



Cyber Risks Awaiting Children and Young People in the 21st Century

21. Yüzyılda Çocukları ve Gençleri Bekleyen Siber Riskler

© Seda Donat Bacıoğlu

Trakya University Faculty of Education, Edirne, Turkey

ABSTRACT

Nowadays, with the rapid development of information and communication technologies, smart phones, tablets, computers and the Internet, which are defined as digital media tools, have become indispensable and essential tools in our daily life practices. Children and young people have adapted themselves to this digitalization period more quickly than adults, and perform a high level of frequency of use. While digitalization offers children and young people a liberating way to expand their learning opportunities, access information, express themselves, maintain social ties with family/friends, it also poses threats coming from the dangerous and dark side of the digital environment. With this article, it is aimed to examine the risks of digital applications for children and young people, what are the cyber risks that result in bullying and victimization, and the effects of exposure to these cyber risks on mental health. Raising the awareness of parents, educators and mental health professionals will contribute to develop and apply the protective and preventive mental health approaches for children and young people.

Keywords: Children, youth, digitalization, cyber risks

ÖZ

Çağımızda bilgi ve iletişim teknolojilerinin hızlı gelişmesiyle birlikte dijital iletişim araçları olarak tanımlanan akıllı telefon, tablet, bilgisayar ve internet günlük yaşamımızın vazgeçilmezleri haline gelmiştir. Çocuk ve gençler, yetişkinlere kıyasla bu dijitalleşmeye daha çabuk uyum sağlayarak kullanım sıklığında yüksek bir seviyeye ulaşmışlardır. Dijitalleşme, çocuk ve gençlere öğrenme fırsatlarını genişletme, bilgiye ulaşma, kendilerini ifade etme, aile/arkadaşlıkla sosyal bağları devam ettirme için özgürleştirici bir yol sunarken, aynı zamanda dijital ortamın tehlikeli ve karanlık tarafıyla da karşı karşıya bırakmaktadır. Bu makale ile dijital uygulamaların çocuk ve gençler için ne tür riskler içerdiğini, bu uygulamalar üzerinden zorbalık ve mağduriyetle sonuçlanan siber risklerin neler olduğunu ve bu risklere maruz kalmanın ruh sağlığına etkilerini incelemek amaçlanmıştır. Makalenin ebeveynler, eğitimciler ve ruh sağlığı uzmanlarının farkındalıklarının artmasına; çocuk ve gençlerin ruh sağlığını koruyucu ve önleyici yaklaşımların geliştirilerek uygulanmasına katkı sağlayacağı düşünülmektedir.

Anahtar sözcükler: Çocuk, genç, dijitalleşme, siber riskler

Introduction

Together with the development of information and communication technologies, global increase in internet use, gradual development of social media, extensive accessibility to mobile devices and the needs for mobile applications have changed the technological ecosystem of both adults and adolescents (Orben 2020, Paat and Markham 2021). Many national and international researches conclude that most of children and adolescents have smart phone and a computer/tablet at home, have access to internet, are online for a few hours a day and almost all of them regularly use social network (Anderson and Jiang 2018, Joshi et al. 2019, Yaman et al. 2020). Studies of digitalization age report that children meet digital tools before the age of 7 and the level of use and access reaches up to 95% between the ages of 9-16 years (Turgut

and Kursun 2020). Researches on the purpose of children and adolescents to use digital media tools indicate sharing photos, playing games, entertaining/ passing time, communicating and getting information (Günlü and Ceyhan 2017, Bilgiz and Peker 2020, Üstündağ, 2020). On the other hand, young people between the ages of 18- 29 years are included in the group with the most common digitalization due to having smart phones and using internet and social network (Facebook, Instagram, etc.) (Joshi et al. 2019). Children's access to digital tools at these early ages, the gradual increase in the time and frequency of their use together with age and further increase in the current rates of access and use together with Covid-19 pandemic concern both parents and educators and psychiatric care personnel, as well.

Statistical reports of pandemic period show that 4.5 billion people worldwide (almost 60% of world population) use the Internet (We

Address for Correspondence: Seda Donat Bacıoğlu, Trakya University Faculty of Education, Edirne, Turkey

E-mail: sedadonatbacioglu@trakya.edu.tr **Received:** 14.03.2021 **Accepted:** 17.06.2021

ORCID ID: 0000-0001-9901-0601

are Social 2020). According to data of January 2020 reports by We Are Social and Hootsuite, with an increase of 4% since January 2019, Turkey has 62.7 million internet users and 54 million social media users. While Facebook, YouTube and WhatsApp are the most frequently used applications, TikTok has become the social media platform with monthly 800 million active users and the highest climb rate in video monitoring. In this report, Turkey is ranked 15 among 46 countries in terms of spending time in social media by the group aged between 16- 64 years. Although current data on internet access and digital communication tools of children aged below sixteen years is limited on national level, researches indicate an increase (Cengiz Saltuk and Erciyes 2020, Erol and Erol 2020, Gökel, 2020). For instance, Yıldız and Bektaş (2021) examined the views of parents regarding the altering spare time activities of children in Covid-19 pandemic period and determined that children usually used smart phones and tablets to surf on social media accounts, watched films on digital platforms like YouTube and Netflix and played games on tablets and smart phones.

Measures and precautions to prevent the spread of COVID-19 (for instance, curfew, social isolation and home quarantines) have not only created social and economic outcomes but also increased the stress, anxiety and depression levels on individuals with the feelings of sorrow, worry, fear, disappointment, anger, guilt, despair, boredom and panic (Banerjee 2020, Islam et al. 2020). During these times of crisis, individuals may be inclined to resort to psychoactive materials and other reinforcing behaviors (gambling, video games, social media, watching pornography, etc.) in order to reduce stress and anxiety and/or ease depressive mood. Using digital technologies have gained importance especially in this period in order to provide flow of information, enable big groups of people to work and study at home, increase social cohesion and provide for the needs like entertainment or shopping. With regard to children and young people, digitalization offers possibilities for widening learning opportunities, rapid access to information and a liberating way for self-expression and maintaining social connections with family/friends (Borca et al. 2015), but at the same time it exposes them to the dark and dangerous side of digital environment (unsafe internet use, for instance) (Cosma et al. 2020). Therefore, the present study aims to examine the risks of these digital applications for children and young people, the types of cyber risks resulting in bullying and victimization and the effect of being exposed to these risks on mental health. Relevant literature is also examined in order to demonstrate the protective and preventive measures for the mental health of children and young people.

