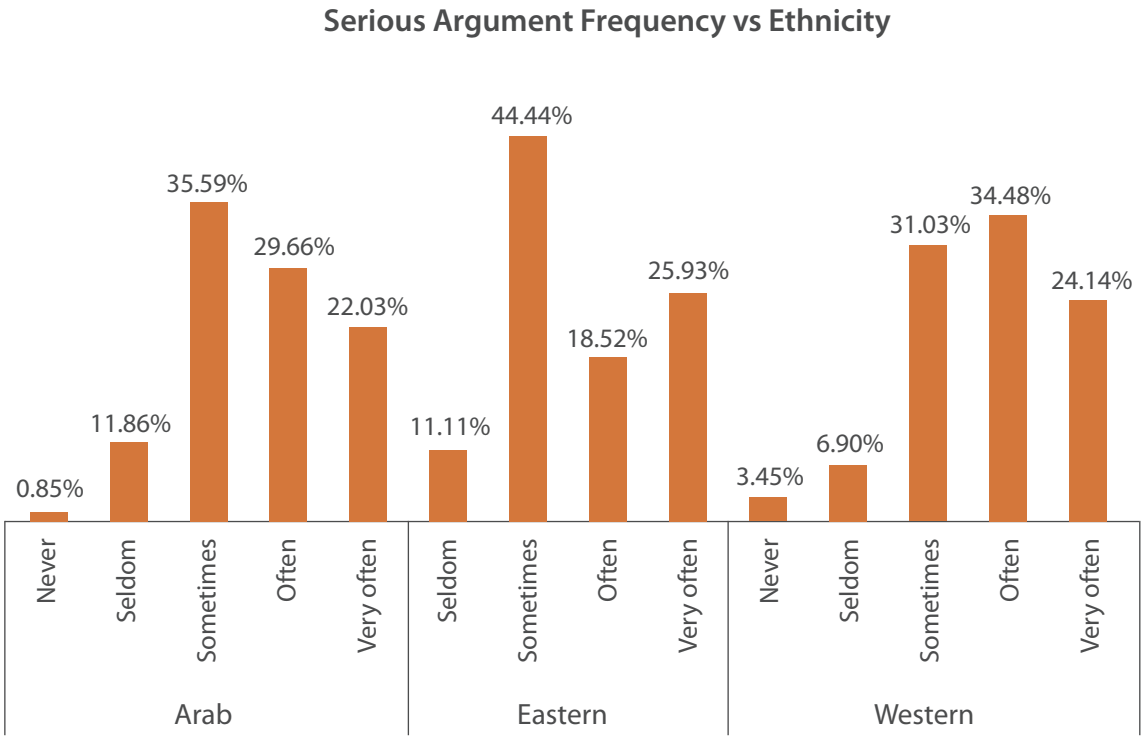
The following figure show the amount of hours spent on the internet during the weekday and weekend on non-essential activities against each level of educational perfomance as reported by parents.



Arguments on excessive Internet Use. We asked the parents on how often they had serious arguments with their child on excessive internet use. 173 parents responded to this question. 36 % of the parents said they had serious argument with their kids on internet use sometimes. 29 % reported that they had serious arguments often, and 23% had serious arguments very often. 11% said they seldom had serious arguments and 1% reported that they never have serious arguments with their kids when it comes to internet use.



The following table shows the frequency of serious argument on excessive internet use with the ethnicity of the parents



5.3 Internet Addiction Test

Since internet use has grown primarily into an integral or required component of human life, diagnosing Internet addiction is sometimes more challenging than diagnosing substance addiction. Young - Internet Addiction Test Questionnaire (IAT) is a trustworthy measure that captures the essential aspects of problematic Internet usage (Young & Abreu, 2010). Parents were asked to fill in the answers to the questions from IAT about their own non essential Internet Use. Furthermore, parents were asked to fill in the questions on the Parental Assessment of Adolescent Problematic Internet Use (PYDQ) developed by Wartberg et al. (2016). PYDQ is an appropriate measure for parental assessment of problematic adolescent Internet use.

Below are the IAT and PYDQ questionnaires that were used in our survey.

