DIGITAL PARENTING: VULNERABILITIES AND PROTECTIVE FACTORS ASSOCIATED WITH CHILDREN’S EXPOSURE TO ONLINE RISKS

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Acknowledgements
Introduction

This thesis is the result of an industrial Ph.D, a program that establishes active collaboration between educational agencies and companies, and allows doctoral students to carry out a project whose results will be immediately applicable in a business context. The collaboration between universities and companies arises from the need to combine scientific knowledge from literature and the application of an evidence-based methodology with the needs of companies to produce specific knowledge, products or interventions. Through this agreement, the University obtains the opportunity to strengthen its partnership with the private sector and vice versa, so that the foundations can be laid for every new project with immediately applicable effects.

In the specific case of my doctoral program, Catholic University of the Sacred Heart, in the person of Prof. Simona Caravita, collaborates with Centro Tice, a center on the territory of Emilia Romagna that provides services, training and research in the field of psychology.

Centro Tice has three locations in Piacenza and one in Correggio (in the province of Reggio Emilia). The Center, in addition to training and research services, deals with evaluation, diagnosis and psychological interventions for different age groups (children, adolescents, adults) and different psychological needs (anxiety, depression, isolation, autism, learning disorders and many others).

I am a psychologist at the Tice Center and I work with adolescents and their families. The population I care for faces several challenges in terms of physical and psychological changes, and intra- and extra-familiar, social and relational demands. In recent years, at Tice, requests for psychological support for this age group have increased disproportionally, maybe for the greater attention that psychological well-being now holds in people's lives, but, presumably, also because of the new social contexts, increasingly demanding and potentially risky, which people, and especially adolescents, have to face (Word Health Organization, 2021).

One of the requests most frequently made by families who turn to Tice's adolescent sector is undoubtedly represented by questions, doubts and concerns related to the excessive exposure of young people to the media and the virtual world. The Internet is an environment from which parents are often almost completely excluded and in which a shared and functional way to transmit knowledge and coping strategies from adults to children is absent (Bartau-Rojas et al., 2018).

This doctoral thesis originates from Tice company's need for a deeper understanding of Web risks, parental mediation strategies and ways to support families in their mediational role.
The observation of children in charge of the Tice Center led us, the psychologists working at the Center, to hypothesize that difficulties of various kinds (scholastic, social, emotional, behavioral) in the offline world could correlate with a vulnerability also in online contexts.

Before starting my doctorate project, I was aware that parents play a very important role in the prevention and functional management of their children's technological devices, but also that they often tend to perceive themselves as unprepared in front of this world, reporting a lack of knowledge of what are the most appropriate strategies to mediate their children's use of the Internet (Iglesias et al., 2015). The literature on the topic seemed very broad and the results not always aligned on a single perspective (Lee et al., 2013; Mesh, 2009). Many variables have been proposed as influencing children's online behaviors and their exposure to the risks of the Web: age, certain individual characteristics, school or emotional vulnerability, peer group, and parental controls and supervision (Cabello-Hutt et al., 2018) and I found it necessary to try to structure a more comprehensive project with respect to risk and protective factors toward the online world.

After a thorough Tice Center's needs analysis and careful observation of our patients, the research questions I structured and attempted to answer with my doctoral dissertation are threefold: What parenting strategies are most effective in reducing children's exposure to Web risks? What are the risk factors and what are the protective factors towards children's exposure to online risks? How can we support as many parents as possible in this new role as mediators of digital content, in an effective and functional way?

My research path, therefore, consisted of three studies:

- an in-depth scoping review of the scientific literature on the topic of parental mediation, and children's exposure to risks on-line
- a quantitative study that investigated the characteristics and vulnerabilities that can lead children, and in particular children with Special Educational Needs (SEN), to experience more risks online,
- the evaluation of feasibility and early outcomes of a parent training intervention aimed at supporting parents' mediational skills.