Social Media and Its Risks

Social media, also known as social network sites, have become an indispensable part of everyday life of young generation. Even though the age limit to open an account in a social network is determined as 13 years, many children below this age are known to open a social media account. Elmalı (2020) conducted a study on 816 high school students and found that 51.3% of teenagers created a social media account with false or missing information,

33% never changed their password or changed once in one or two years, 33% opened messages in their social network accounts from unknown persons and 33.7% shared social network accounts with their other friends, which all suggest that they are under risk. In identity building process of teenagers, social media brings about online identities through aiming to install the perception “Who I should be” in individuals instead of answering the question “Who am I?” (Özdemir and Yıldırım 2019). The fact that children use of social media as a tool for self-presentation and a place for building identity is effective on their psycho-social development. Unreal virtual identities may cause identity confusions in teenagers since the comments under a post and number of likes cause the identity to rebuild every time (Sütüoğlu 2015). A research examining the self-presentation of primary and elementary school students on Facebook determined that children used self-presentation strategies that exhibited behaviors appreciated in real life, endeared themselves or gave prominence to their beloved traits on Facebook (Ardıç Çobaner 2018). Spending enormous time and effort on self-presentation while trying to build a desired identity on social media, children and teenagers may have trouble in overcoming negative emotions (worry, concern, jealousy, loneliness, disappointment, anger, etc.), have decreased self-esteem, life satisfaction and self-respect, and experience stress, sorrow and depression when their posts or contents do not leave the intended impression on their followers (Appel et al. 2016, Keleş et al. 2020). In conclusion, due to their limited self-regulation capacities and vulnerability to peer pressure, children and teenagers may not avoid the potential negative effects of social media use, which therefore may increase their risk to develop mental disorders (Keleş et al. 2020).

On the other hand, social media can be said to reshape the meaning and dynamics of conventional “friendship” concept and lead to the deterioration of important social norms and physical distance defining human interaction (Hoffmeister 2014). Adding both strangers and acquaintances as “friends” on social media brings about the risk for children and teenagers to meet strangers on virtual platforms, who may not be their peers (Subrahmanyam and Greenfield 2008). Thus, a case occurred in the USA 17 years ago sets a dreadful example of the danger that may come from a “friend” on social media. A victim of rape who was rescued days after she was kidnapped by a stranger she had met on the Internet, Alicia Kozakiewicz stated that “*The stranger you meet on street is not the same with the stranger you meet online. You think you get to know this stranger online after few conversations and he/she becomes no longer a stranger to you. Let alone thinking him of a stranger, I began to think how great deal we have in common*” (Toker 2021). Some court files in Turkey report sexual abuse “by a person who introduced himself as a friend of her brother-in-law and became friends on Facebook” or “as a result of meeting in another city with a friend met online and without informing her parents” (Cihan and Yıldız 2020). It is clear that abusers who create fake accounts and profiles on social media may manipulate and abuse children. The fact that abusers can introduce themselves with a fake id, hide their real identities and do not have to come face to face with victimized children increase

their self-confidence and cause them to act more freely (Çalışkan 2019). Children and teenagers may display risky online behaviors without noticing widespread effect of social media behaviors on real life. For instance, sharing personal information and constant updating location information may endanger personal security and increase the risk of contact with stalkers/ offenders (Henley 2013).

Today, education institutions have integrated themselves into social media in order to attract students, connect with them, found professional networks and popularize online learning (Greenhow and Lewin 2016). However, these opportunities offered by social media do not come without a price; excessive use of social media is proved to cause various sleeping disorders, isolation, obesity, substance abuse, suicidal ideation, anxiety and depression, and problems in adapting to social and academic life (Charles 2019, Keleş et al. 2020). In terms of employment, many employers may scan social media accounts of applicants to get information and may prefer not to employ applicants who publish certain contents (discriminative comments, provocative photos, crime, drug addiction, insults, poor communicative and writing skills, etc.) publicly (Roth et al. 2016).

Digital Games and Video Sharing Applications and Their Risks

Among the most frequently used digital applications used by children and adolescents after social media are games and video sharing applications (YouTube, TikTok, etc.) (Yıldız and Bektaş 2021). Neurobiological approaches to understanding video game usage in children have determined that video games cause dopamine (a pleasure transmitter related with addiction) secretion and rapid rewarding is related with higher amounts of dopamine (Schleifer 2018). The appeal of video games for children is more than a reward system that is smartly designed for optimal dopamine “rush” and can be regarded as an attempt to satisfy basic psychological needs of children. Self-Determination Motivation Theory defines three basic psychological needs driving human motivation: (1) competence (the experience of being good at something), (2) autonomy (the sense of selection and control) and (3) connection (being connected and related with others and the sense of belonging) (Cihangir-Çankaya 2009). Children due to their developmental characteristics, may have difficulties in regularly satisfying these three needs. In terms of competence, some children may not be better at general skills (academic skill, for instance); they have so little autonomy since they are subjected to the authorities of adults and they may have difficulties in belonging and harmony in especially puberty (Schleifer 2018). Digital gaming area can be said to provide motivation for children and teenagers through opening a new comfort zone. For instance, Minecraft world not only enables exploring a new world but also allows to create new worlds, which is an explicit example of obtained autonomy; competence also intensifies as structures get more detailed. Within game, children can connect with other players with same ideas and also form groups having mutual commitment and responsibility to create common targets and fulfil them. Also, they may go beyond

playing games with those groups and continue to meet with them on social media or group chat applications. This dynamic can help children feeling excluded blend in (Schleifer 2018). On the other hand, thoughts like “a little bit more” or “once more” repeated continuously may become a problem and cause conflicts between children and parents. In some situations, children may become not only disobedient and disrespectful, but also aggressive since they regard their parents as obstacles before their prizes (Anderson and Bushman 2009, Sussman et al. 2018).