Young – Internet Addiction Diganostic Questionnaire (IAT)

- **Q1 Parent:** Do you feel preoccupied with the Internet (think about previous online activity or anticipate next online session)?
- **Q2 Parent:** Do you feel the need to use the Internet with increasing amounts of time in order to achieve satisfaction?
- **Q3 Parent:** Have you repeatedly made unsuccessful efforts to control, cut back, or stop Internet use?
- **Q4 Parent:** Do you feel restless, moody, depressed, or irritable when attempting to cut down or stop Internet use?
- **Q5 Parent:** Do you stay online longer than originally intended?
- **Q6 Parent:** Have you jeopardized or risked the loss of significant relationship, job, educational or career opportunity because of the Internet?
- **Q7 Parent:** Have you lied to family members, therapist, or others to conceal the extent of involvement with the Internet?
- **Q8 Parent:** Do you use the Internet as a way of escaping from problems or of relieving a dysphoric mood (e.g., feelings of helplessness, guilt, anxiety, depression)?

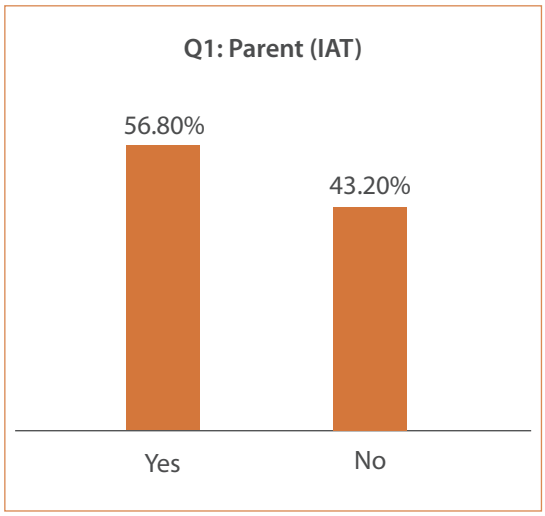
Parental version of the Young Diagnostic Questionnaire (PYDQ)

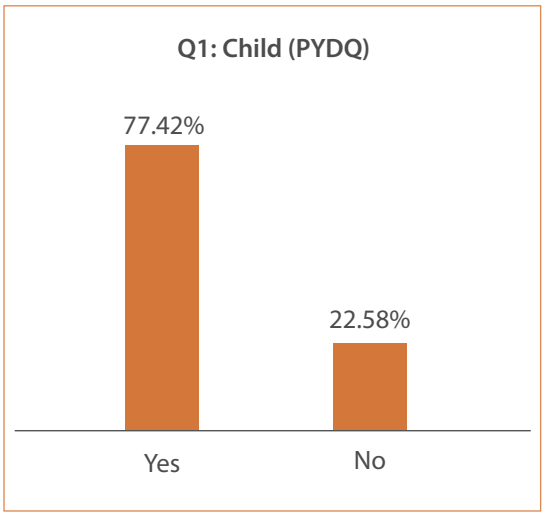
- **Q1 Child:** Does your child feel preoccupied with the Internet (think about a previous online activity or anticipate the next online session)?
- **Q2 Child:** Does your child feel the need to use the Internet with increasing amounts of time in order to achieve satisfaction?
- **Q3 Child:** Has your child repeatedly made unsuccessful efforts to control, cut back, or stop Internet use?
- **Q4 Child:** Does your child feel restless, moody, depressed, or irritable when attempting to cut down or stop Internet use?
- **Q5 Child:** Does your child stay online longer than originally intended?
- **Q6 Child:** Has your child jeopardized or risked the loss of a significant relationship, job, educational, or career opportunity because of the Internet?
- **Q7 Child:** Has your child lied to family members, a therapist, or others to conceal the extent of involvement with the Internet?
- **Q8 Child:** Does your child use the Internet as a way of escaping from problems or of relieving a dysphoric mood (e.g., feelings of helplessness, guilt, anxiety, depression)?

The criteria of problematic Internet use assessed by the IAT and the PYDQ are: "preoccupation" (Q1), "tolerance" (Q2), "loss of control" (Q3 and Q5), "withdrawal" (Q4), "risk/ lose relationships/ opportunities" (Q6), "lies to conceal extent of involvement" (Q7), and "dysfunctional coping" (Q8) (Strittmatter et al., 2014).