While I was starting to collect data for my second study, an event shocked the world: Corona-virus pandemic changed the habits of individuals and families and made youth and adults potentially more at risk for isolation or excessive Internet use (Kawabe et al., 2020). In this context, studying the risks of the Internet and understanding how to support parents in managing their children's Internet use was more crucial than ever.
Obviously, the pandemic also impacted on my research expectations: busy finding appropriate ways to continue teaching, many schools withdrew from joining the project and the sample I hoped to obtain had to be reduced. In addition, Italian schools were closed for a long time, preventing researchers from being able to personally meet school administrators and teachers or administer questionnaires face-to-face. Despite the readjustments and the difficulties in involving institutions and families, when completed, the current research project produced interesting knowledge that can also be possibly applied in clinical settings.

My first study found that there are several types of actions and measures that parents can implement to reduce their children's exposure to Web risks. These measures interact with a multitude of other variables and that all together, family, individual, and parental control aspects create the foundations that provide protection or, conversely, increased likelihood of online risk for children and adolescents.

Currently, it is impossible for professionals working with children and adolescents not to assess aspects of vulnerability to virtual environments. As psychologists and clinicians have always assess a young person's ability to interact with peers, and to stay in a group, and it was known that social skills were associated with greater well-being, today's clinicians cannot avoid assessing relational and critical thinking skills related to the virtual world.

In addition to potentially dangerous contacts, young people are exposed every day to a multitude of videos, images, memes, comments, and news, some of which may need more critical thinking skills, higher self-esteem or social skills to be understood and contextualized, than those possessed by a child or young person. That is the reason for which it seemed important to me to explore not only what the risks of the Web are, but also what characteristics of vulnerability might make a young person more susceptible to those risks. Also, results from the review carried out for the first study suggest that "discriminated against" children, who for some reason are more vulnerable in offline contexts, generally use the Internet in a more risky or "adventurous" way.

Working with adolescents with special educational needs (SENs), my research could not avoid delving into this aspect related to online vulnerability: in my second study, I wanted to investigate whether children with SENs were more at risk of committing or experiencing harassment or other risks in the virtual world.

The last study involved the realization and the first assessment of an online intervention for parents. This study stems from the awareness that parents, along with schools, have been entrusted with another rather complex task concerning the education of their children, that of mediators of
digital content, but often they lack knowledge of devices and skills in order to limit their children's use and/or explain their possible negative sides.

This intervention-study aimed to propose a new approach to the issue of "parenting in the digital world". The intervention I proposed is a group intervention for parents, carried out online and composed of practical and experiential exercises aimed to improve their awareness of their relationship with their children, to inform about the risks online, but also and above all about the most appropriate ways to be a parent who notices, who listens and who knows how to give support even in the online world. The studies in this thesis and the last one in particular capture and show the deeper meaning of an industrial PhD by combining aspects of quantitative and qualitative research and clinical interventions, theoretical knowledge and at the same time, immediately usable in psychotherapy or psychological support interventions. Only a test of the training effectiveness and feasibility of the pathway was possible during the time of my doctoral journey, but this study lays the groundwork for future research related to the implementation of Web-based parenting services.

Travel abroad was impossible for a long time due to restrictions, but I still managed to join my supervisor, Professor Caravita, for a study period in Norway, at the University of Stavanger, during which I was able to perform qualitative analyses of my interviews and finish my thesis.

The weeks in Norway were also very interesting from the point of view of contact with research interests even very far from those to which I was accustomed. The exchange of ideas with other researchers and PhD students has led me to expand my network of knowledge and deepen the study and application of qualitative research methods.