Studies examining the risks included by digital games stress that violent games show violence as a success criterion (getting scores according to the number of kills), desensitize children towards violence through giving them and glorify violating laws, and violence and rude behaviors towards women. The risks also include the perception of sexuality through fashion and images, and normalizing slang language and swearing (Okkay 2019). Uncontrolled violent digital games can threaten mental health through deteriorating anger management (Irmak and Erdoğan 2016). Violent digital games are risk factors for aggression, offensive cognition, and decreased empath and social behavior (Göldağ 2019). Game designs towards reinforcing gender roles (girl games- boy games, for instance) reinforce gender roles through game characters and produce ideal body perceptions. These fake standards of judgement negatively affect nutritional diets or sport habits of children and these artificial perception and gender stereotypes cause self-reliance problems in children (Aytekin 2017). The greatest danger for children and adolescents comes from the games which cannot be legally played or purchased and downloaded with links shared in e-mails or applications like WhatsApp (Blue Whale, Momo, for instance). These kinds of games or videos can communicate and text with their users through applications. As well as having violent contents, they may drive their users to suicide through gradual challenges and tasks (Yücel 2019).

Online purchases, advertisement and instant chat rooms in digital games are suitable environments for cyber bullying acts (Aytekin 2017). Games organizing competitive sport matches, cheating on games, interactive live broadcasted drawing lots, opening booty boxes and purchases to strengthen/enrobe/equip characters and then selling them through bets are among the risks defined as “gambling enriched money making” (Macey and Hamari 2019, Abarbanel and Johnson 2020). These applications in digital games may cause the development of addiction behaviors in children and adolescents through making them spend more time screen. Increase in digital game use results in increase in digital game addicted children who adopt passive life style, suffer from health problems like obesity, have weak social relations and low self-reliance, are withdrawn and cannot fulfil individual or social needs and duties (Hazar et al. 2017).

As well as digital games, video sharing applications have recently become the center of attraction for children and adolescents. One of the most popular one, TikTok attracts young viewers worldwide thanks to its novel, innovative and fast-paced contents. TikTok is commonly used for creating short dance, lip

synchronization, comedy and skill videos (Weimann and Masri 2020). This seemingly innocent video sharing platform is said to be reported due to its content having naked images of children and bullying and harassment of adolescents towards each other, groomers, deceptive algorithms, and lack of privacy (Cox 2018). Its weak security and control caused it to become the magnet for pedophiles, crime, violence and excessiveness (Weimann and Masri 2020). In addition, responsible adults are warned against “challenge” videos rapidly spreading among children and youths in fear of resulting in damages to health or even death. Even though there are not enough researches revealing the effect of this platform on mental health, this kind of platforms can be said to pose risk and danger for children and adolescents.

Cyber Risks Resulting in Bullying and Victimization on Digital Applications

Cyber bullying is the primary online risky behavior most frequently observed among children and adolescents. Many reports reveal that bullying and victimhood, and both bullying/victimhood occur in digital media like social network, chat rooms and instant/short message (Baştürk-Akça and Sayımer 2017, Anderson 2018,). Cyber bullying covers the use of technologies in order to suppress, harass, harm and distress victims (Paat and Markham 2021). Unlike traditional bullying, cyber bullying cannot be limited to different social fields (school, family, etc.), time, place and/or geographical boundaries (Wong-Lo et al. 2011). Researches explain the increasing number of cyber bullying cases with environmental factors (being exposed to violence in media, peer pressure, etc.), individual factors (socializing, family upbringing, etc.) and personal traits (moral disengagement, impulsivity, narcissism, etc.) (Kowalski et al. 2014, Tzani-Pepelasi et al. 2018). In addition, cyber bullying has far-reaching effects on mental health including crime, substance abuse, aggression (Nixon 2014), psychosocial maladaptation, psychiatric disorders, antisocial behaviors, suicidal ideation, self-harm, anxiety, depression and decreased life satisfaction (Quintana-Orts et al. 2020, Skilbred-Fjeld et al. 2020).

Quite similar with cyber bullying, cyberhate can be described as offensive and humiliating texts, speeches, videos and/or images to individuals aimed at their sexual orientations, disability, ethnic origins, religion, immigration or other group characteristics (Wachs and Wright 2021). The difference between two concepts is that cyber bullying is defined as a repetitive activity to harm a person, while cyber hate is based on prejudiced views on different social groups and does not have to be repetitive (Slonje and Smith 2008). Together with recent increasing polarization and radicalization movements in many societies, cyber hate is on the way in becoming a global phenomenon among teenagers in the world (Machackova et al. 2020). There are some evidences showing the rapid increase of hatred contents in the Internet and rapid exposure of teenagers to materials and web sites full of hatred (Hawdon et al. 2019). Oğuz (2018) reported social media channels and YouTube among the medium where children encounter hate speeches most. Comments under videos or posts are the most obvious ones within this context. YouTube is known

to remove 7.8 million videos due to speeches of hatred, swear, humiliation, contempt and insult in the YouTube accounts for children (Oğuz 2018). Moreover, cyberhate traders can present subconsciously harmful materials to children and adolescents using online websites and networks for music, video, game, homework, etc. (Tynes 2006).