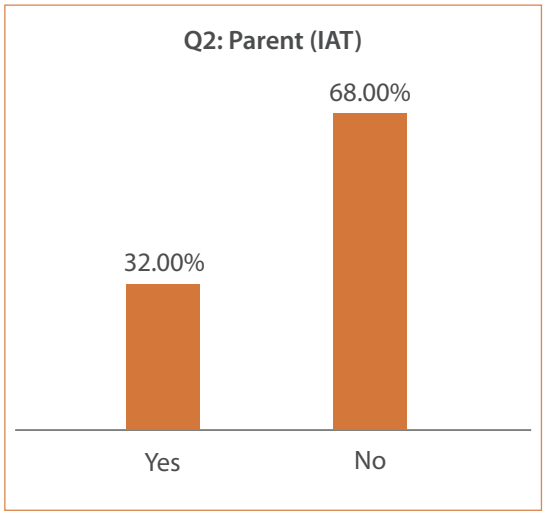
Breakdown of each criterion: for Parents (IAT) and Children (PYDQ)

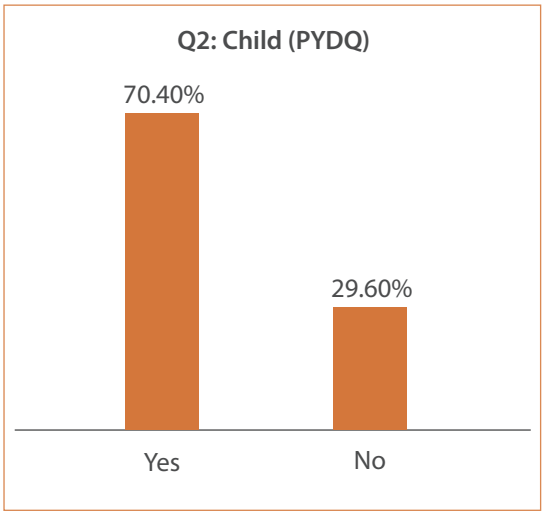
Criteria 1: Preoccupation



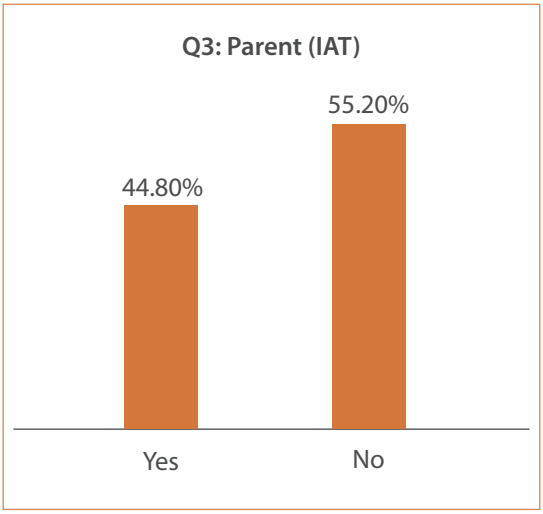


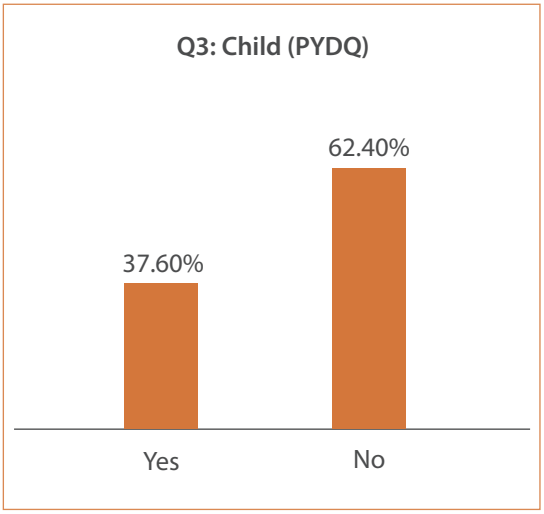
Criteria 2: Tolerance