What my industrial doctorate path has taught me is that you can be a clinical psychologist and do research, that it is not always necessary to choose, and that basic research, methodology and scientific rigor offer an indispensable light to a profession that wants to define itself as empirical.
Chapter 1: How can parents mediate their children's Internet use? A scoping review

1.1 Online risks

What is the risk? Beck (1998), a social theorist of the "risk society," argues that it can be defined as the way of dealing with dangers and insecurities introduced by modernization. Until the modern era, the author argues that societies seemed to be concerned only with natural hazards (floods, volcanoes, pestilence) but, because they were often uncontrollable by their very nature, people could only try to limit their unpleasant effects.

Today, societies are increasingly concerned about the risks that humans themselves have created. Technology, for example, can be seen as a double-edged sword: users are constantly balancing the risks and opportunities it offers. It is no longer just a cliché: we are truly constantly connected seven days a week, anywhere in the world; we are always just a click away from our families, co-workers, classmates, idols, mentors, public figures, or even complete strangers (Rao et al., 2018). This type of communication over the past decade has changed social interactions, especially among young people who use the Internet as their primary mode of communication, seizing new opportunities, but also potentially damaging dynamics for their own wellness, social skills and mental health. Moreover, the rise of social media as information generators has accelerated changes in our societies, with little understood functional consequences (Bak-Coleman et al., 2021).

Just as the types of apps and social networks evolve, so do online risks. Technology is driving immense changes in the daily lives of children and youth, and the pace at which it develops and innovates is inexorable (El Asam & Kats, 2018). The risks associated with today's Internet use are numerous and can affect the social, relational, cognitive and emotional spheres of young people. One of the best-known Internet risks is Cyberbullying, defined by Smith and colleagues (2008) as an aggressive and intentional act carried out by a group or an individual, using electronic forms of contact against a victim who cannot easily defend. The scope of cyberbullying is vast, both in terms of means and content. It includes bullying through text messages, phone calls, emails, instant messages, social media, or in chat rooms. It varies from posting offensive words or pictures, to derogatory comments, to posting false information on blogs or social networks. It can be as ruinous as revenge porn, which is the posting of sexually explicit images or videos of a person on the Internet, usually by a former sexual partner, without the person's consent and for the purpose of causing him or her discomfort or embarrassment (Rao
et al., 2018). Based on their online behavior, people can be classified as cyber victims, cyber bullies, and cyber victims/bullies. Effects of cyberbullying can be physical, psychological, or school performance, and these are more pronounced for the cyber bully/victim category (Kowalski & Limber, 2013): higher rates of depression and anxiety are noted among cyber victims along with school rejection and decline in academic performance. Cyber-victimized students are also found to be more likely to report headaches, stomachaches, bedwetting, and various other psychosomatic complaints. Sjursø and colleagues’ study (2016) of more than 3,000 Norwegian adolescents compared traditional and online victimization, showing that a stronger association was present between cyber victimization and anxiety symptoms, compared to traditional victimization and anxiety symptoms.

On the Internet you can also come across Hate Speech. The Cambridge dictionary defines hate speech as "public speech that expresses hatred or encourages violence toward a person or group based on something such as race, religion, gender, or sexual orientation" (Hate speech, n.d.). Toxic language (e.g., hate speech, abusive speech, or other offensive speech) primarily targets members of minority groups and can catalyze real-life violence against them (Cleland, 2014; Mozur, 2018). Research on the hate-speech-prejudice link is not limited to the study of racial and ethnic contexts of discrimination. In recent decades, increased attention has been devoted to homophobic language as one of the most frequent forms of verbal contempt.

Another rather unknown risk is Radicalization, the process by which individuals, often very young, move from displaying a moderate to an extreme position in the social, political or religious areas (Campeloi et al., 2018). This process, today, can easily occur online, through exposure to radical messages or images and involvement in extremist groups.