Digital applications providing suitable environment for abuse and abusive cyber bullying have significantly changed social interactions of adolescents and young people with their peers, and the development and maintaining of their dating relationships (Baker and Carreño 2016). Cyber dating violence which can also be named as digital perpetration, cyber victimization, online dating harassment or cyber partner abuse can be conceptualized as online spying, controlling, enforcing, harassing and/or stalking behaviors towards dating partners due to commitment issues, anger, jealousy and other negative emotions (Brown and Hegarty 2018). Cyber dating violence behaviors can be exemplified as (not limited with) sending threatening messages to partners, online stalking partners, constantly controlling the accounts of partners, demanding passwords of accounts/phones and monitoring online interactions of partners (Baker and Carreño 2016). There are evidences that sharing photos and videos publicly on social media increases cyber dating victimization. It is reported that the motivations of adolescents sharing contents without consent are generally for fun or they do it as a joke and this state cause revenge emotions and distress in some victims (Walker et al. 2019). Literature has different evidences on gender differences in cyber dating violence. Some studies report both genders show this kind of behavior bi-directionally (male or female) (Zweig et al. 2013, Semenza 2019), while in some studies, males are reported to exhibit sexual abuse behaviors on cyber medium at higher rates than females (Zweig et al. 2013). Current evidences suggest that approving beliefs regarding gender roles and interiorizing strict gender scenario depicting women as sexual objects and accepting men as primal offensives are natural risks for cyber perpetration (Reed et al. 2018). Online and offline dating violence follow each other and violence can easily transcend from virtual world to real one (Cava et al. 2020). The results of cyber dating violence are associated with higher depression, anxiety, lack of mutual harmony, low self-esteem and psychological stress in adolescents and young people (Borrajo and Gámez-Guadix 2016, Hancock Keast and Ellis 2017).

Recently, it is striking that adolescents frequently incline towards online dating applications known as “*cyber romanticism*” in order to meet a partner and explore their sexuality. It is a dating style believed to be an effective way to meet a partner and get a date due to the low levels of social branding and presence of free or low-cost dating applications (Vogels 2020). Even though these kinds of applications have open rules for people below the age of 18 years, adolescents use them to make friends and start romantic relationships (Lykens et al. 2019). That electronic environment enables users to make changes to improve their profiles, cover their flaws and leave a positive impression is among the reasons they are preferred to be used. Literature presents evidences that using these kinds of applications can lead sexually transmitted

diseases and negative emotional consequences (depression, anxiety, for instance) (Francisco Luz Nunes Queiroz et al. 2017). The dangers of online dating include betrayal, being forced to sex trafficking, being cyber bullied, discrimination, abuse, getting harmed and being bombarded with rude comments and offensive pictures (Lauckner et al. 2019). In addition, one of its great risks is being exposed to catfishing. Commonly attributed to people who create fake profiles in order to convince someone to romantic relationship, Catfish is a term inspired from the name of Nev Schulman's show in MTV (Berman and Deutsch 2010). Its story is as follows: "Nev, who is aged 24 years and has online romance with an unreal woman named Megan for about a year, goes to Michigan from Colorado to meet Megan only to find a 40 year- old married woman named Angela with two children. After making a documentary titled Catfish out of this experience in 2010, Nev produces a TV program with the same title on MTV" (October 8th, 2010). This kind of fishing can be organized due to boredom, loneliness, insecurities or revenge and/or may include financial abuse as fraud (Vanman 2018). The study conducted by Mosley et al. (2020) on young people between 18- 25 ages showed that adolescents used online dating applications despite their fear of catfishing. Due to insufficiencies of adolescents in cognitive maturation and life experience, they have greater risk to be trapped (Derzakarian 2017). For the ones emotionally investing on imaginary relationships, this may cause loss of reputation, loss of employment and endangering relationships with others, which can be devastating (Koch 2017).

Online dating and social network sites are not only targeted by romance scammers but also by other cyber criminals and scammers exploiting innocent consumers (Ell 2017). Apart from romance scamming, there are also other types of scamming abusing "trust"; scholarship scamming, working and education scamming, contest scamming, acting and modelling scamming, etc. are executed through instilling the hope of receiving great feedbacks if they invest great amounts of money. These kinds of scammers create a fake profile using the stolen photos of a nice or successful person (an attractive model, an engineer working abroad, a military staff recruited in war, for instance) in order to swindle victims (Shaari et al. 2019). In some other scenarios, scammers can first act like having a romantic relationship before asking for money for financing an emergency situation (legal issues, car accidents, hospitalization, funerals of relatives, etc.) or visiting their victims (buying a plane ticket, travelling expenses, etc. (Jhaveri 2015). Scammers may continue to demand financial support until victims realize they are being scammed (Paat and Markham 2021).

Bullies/abusers waiting for an opportunity to attack their unprotected victims can access and harm children and adolescents at their homes using the anonymity of online medium (Peebles 2014). For instance, sextortion (image based sexual abuse) is evaluated as child abuse within the frame of digital sexual offenses and is defined as an act in which a hacker/attacker demands online sexual contents from victim through blackmailing or threatening, produces pornography and /or blackmails victim to disclose intimate images or videos upon rejecting perpetrator's

demands (O'Malley and Holt 2020, Patchin and Hinduja 2020). Sextortion generally occurs via social network sites (Facebook, Instagram, Twitter, for instance), texting applications (Snapchat, for instance) and video chats (Skype, WhatsApp, for instance) however these acts (stripping, for instance), images and videos can be done and obtained through other online communication tools as a result of perpetrators' demands. There may be cases that occur beyond national boundaries and in situations where victims and perpetrators are not in physical interaction and/or victims do not know perpetrator's identity (Wittes et al. 2016). Some cases report obtaining obscene images through effectively hacking computer systems or electronic devices of victims, monitoring online activities of victims and/or accessing routine activities of victims through hacked web cameras without their knowledge (Paat and Mackham 2021). Victims (female or male) are constantly reminded of the results of their disobedience (disclosing disgraceful images and/or sending them to their families, friends, connections, work places or pornography websites) (Finkelhor 2016). This act of crime and psychological terrorism that cause fear, despair, grief, shame and other traumatic effects on victims may be emotionally exhausting and consuming (Wittes et al. 2016). Children and adolescents open to be online sexually abused (grooming) are regraded as an easy hunt and they may not perceive this act as a crime. In cases where perpetrator and victim know each other (a fan, ex-girlfriend/boyfriend, etc.), sextortion may result in forced compromise, unwanted sexual favors, humiliation or revenge (Wolak and Finkelhor 2016). In addition, sextortion may occur in underage individuals in cases where peers threaten to share confidential/naked image (Patchin and Hinduja 2020). Present evidences show that adolescents carry the high risk of being the target of perpetrators when they have cyber security weaknesses and exhibit online risky behaviors including sharing personal information online, adding strangers as friends and not using strong passwords or two-step verification (Henley 2013).