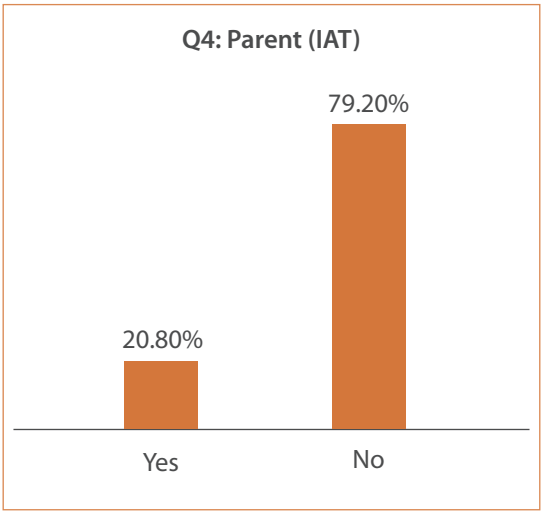


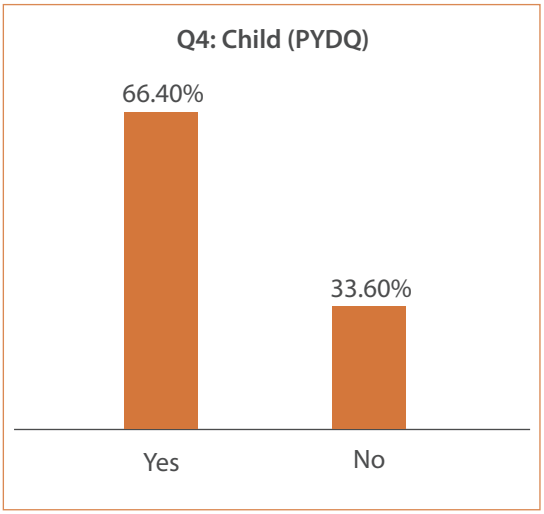
Criteria 3: Loss of Control



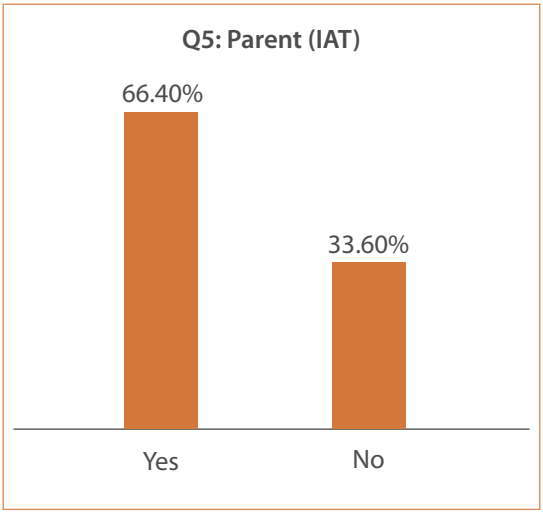


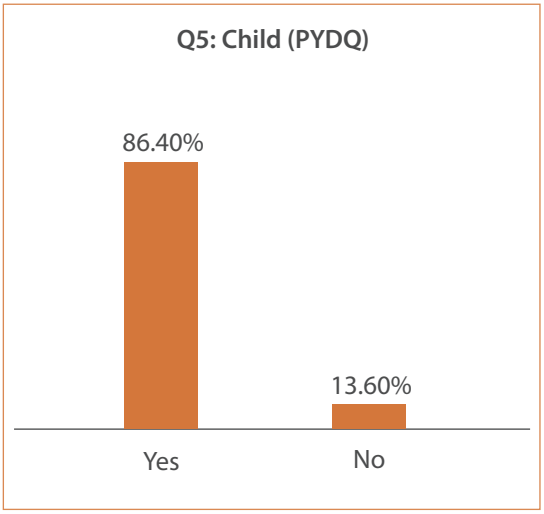
Criteria 4: Withdrawal



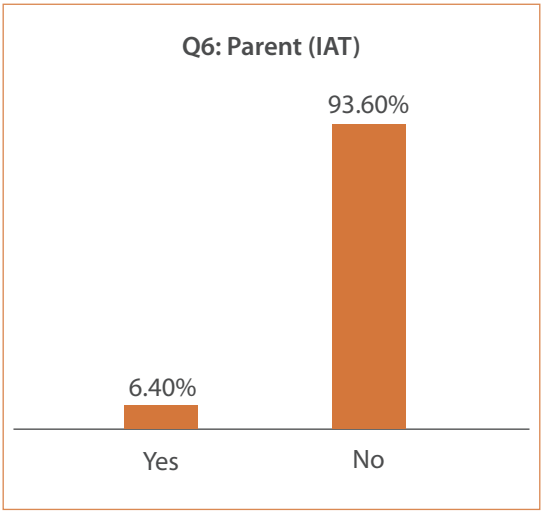


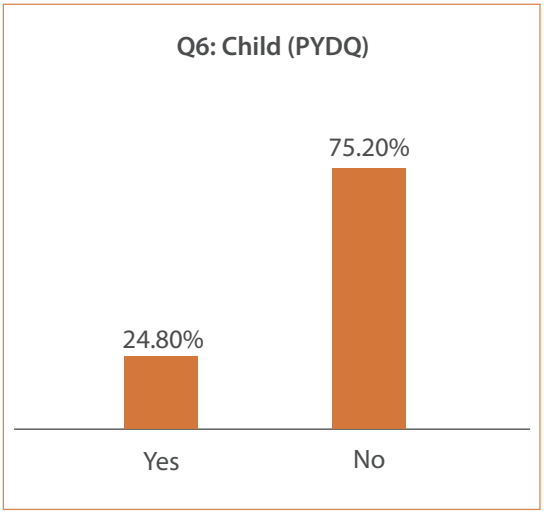