But the risks aren't just about what you can experience while online; they can also involve major lifestyle changes. Problematic Internet Use (PIU), for example, has become a global social issue. It can be conceptualized as an inability to control one's use of the Internet which leads to negative consequences in everyday life (Spada et al., 2014). Block (2008) suggested four essential diagnostic criteria for a possible PIU diagnosis: (1) excessive Internet use, often associated with a loss of sense of time or neglect of basic drives; (2) withdrawal with feelings of anger, and depression and tension when the Internet cannot be accessed; (3) tolerance, including the need for better computer equipment, more software, or more hours of use; and (4) negative consequences on daily life: fighting, lying, poor school or work performance, social isolation, and fatigue.
Today's researchers tend to organize the wide range of online risks into three macro-categories: contact, conduct, and content risks (Livingstone et al., 2011).

**Contact Risks** refer to the possibility of a child or adolescent participating in harmful interactions, such as with an adult who seeks inappropriate contact or attempts grooming for sexual purposes, or with individuals who want to radicalize, persuade to engage in inappropriate or dangerous behavior and finally being teased or threatened by known or unknown contacts.

**Conduct Risks** refer to the possibility that a child behaves in a way that contributes to risky content or contact. This may include children writing or creating hateful material about other children, inciting racism, sharing sexual or dangerous content, including material they have produced themselves.

**Content Risks** refers to the possibility that a child is exposed to unwanted and inappropriate content. This may include sexual, pornographic, and violent images, certain forms of advertising, racist, discriminatory, or hateful material, and websites that promote unhealthy or dangerous behaviors, such as self-harm, suicide, and anorexia. Table 1 shows the classification with exemplar risks from each area: Aggressive, Sexual, Values and Commercial.

**Table 1**

*The EU Kids Online 3Cs classification of online risks (Livingstone et al., 2011)*

<table>
<thead>
<tr>
<th>Content (child as receiver)</th>
<th>Contact (child as participant)</th>
<th>Conduct (child as actor)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aggressive</strong></td>
<td>Violent, gory content</td>
<td>Harassment, Stalking</td>
</tr>
<tr>
<td><strong>Sexual</strong></td>
<td>Pornographic content</td>
<td>Grooming, Sexual abuse or exploitation</td>
</tr>
<tr>
<td><strong>Values</strong></td>
<td>Racist/Hateful content</td>
<td>Ideological persuasion</td>
</tr>
<tr>
<td><strong>Commercial</strong></td>
<td>Embedded marketing</td>
<td>Personal data misuse</td>
</tr>
</tbody>
</table>
1.1.2 Online risks in Western context

The Eu Kids Online 2020 survey (Smahel et al, 2020) is the leading survey examining the online risks faced by young Europeans. It was conducted between 2017 and 2019 among children aged 9 to 16 in 19 European countries.

Results of the survey reveal a substantial increase in both the percentage of children using smartphones and the amount of time spent online when compared to the 2010 survey (Livingstone et al., 2011): the amount of time children spend online each day appears to have almost doubled in many countries (from about one to three hours a day in Spain and from about two to three and a half hours in Norway). In Italy, 56% of children and young people use their smartphones "many times a day" or "all day" and among the most frequent users, 31% are 9-11 years old and the majority, 76%, are 15-16 years old.

Time spent online daily increases with age, peaking at 184 minutes (about three hours) for 15-16 year olds in Italy. This is an underestimate, given the recent lockdown period for Covid-19, which appears to have increased online screen time by about 65% (Pišot et al., 2020). Fifty-seven percent of boys and girls use social networks on a daily basis, and the percentage rises to 77% when considering only older boys (Smahel et al, 2020).

Talking about online risks, about a quarter of European teens report having had a negative experience on the Internet in the previous years, 14% report having committed some sort of online aggression, while 23% report having been cyber-victimized, receiving aggressive or humiliating messages online, from a known or unknown contact. Despite previous evidence suggesting a higher proportion of boys as cyberbullies and girls as cyber-victims (Floros et al., 2013), the differences reported by the European survey are rather limited.