Dating aimed sexting is among sexual online risks. Significant number of adolescents accepts that they have sent or received naked or half naked pictures via text messages (Mori et al. 2020). Sexting can create a large range of emotions from fun, excitement and commitment to vulnerability and shame for senders and receivers (Weisskirch and Delevi 2011, Drouin and Landgraff 2012). In terms of gender, males are known to perceive sexting more positively compared to women who are restricted by social norms (Springston 2017). Many people hope these sexual texts or videos to stay confidential, however there is no guarantee that these explicit items won't change hands. Since any explicit image of a child is accepted as child pornography, underage adolescents involving in sexting may have legal outcomes (Macapagal et al. 2018). Sometimes sexually explicit electronic materials (videos, pictures, sounds, etc.) of ex-partners are distributed without their consent in order for revenge porn (Powell et al. 2019). Due to persistent nature of digital posts, revenge pornography can cause serious effects on victims. Many victims reported to receive undesired accusations and death threats and to face unemployment, shame, branding and the fear to explore their

other naked pictures. Victims are indicated to suffer from mental health breakdowns like post-traumatic stress, depression, anxiety, confidence issues and substance abuse (Bates 2017, Mckinlay and Lavis 2020).

Conclusion and Suggestions

As the applications of digital technologies and the opportunities they offer to users continue to increase, digital media gets more and more included in the lives of young generation. The present study examines the risks of digital applications for children and adolescents, the cyber risks resulted in bullying and victimization through these applications and the effects of being exposed to these risks on mental health. The results suggest that use of digital applications have dangers and risks that may result in bullying and victimization for children and adolescents. All partners responsible for children and adolescents (parents, teachers, schools, mental health experts, policy and law makers, etc.) have liabilities in preventing and interfering in order to protect public mental health. Suggestions for studies in order to create a safe online zone for children and adolescents are as follows:

Suggestions for Parents

Coordination with parents should be achieved to inform parents about online risks and teach them how to make right decisions about their children (Sabella et al. 2013). Schools, teachers and psychological counselors can organize technology workshops in order to inform parents about many critical issues about online interactions like social norms, parental control, privacy settings, blocking and web cam (Wittes et al. 2016).

Parents should be taught to help their children recover from traumas and re-trust digital world through “unprejudiced, unquestioned” listening with healthy communication skills in case of victimization or abuse instead of using a communicative language increasing the shame and guilt of children (Wittes et al. 2016).

Suggestions for Schools

Schools are expected to develop a target and policy in order to prevent various cyber risks commonly encountered by children and adolescents in 21st century. Especially psychological counselors in schools should be educated on common effects of these cyber risks. School administrators, teachers and psychological counselors can consider giving digital literacy educations and applying a comprehensive healthy relationship program aiming for school students to develop healthy relationships that do not involve online abuse (Van Ouytsel et al. 2016). In addition, school administrators should be encouraged to create a learning environment stressing empathy, facilitating trust and supporting open communication in school/campus. Students should be encouraged to report cyber bullying and regularly informed about internet safety tips (recording evidence, blocking, monitoring), online communication responsibilities and taking preventive measures for self-protection.

According to Miller, Jones and McCauley (2018), viewer behavior programs (education of adolescent leaders in order to effectively help risks reduce and provide positive outcomes) among preventive and early intervention measures and programs aiming to change gender perception are reported to be effective in decreasing dating violence. Mental health experts working with children and adolescents can create extended support groups and work with adolescents who are victimized following online trauma or witness victimization.

Suggestions for Policy/Law Makers

Law makers and law enforcement officers have to keep up with the developments of digital technologies in order to ensure sufficient control mechanism on digital crimes. In order to increase the awareness of people about this common concern and effectively fight against technology mediated crime and abuse, data on the frequency of online crimes reported to and prosecuted by legal authorities are demanded to be published (Wittes et al. 2016). Politicians should take an active role in developing a consensus and consistency on legal definitions regarding how to prosecute cybercrimes.

Suggestions for Psychology Experts

In order to treat cognitive, socio-emotional and behavioral problems occurred as a result of digitalization, psychological experts should develop their professional competences. In addition, units serving to overcome digital addictions should be founded in hospitals and family health centers, and all these centers should include sufficient number of psychology experts.

The last but not the least, further studies should be conducted on cyber risks threatening children and adolescents in national sample group and their effects on psychological health; evidence-based preventive and intervention programs developed from the results of those studies are suggested to be effective in future.

Authors Contributions: *The authors attest that she has made an important scientific contribution to the study and has assisted with the drafting or revising of the manuscript.*

Peer-review: *Externally peer-reviewed.*

Conflict of Interest: *No conflict of interest was declared by the authors.*

Financial Disclosure: *The authors declared that this study has received no financial support.*

References

- Abarbanel B, Johnson MR (2020) Gambling engagement mechanisms in Twitch live streaming. *Int Gamb Stud*, 20:393-413.
- Anderson J, Rainie L (2018) *The Future of Well-Being in a Tech-Saturated World*. Washington DC, Pew Research Center
- Anderson M (2018) *A Majority of Teens Have Experienced Some Form of Cyberbullying*. Washington DC, Pew Research Center.
- Appel H, Gerlach AL, Crusius J (2016) The interplay between Facebook use, social comparison, envy, and depression. *Curr Opin Psychol*, 9:44-49.
- Ardıç Çobaner A (2018) Facebook'ta çocuk benliğinin sunumu: Çocukların Facebook profil ve paylaşımları üzerine bir analiz. *Uluslararası Dijital Çağda*

İletişim Sempozyumu. 18-19 Ekim, Mersin, Türkiye. Kongre Özet Kitabı sayfa 21.