Criteria 5: Loss of Control



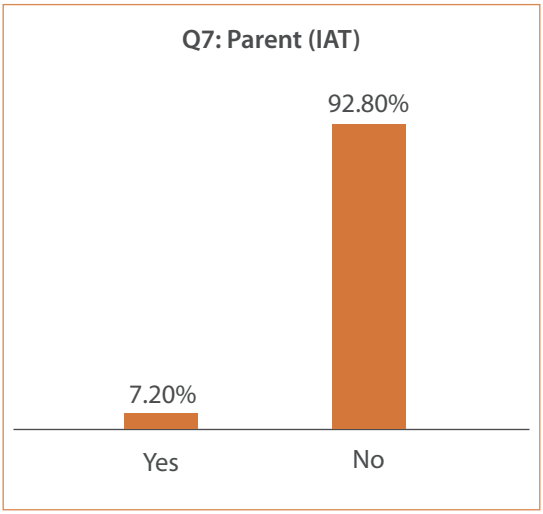


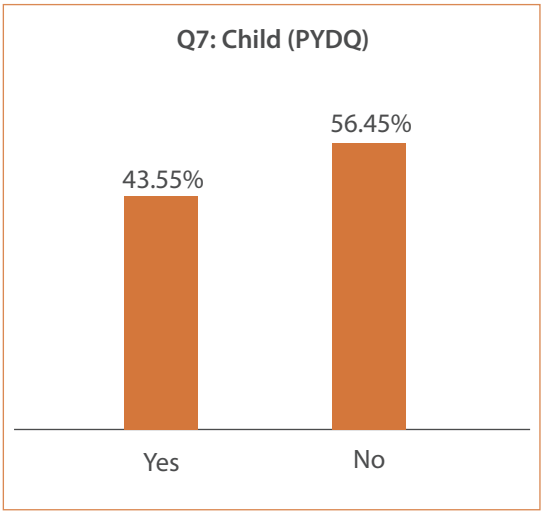
Criteria 6: Rise/ Lose relationships/opportunities



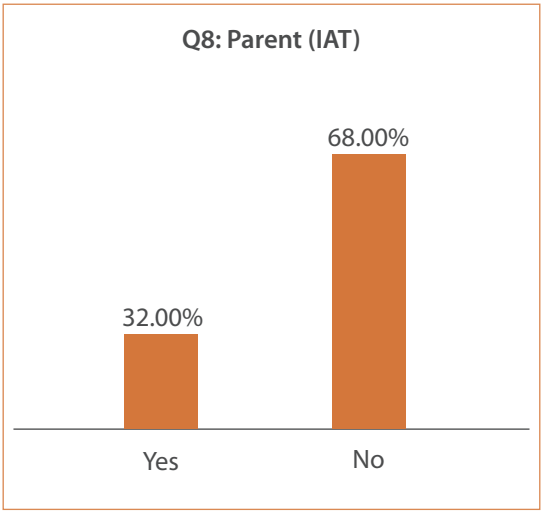


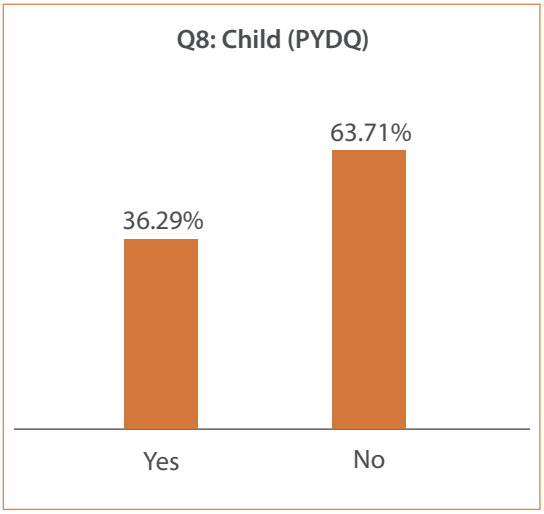
Criteria 7: lies to conceal extent of involvement