In Italy, 27% of children are in contact with people they have never met face-to-face: in particular 13-14 year olds (29%) and 15-17 year olds (44%), and significant sex differences aren’t noted. The experience of meeting people that have been known online is more common for male teens aged 15-17. These kinds of encounters do not necessarily represent a negative experience for teens: most respondents (56%) say they were happy after the meeting, but 14% described themselves as "very" (1%) or "somewhat" (13%) upset.

The European survey (Smahel et al, 2020) not only aimed to investigate young people's exposure to potentially dangerous contact, but also analyzed the frequency of youth "stumbling" on inappropriate or dangerous materials online, showing how the percentage of 12-16 year olds to whom it has happened is quite high: 10% of young people have visited sites about how to hurt
themselves, 8% have looked for ways to commit suicide, 12% have looked for ways to become "very thin," 17% have viewed hate messages about people or groups of people, 11% have been interested in the experiences of people who have taken drugs, and finally, 13% have viewed violent images.

Even regarding the U.S. experience, the report "Teens, social media & technology" (Anderson & Jiang, 2018) indicates how the landscape of social media used by teens is markedly different than it was three years earlier: nearly half (52%) of teens in the survey reported using Instagram while 41% reported using Snapchat. As smartphone access has become the primary method of internet access, about 45% of teens reported using the internet almost constantly. That 45% is nearly double the 24% who reported the same in the 2014-2015 survey. Another 44% say they go online several times a day, meaning that about nine in ten teens spend a good portion of their days online. Despite the nearly ubiquitous presence of social media in the lives of teens, perceptions of the impact these platforms have on people their age are unclear: 45% of teens believe that social media has neither a positive nor a negative effect, 31% perceive its impact as predominantly positive (socializing and connecting with others), and 24% describe its effect as predominantly negative.

Anderson and Jiang (2018) also highlight how 59% of U.S. teens have been bullied or harassed online, and how a similar percentage say that cyberbullying is a major problem for teens and that teachers, social media companies, and policymakers are failing to address this issue. Specifically, 60% of girls and 59% of boys surveyed experienced at least one of the six abusive behaviors cited in the study (being called abusive names, spreading false rumors, receiving unwanted explicit messages, constantly being asked where they are and what they are doing, physical threats, and unwanted dissemination of personal images). Males and females were abused at similar rates, but some forms of cyberbullying, such as spreading rumors, were significantly more prevalent among girls.

Although most U.S. parents believe they can educate their children on proper online behaviors, large percentages of them are concerned about the types of negative experiences their children might encounter online. About six in ten parents report that they are concerned that their children may be harassed or cyberbullied (59%) or that they may send or receive sexually explicit images (57%).
1.1.3 Parents’ concerns regarding online risks

Opportunity and risks linked to Internet use are not equally important to parents and not all parents are equally concerned about what might be happening on the Internet: parental concerns vary by background, ethnicity, education, income, metropolitan status, and political ideology (Boyd & Hargittai, 2013). Their concern and attitude toward the media have an effect on the type of mediation they engage in: parents who believe the media has a negative effect on their children are more likely to use mediation methods, especially restrictive ones (Lee, 2013).

Parents mention both positive and negative functions of using ICTs (Internet and Communication Technologies) for their children, however the percentage of the negative aspects they mention (70%) is more than double, when compared to the percentage of the reported positive aspects (30%) (Bartau-Rojas et al., 2018).

Concern (30%) is that children can have access to inappropriate content (violent, pornographic, stereotyped or drug), without having sufficient maturity and knowledge to recognize them (ibidem). A study by Padilla-Walker and colleagues (2012) identifies another strong concern from parents: the excessive amount of time. That is, parents fear that, when adequate restrictions and control are absent, visiting online websites could take up too much youth’s time from other activities or from being together in the family.