Aytekin G. (2017) Dijital oyunlar ve bireyler üzerindeki etkileri. Available from <https://www.guvenliweb.org.tr/blog-detay/dijital-oyunlar-ve-bireyler-uzerindeki-etkileri> (Accessed 13.03.2021).

Baker CK, Carreño PK (2016) Understanding the role of technology in adolescent dating and dating violence. *J Child Fam Stud*, 25:308–320.

Baştürk Akça E, Sayımer İ (2017) Siber zorbalık kavramı, türleri ve ilişkili olduğu faktörler: mevcut araştırmalar üzerinden bir değerlendirme. *AJIT-e: Bilişim Teknolojileri Online Dergisi*, 8(30):7-19.

Bates S (2017) Revenge porn and mental health: A qualitative analysis of the mental health effects of revenge porn on female survivors. *Fem Criminol*, 12:22–42.

Berman T, Deutsch G (2010) Inside 'Catfish': A tale of twisted cyber-romance. ABC News. Available from <https://abcnews.go.com/2020/catfish-movie-tale-twisted-cyberromance/story?id=11817470> (Accessed 04.03.2021)

Bilgiz S, Peker A (2020) Ergenlerde kişisel ve çevresel faktörlerin siber zorbalık davranışını yordaması. *Cumhuriyet Uluslararası Eğitim Dergisi*, 9:430-447.

Borca G, Bina M, Keller PS, Gilbert LR, Begotti T (2015) Internet use and developmental tasks: Adolescents' point of view. *Comput Hum Behav*, 52:49–58.

Borrajó E, Gámez-Guadix M, Pereda N, Calvete E (2015) The development and validation of the cyber dating abuse questionnaire among young couples. *Comput Hum Behav*, 48:358–365.

Brown C, Hegarty K (2018) Digital dating abuse measures: A critical review. *Aggress Violent Behav*, 40:44–59.

Cava MJ, Buelga S, Carrascosa L, Ortega-Barón J (2020) Relations among romantic myths, offline dating violence victimization and cyber dating violence victimization in adolescents. *Int J Environ Res Public Health*, 17:1551.

Cengiz Saltuk M, Erciyas C (2020) Okul öncesi çocuklarda teknoloji kullanımına ilişkin ebeveyn tutumlarına dair bir çalışma. *Yeni Medya Elektronik Dergisi*, 4:106-120.

Cihan M, Yıldız S (2020) Sosyal medya aracılığı ile işlenen suçlar: Facebook, Twitter ve Instagram örnekleri. *Kırıkkale Üniversitesi Sosyal Bilimler Dergisi*, 11:135-150.

Cihangir Çankaya Z (2009) Özerklik desteği, temel psikolojik ihtiyaçların doyumu ve öznel iyi olma: Öz-belirleme kuramı. *Türk Psikolojik Danışma ve Rehberlik Dergisi*, 4:23-31.

Charles S (2019) Social media linked to rise in mental health disorders in teens, survey finds. NBC News. Available from <https://www.nbcnews.com/health/mental-health/social-media-linked-rise-mental-health-disorders-teens-survey-finds-n982526> (Accessed 9.3.2021)

Cosma A, Walsh SD, Chester KL, Callaghan M, Molcho M, Craig W et.al. (2020) Bullying victimization: Time trends and the overlap between traditional and cyberbullying across countries in Europe and North America. *Int J Public Health*, 65:75–85.

Cox J (2018) TikTok, the app super popular with kids, has a nudes problem. Available from https://www.vice.com/en_us/article/j5zbxm/tiktok-the-app-super-popular-with-kids-has-a-nudes-problem (Accessed 14.03.2021).

Çalışkan M (2019) Suç korkusu kullanılarak, telefon aracılığıyla gerçekleştirilen dolandırıcılık vakaları (2017-2018): "İstanbul Örneği". *Medeniyet Araştırmaları Dergisi*, 4:29-42.

Derzakarian A (2017) The dark side of social media romance: Civil recourse for catfish victims. *Loyola Law Rev*, 50:741–764.

We are social (2020) Digital in 2020 global overview. Available from <https://wearesocial.com/blog/2020/01/digital-2020-3-8-billion-people-use-social-media> (Accessed 09.03.2021)

Drouin M, Landgraff C (2012) Texting, sexting, attachment, and intimacy in college students' romantic relationships. *Comput Hum Behav*, 28:444–449.

Elmalı F (2020) Sosyal ağ siteleri: Ergenler, riskler ve tehditlerden korunma stratejileri. *Bolu Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi*, 20:439-453.

Ell K (2017) FBI says internet romance scams on the rise. Here's what you need to know. USA Today. Available from <https://www.usatoday.com/story/money/2017/07/20/fbi-says-internet-romance-scams-rise/485311001/> (Accessed 9.04.2021)

Erol M, Erol, A (2020) Koronavirüs pandemisi sürecinde ebeveynleri gözünden ilkokul öğrencileri. *Milli Eğitim Dergisi*, 49:529-551

Finkelhor D, Wolak J (2016) The aftermath of sextortion. Available from <https://www.nationalchildrensalliance.org/the-aftermath-of-sextortion/> (Accessed 14.03.2021).

Francisco Luz Nunes Queiroz AA, Lopes de Sousa ÁF, Evangelista de Araújo TM, Milanez de Oliveira FB, Batista Moura ME, Reis RK. (2017) A review of risk behaviors for HIV infection by men who have sex with men through geosocial networking phone apps. *J Assoc Nurses AIDS Care*, 28:807-818.

Greenhow C, Lewin C (2016) Social media and education: Reconceptualizing the boundaries of formal and informal learning. *Learn Media Technol*, 41:6–30.

Gökel Ö (2020) Teknoloji bağımlılığının çeşitli yaş gruplarındaki çocuklara etkileri hakkındaki ebeveyn görüşleri. *Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi*, 2:41-47.

Göldağ B. (2019) Dijital oyunlar: Olumlu ve olumsuz etkileri. III. Uluslararası Battalgazi Bilimsel Çalışmalar Kongresi, 21-23 Eylül, Malatya, Türkiye, Tam Metin Kitabı, sayfa 121.