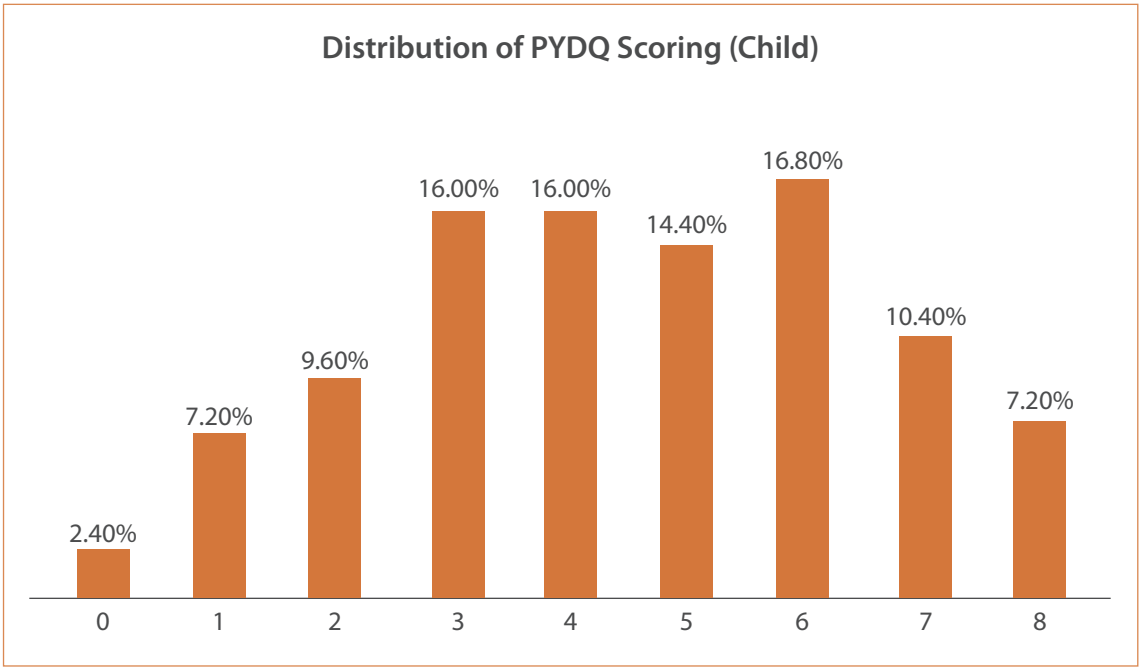


Criteria 8: dysfunctional coping

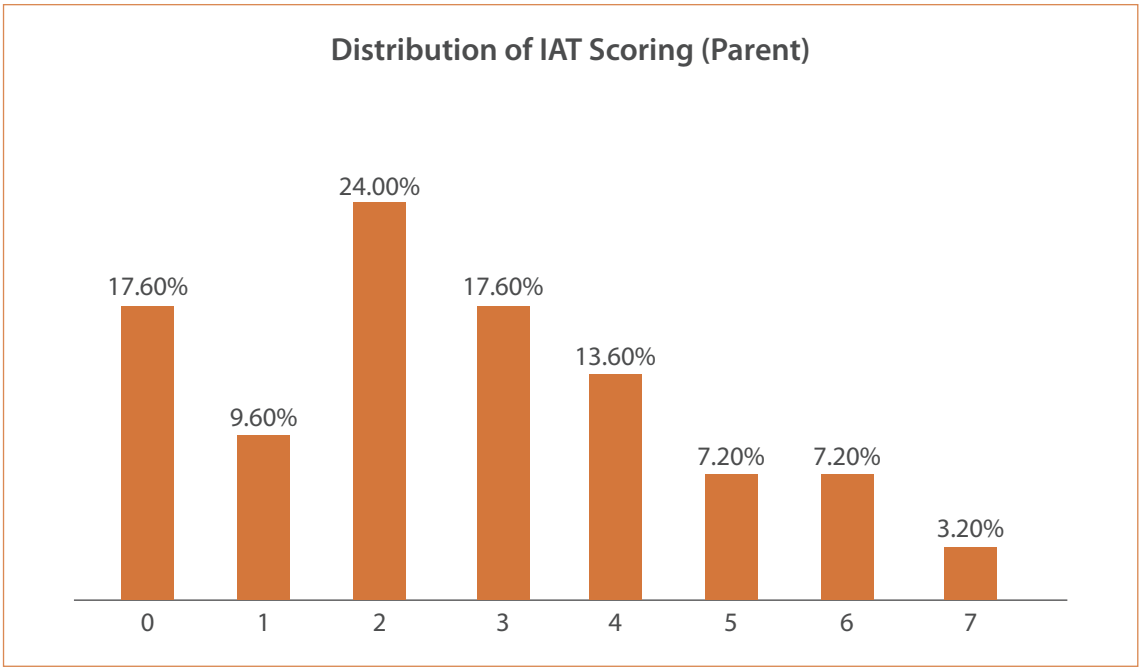




Following was the overall distribution of the score for the Internet Addiction Test for PYDQ and IAT respectively. 0-8 indicate the number of questions to which the users answered yes in the questionnaire