Günlü A, Ceyhan AA (2017) Investigating adolescents' behaviors on the internet and problematic internet usage. *Addicta: the Turkish Journal on Addictions*, 4:75–117.

Hancock K, Keast H, Ellis W (2017) The impact of cyber dating abuse on self-esteem: The mediating role of emotional distress. *Cyberpsychology (Brno)*, 11(2):2.

Henley J (2013) Are teenagers really careless about online privacy? *The Guardian*, 21 October 2013.

Hoffmeister T (2014) The challenges of preventing and prosecuting social media crimes. *Pace Law Rev*, 35:115–134.

Hazar Z, Demir G, Namlı S, Türkeli A (2017) Ortaokul öğrencilerinin dijital oyun bağımlılığı ve fiziksel aktivite düzeyleri arasındaki ilişkinin incelenmesi. *Beden Eğitimi ve Spor Bilimleri Dergisi*, 11:320-332.

Irmak AY, Erdoğan, A (2016) Ergen ve genç yetişkinlerde dijital oyun bağımlılığı: Güncel bir bakış. *Türk Psikiyatri Derg*, 27:128-137.

Jhaveri A (2015) Faking it — Scammers' tricks to steal your heart and money. Available from <https://www.consumer.ftc.gov/blog/2015/07/faking-it-scammers-tricks-steal-your-heart-and-money?page=14> (Accessed 14.03.2021)

Joshi SV, Stubbe D, Li STT, Hilty DM (2019) The use of technology by youth: Implications for psychiatric educators. *Acad Psychiatry*, 43:101-109.

Keleş B, McCrae N, Grealish A (2020) A systematic review: The influence of social media on depression, anxiety and psychological distress in adolescents. *Int J Adolesc Youth*, 25:79-93.

Koch CM (2017) To catch a catfish: A statutory solution for victims of online impersonation. *Uni Colo Law Rev*, 88:233–280.

Kowalski RM, Giumetti GW, Schroeder AN, Lattaner MR (2014) Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth. *Psychol Bull*, 140:1073–1137.

Lauckner C, Truszczynski N, Lambert D, Kottamasu V, Meherally S, Schipani-McLaughlin et al. (2019) "Catfishing," cyberbullying, and coercion: An exploration of the risks associated with dating app use among rural sexual minority males. *J Gay Lesbian Ment Health*, 23:289–306.