A PYDQ total score (range: 0 to 8) was produced by adding the values of all eight questionnaire questions, with a greater sum indicating higher risk levels of adolescent problematic Internet usage (Wartberg et al., 2017).



According to Durkee et al. (2012), subjects can be classified 'dependent' if they answered yes to five or more of the questions on IAT and 'at-risk' if they answered yes to three to four questions on the IAT.

The PYDQ assesses problematic Internet use in adolescents from the perspective of parents. The YDQ instrument's substance has not changed, however all eight items of the original YDQ have been reworded (S. Young, 1998b). According to S. Young (1998) participants who answered "yes" to five or more of the questions on the YDQ were dependent Internet users and the rest were classified as nondependent Internet Users.

Beard & Wolf (2001) amended Young's Internet Addiction diagnostic criteria further, advocating that all of the first five criteria for (IAT) be necessary for diagnosis of Internet addiction, because these criteria might be satisfied without impairing the person's everyday functioning. It was also suggested that in order to diagnose Internet addiction, at least one of the last three criteria (e.g., criteria Q6 : Parent, Q7: Parent, and Q8: Parent) be met. The last three criteria were separated from the others because they impact the pathological Internet user's ability to cope and function (representing depressed, anxious, and escaping issues, respectively), as well as interaction with others (e.g., significant relationships, jobs, being dishonest with others).

Awareness on solutions for resolving internet addiction in Qatar

We asked the parents if they knew of any sources of services or help information that could help them in dealing with the issue of excessive internet usage.174 parents answered the question. 98.28 % of the parents were not aware of any local services that could help them to deal with the issue of excessive internet usage in Qatar. 1.72% shared local services that could help provide support in this area. Among the local resources mentioned were Behavioral health support center (DAAM), Protection and Social Rehabilitation Center (AMAN), and The Family Consulting Center (Wifaq)

POLICY IMPLICATIONS

CHAPTER SIX

Our analysis of the data is still ongoing. Themes which became more apparent in the qualitative analysis and our preliminary analysis of the survey data suggest various direction for policy recommendations. This is to be refined and studied in more details in the next period of the project. Main directions for policy investigation include:

- Technological solutions: despite the availability of parental control tools, it seems parents are in need for more sophisticated tools. This stem from various reasons including the mixed use of technology for both learning and personal development and legitimate entertainment on one hand, and what is seen excessive and unjustified use on the other. the separation of the two is hard. This raises the question whether we shall have solutions based on enabling different accounts on the same device each with different permissions about usage style. For example, YouTube use can be for both reasons. There is also tendency or having adverse effects of kids trying to find workaround and refuse to do their other necessary tasks if banned from accessing technology. This also calls to a more innovating approaches on how to integrate limit setting and plans more seamlessly in the devices.
- Age appropriateness: related to the previous point, with the proliferation of applications and sites, it seems it is very challenging for parents to judge a content for being age appropriate and whether spending time on it may, eventually, lead to adverse effect. For example, while spending some time on Instagram may be an entertainment method, relying on it to raise self-esteem and self-validate can become a problematic issue. Similarly, kids may claim some games and applications can increase productivity and creativity and parents may not have a compelling answer to that. This calls for further research whether claims made by some of the sites and apps are true in reality, e.g. games claiming increasing creative thinking.
- Collective handling: when asked about the responsibility for the issue, parents mentioned a few reasons including the need for a central intervention from telcommunications providers, schools and also tech developers. They also mentioned that their kids excessive use is also because of other kids' pressure on them to be online. This means that strategies may not be applicable at the level of household and may require a nationwide initiative.
- Providing creative solutions: most parents pointed out to the issue of technology becoming the most accessible and perhaps the cheapest option for kids to spend time. This can be due to the lifestyle resulted from Covid. Still, creative solutions can be thought including cyber-physical activities blending technology use with physical activities. Games requiring kids to do physical activities and do offline activities as a way to get rewards.
- Care services: parents in both the interviews and the survey did not seem to recognize the existence of care services with regards to dealing with their kids' excessive technology usage. Attitude towards them was not always positive for various reasons including the doubt about the usefulness and also cost-effectiveness of it. While we still need t oanalyse the interviews with practitioners and care providers in Qatar, this may still raise a point about whether the programs are specialized enough to deal with the issue and has effective outreach programs to persuade parents of seeking help.
- Education: parents tend to recognize that dialogues based on convincing is the best way to deal with the issue. However, it was also noted that the dialogue is mostly related to limit setting and to agreement about general terms of use without delving to the details on why technology overuse can be harmful. It does seem that literacy about basic psychological concepts and how they manifest themselves in the cyber space would be needed for both parents and adolescents.

CHAPTER SEVEN

In this interim report, we have presented the initial results of our data collected mainly from parents of adolescent kids in Qatar whether qualitatively, through the interview, or quantitatively, through a survey. results clearly showed that the issue is widespread and that parents need help with it. the data also showed that the issue is also in parents and correlated positively with it in their adolescent kids calling for a consideration of it as a family lifestyle issue before being considered as an adolescence issue. The results also highlighted an increasing recognition of the need for persuasive and convincing approaches to deal with adolescents about the problem yet without much ability to create a critical anlysis of it, e.g. the reasons why one should limit their usage or the best style of use. Covid has also brought challenges to what we consider excessive and problematic use as it blended study time with family time especially at the times where student had to do remote learning. The results show the need to deal with the issue in a more integrate style where education, health and communication sector support families in having a balance between technology use and their other activities that maintain bonding and coherence amongst themselves.

PARTNER ORGANIZATIONS

WISE was established by Qatar Foundation in 2009 under the leadership of its Chairperson, Her Highness Sheikha Moza bint Nasser. WISE is an international, multi-sectoral platform for creative, evidence-based thinking, debate, and purposeful action toward building the future of education. Through the biennial summit, collaborative research and a range of on-going programs, WISE is a global reference in new approaches to education. The WISE Research series, produced in collaboration with experts from around the world, addresses key education issues that are globally relevant and reflect the priorities of the Qatar National Research Strategy. Presenting the latest knowledge, these comprehensive reports examine a range of education challenges faced in diverse contexts around the globe, offering action-oriented recommendations and policy guidance for all education stakeholders. Past WISE Research publications have addressed issues of access, quality, financing, teacher training, school systems leadership, education in conflict areas, entrepreneurship, early-childhood education, and twenty-first century skills.

The Doha International Family Institute (DIFI), a member of Qatar Foundation for Education, Science and Community Development (QF), was established in 2006. The Institute works to strengthen the family through the development and dissemination of high-quality research on Arab families, encouraging knowledge exchange on issues relevant to the family and making the family a priority to policy-makers through advocacy and outreach at the national, regional and international levels. Among the Institute's most important initiatives is the Annual Conference on the Family; and the OSRA Research Grant in collaboration with the Qatar National Research Fund, an annual research grant which encourages research related to the Arab family and family policy. The Institute has special consultative status with United Nations Economic and Social Council.

"The World Innovation Summit for Health (WISH) is a global healthcare community dedicated to capturing and disseminating the best evidence-based ideas and practices. WISH is an initiative of Qatar Foundation for Education, Science and Community Development (QF) and is under the patronage of Her Highness Sheikha Moza bint Nasser, its Chairperson. The inaugural WISH Summit took place in Doha in 2013 and convened more than 1,000 global healthcare leaders. Through international summits and a range of ongoing initiatives, WISH is creating a global community of leading Innovators in healthcare policy, research, and industry. Together, they are harnessing the power of innovation to overcome the world's most urgent healthcare challenges and inspire other stakeholders to action".

Hamad Bin Khalifa University, a member of Qatar Foundation, was founded in 2010 as a research-intensive university that acts as a catalyst for transformative change in Qatar and the region while having global impact. Located within Education City, HBKU seeks to provide unparalleled opportunities where inquiry and discovery are integral to teaching and learning at all levels utilizing a multidisciplinary approach across all focus areas. HBKU is committed to actively contribute to achieving the Qatar National Vision 2030 by building and cultivating human capacity through an enriching academic experience and an innovative research ecosystem. Through applying creativity to knowledge, students will have the opportunity to discover innovative solutions that are locally relevant and have a global impact.

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