- Lykens J, Pilloton M, Silva C, Schlamm E, Wilburn K, Pence E (2019) Google for sexual relationships: Mixed-methods study on digital flirting and online dating among adolescent youth and young adults. *JMIR Public Health Surveill*, 5:e10695
- Macapagal K, Moskowitz DA, Li DH, Carrión A, Bettin E, Fisher CB et al. (2018) Hookup app use, sexual behavior, and sexual health among adolescent men who have sex with men in the United States. *J Adolesc Health*, 62:708–715.
- Macey J, Hamari J (2019) Sports, skins and loot boxes: Participants, practices and problematic behaviour associated with emergent forms of gambling. *New Media Soc*, 21:20–41.
- Machackova H (2020) Bystander reactions to cyberbullying and cyberaggression: individual, contextual, and social factors. *Curr Opin Psychol*, 36:134-136.
- McGlynn C, Rackley E, Houghton R (2017) Beyond 'Revenge Porn': The continuum of image-based sexual abuse. *Fem Leg Stud*, 25:25–46.
- Miller E, Jones KA, McCauley HL (2018) Updates on adolescent dating and sexual violence prevention and intervention. *Curr Opin Pediatr*, 30:466–471.
- Mori C, Cooke JE, Temple JR, Ly A, Lu Y, Anderson N et al. (2020) The prevalence of sexting behaviors among emerging adults: A meta-analysis. *Arch Sex Behav*, 49:1103–1119.
- Mosley MA, Lancaster M, Parker ML, Campbell K (2020) Adult attachment and online dating deception: a theory modernized. *Sex Relation Ther*, 35:227-243.
- Nixon CL (2014) Current perspectives: The impact of cyberbullying on adolescent health. *Adolesc Health Med Ther*, 5:143–158.
- Oğuz R (2018) Sanal ortamdaki nefret söylemi hakkında çocuklarınızla konuşun! <https://dijitalmedyavecocuk.bilgi.edu.tr/2018/12/25/sanal-ortamdaki-nefret-soylemi-hakkinda-cocuklarinizla-konusun/> (12.03.2021'de ulaşıldı).
- Okkay I (2019) Dijital Oyunların Çocuklar Üzerinde Yol Açtığı Etiksel Sorunlar. *Yeni Medyada Çocuk ve İletişim* (Ed. Ali Murat Kırık): 115-141. Ankara, Çizgi Kitabevi.
- Orben A (2020) Teenagers, screens and social media: A narrative review of reviews and key studies. *Soc Psychiatry Psychiatr Epidemiol*, 55:407–414.
- O'Malley RL, Holt KM (2020) Cyber sextortion: An exploratory analysis of different perpetrators engaging in a similar crime. *J Interpers Violence*, 1-26.
- Özdemir B, Yıldırım G (2019) Dijitalleşen iletişim ortamlarında kimlik inşası ve benlik sunumu: İletişim Fakültesi öğrencileri üzerine bir araştırma, *Yeni Medya Elektronik Dergisi*, 3:178-191.
- Quintana-Orts C, Rey L, Neto F (2020) Beyond cyberbullying: Investigating when and how cybervictimization predicts suicidal ideation. *J Interpers Violence*, 1-23.
- Paat YF, Markham C, Peskin M (2021) Digital crime, trauma, and abuse: Internet safety and cyber risks for adolescents and emerging adults in the 21st century. *Soc Work Ment Health*, 19:18-40.
- Patchin JW, Hinduja S (2020) Sextortion among adolescents: Results from a national survey of U.S. youth. *Sex Abuse*, 32:30–54.
- Peebles E (2014) Cyberbullying: Hiding behind the screen. *Paediatr Child Health (Oxford)*, 19:527–528.
- Powell A, Henry N, Flynn A, Scott AJ (2019) Image-based sexual abuse: The extent, nature, and predictors of perpetration in a community sample of Australian adults. *Comput Hum Behav*, 92:393-402.
- Roth PL, Bobko P, Van Iddekinge CH, Thatcher JB. (2016) Social media in employee-selection-related decisions: A research agenda for uncharted territory. *J Manage*, 42:269–298.
- Reed LA, Ward LM, Tolman RM, Lippman JR, Seabrook RC (2018) The association between stereotypical gender and dating beliefs and digital dating abuse perpetration in adolescent dating relationships. *J Interpers Violence*, 19:162-184.
- Sabella RA, Patchin JW, Hinduja S (2013) Cyberbullying myths and realities. *Comput Hum Behav*, 29:2703–2711.
- Schleifer J, Letter AB (2018) "Just one more turn!" Why kids love video games and why adults worry about them. *Brown University Child and Adolescent Letter*, 34:1–6.
- Semenza DC (2019) Gender differences in the victim-offender relationship for on-and-offline youth violence. *J Interpers Violence*, 12:1-22.
- Shaari AH, Kamaluddin MR, Fauzi WFP, Mohd M (2019) Online-dating romance scam in Malaysia: An analysis of online conversations between scammers and victims. *GEMA Online Journal of Language Studies*, 19: 97–115.
- Skilbred-Fjeld S, Reme SE, Mossige S (2020) Cyberbullying involvement and mental health problems among late adolescents. *Cyberpsychology*, 14:1-16.
- Slonje R., Smith PK (2008) Cyberbullying: Another main type of bullying? *Scand J Psychol*, 49:147-154.
- Springston KM (2017) Gender differences in participation in and motivations for sexting: The effects of gender role attitudes, masculinity, and femininity. *Butler Journal of Undergraduate Research*, 3:142-157.
- Subrahmanyam K, Greenfield P (2008) Online communication and adolescent relationships. *Future Child*, 18:119-146.
- Sussman CJ, Harper JM, Stahl JL, Weigle P (2017) Internet and video game addictions: Diagnosis, epidemiology, and neurobiology. *Child Adolesc Psychiatr Clin N Am*, 27:307– 326.
- Sütüoğlu T (2015). Sosyal paylaşım ağlarında gençlerin sosyalleşme ve kimlik inşası süreçleri: Facebook örneği. *Folklor Edebiyat*, 21:125-147.
- Toker O (2021). Sokakta karşılaştığım yabancı ile internette tanıştığım yabancı aynı değil! Available from <https://www.orhantoker.com>. (Accessed 27.02.2021)
- Tynes B, Giang M (2009) Online victimization, depression and anxiety among adolescents in the us. *European Psychiatry*, 24(Suppl 1):S686.
- Turgut YE, Kursun E (2020). Mobile internet experiences of the children in Turkey and European countries: A comparative analysis of internet access, use, activities, skills and risks. *Eurasian Journal of Educational Research*, 88:225-248.
- Tzani-Pepelasi C, Ioannou M, Synnott J, Ashton S (2018) Comparing factors related to school-bullying and cyber-bullying. *Crime Psychology Review*, 4:1–25.
- Üstündağ, A (2020). Çocukların sosyal medya kullanım durumları ve sosyal medyanın çocukların duyu durumları üzerine etkisi. *Uluslararası Güncel Eğitim Araştırmaları Dergisi*, 6:286-302.
- Van Ouytsel J, Torres E, Choi HJ, Ponnet K, Walrave M, Temple JR (2017) The associations between substance use, sexual behaviors, bullying, deviant behaviors, health, and cyber dating abuse perpetration. *J Sch Nurs*, 33:116–122.
- Vanman E (2018) We asked catfish why they trick people online—It's not about money. Available from <https://phys.org/news/2018-07-catfish-people-online-it-money.html> (Accessed 02.03.2021)
- Vogels EA (2020) 10 facts about Americans and online dating. Available from <https://www.pewresearch.org/fact-tank/2020/02/06/10-facts-about-americans-and-online-dating/> (Accessed 01.03.2021)
- Wachs S, Wright, MF (2019) The moderation of online disinhibition and sex on the relationship between online hate victimization and perpetration. *Cyberpsychol, Behav Soc Netw*, 104:300-306.
- Weimann G, Masri N (2020) Research note: Spreading hate on Tiktok. *Stud Confl Terror*, doi: 10.1080/1057610X.2020.1780027.
- Wittes B, Poplin C, Jurecic Q, Spera C (2016) Sextortion: Cybersecurity, Teenagers, and Remote Sexual Assault. Washington DC, The Brookings Institution.

Wong-Lo M, Bullock LM, Gable RA (2011) Cyber bullying: Practices to face digital aggression. *Emot Behav Diffic*, 16:317-325.

Wolak J, Finkelhor D (2016) Sextortion: Keys Findings from an Online Survey of 1631 Victims. Durham, NH, Crime Against Children Research Center.

Yaman F, Çubukçu PA, Küçükali M, Kabakçı Yurdakul I. (2020) Ortaokul ve lise öğrencilerinin sosyal medya kullanımı ve dijital oyun oynama durumları. *Sakarya Üniversitesi Eğitim Fakültesi Dergisi*, 20:160-174.

Yıldız S, Bektaş F. (2021) COVID-19 salgınının çocukların boş zaman etkinliklerinde yarattığı değişimin ebeveyn görüşleriyle değerlendirilmesi. *Gazi Beden Eğitimi ve Spor Bilimleri Dergisi*, 26:99-122.

Yücel V (2019) Zararlı dijital oyunlar ve çocuklar. *Avrasya Sosyal ve Ekonomi Araştırmaları Dergisi*, 6:340-353.

Zweig J, Dank M, Yahner J, Lachman P (2013) The rate of cyber dating abuse among teens and how it relates to other forms of teen dating violence. *J Youth Adolesc*, 42:1063-1077.