Other concerns are related to the youth’s socialization. According to parents and teachers, face-to-face contact between young people has been reduced over time since the increase in diffusion of ICT technologies, because communicating with friends online is physically easier than going out and playing with them (Gentile et al., 2012). Parental concerns also relate to possible addiction to the use of ICT technologies, a consequent lack of social skills, loss of imagination and the academic consequences (Bartau-Rojas et al., 2018). Risks related to the privacy or the sexual sphere, and to the lack of real and positive models were also mentioned. There are also fears related to possible academic and learning difficulties, such as increased frequency of misspellings in young people and possible decrease in attention levels (ibidem). Finally, with regards to physical health and abilities, parents fear that, in comparison to the past, youth’s physical conditions can be worse, due to a more sedentary life and the reduction of time spent outdoors or sport activities (ibid). Nevertheless, the main worries of parents pertain to the uncertainty about the activities and contents their children are exposed to, possible children’s exposure to actions of other online users, and their own difficulties in controlling the actions of
their children online. On the positive side, however, in the same study by Bartau-Rojas et al. (2018) parents also mentioned several opportunities that Internet use offers to children, starting from early childhood. In particular, parents highlighted how the use of the Internet can favor users’ integration, autonomy and critical attitudes with respect to what is read or seen. Parents also expressed satisfaction with regards to possible increase of children’s ability in finding places and in spatial orientation due to the use of smartphones.

1.1.4 Parental mediation: from television to Internet

Social learning theory states that parental behavior can influence and shape attitudes and thoughts of children (Bandura, 1977). This also occurs with regard to new media: parents who watch, comment, and/or control children’s use of the Internet and ICTs express explicit or implicit messages of approval or disapproval that remain relevant for children's risk assessment (Liu et al. 2013). Interest in this topic began many decades ago, with several authors wanting to assess how parents managed their children's television use (Barcus, 1969; Brown & Linne, 1976). Early outcomes of these first studies suggested the value of limiting television exposure time (Maccoby, 1954), especially limiting the influence of advertisements on children (Burr & Burr, 1976), and emphasized the importance of parents in shaping their children's media use (Banks & Gupta, 1980). Then, the term "parental mediation" then began to be used to recognize the active role of parents in managing and regulating their children's experiences with television (Lin & Atkin, 1989; Nathanson, 1999; Valkenburg et al., 1999).

With the enormous spread of Internet, it has become necessary to rethink the role of media in family life. Unlike television, digital media (mobile phones, laptops and other devices with Internet connection) not only connect young people to the outside world, but also provide them with the means to build their own virtual identities. Parental mediation had to start focusing not only on "what" to watch, what sites to visit, and how much time to spend on media, but also on how to show up, what to write or not write about yourself, how to act when contacting strangers, and how to respect others (friends or strangers) online.

The type of mediation parents choose depends on many factors: parents with a college degree are more likely to control their children's Internet use than parents with less education (Valcke et al., 2010), those from higher status enforce more rules for their children in the digital world (Livingstone & Helsper 2008), while older parents from rural areas and those who are less
digitally savvy face greater difficulties in mediating their children's Internet activities (Chang et al. 2016; Ktoridou et al. 2012).

Some studies suggest that parents' ideas about the Web are contentious: on the one hand they wish to promote their children's Web use and digital skills, while on the other hand they express concerns about the implications of these tools on their children's lives (Livingstone & Bober 2013). It also appears that they are sometimes contradictory in their media literacy style: despite their concerns, it is often the parents themselves who engage in unsafe online behaviors or excessive smartphone use (Terras & Ramsay 2016).

Also, the study by Bartau-Rojas and colleagues (2018) indicates how, in general, parental mediation on youth’s use of Internet and ICTs tends to be more negative than positive, as parents state more rules and prohibitions on what children “do not” have to do online than providing indications about what children "could do" in order to benefit from the use of media. We also know that parental mediation generally declines as children age. Parents of older children report lower frequency of mediation strategy than those of younger children (Bocking & Bocking, 2009) who monitor more intensively and restrict their Internet use more often. Results about children’s sex are inconclusive. Some studies indicate that parents are more likely to mediate girls’ media use more tightly than boys’, using active and restrictive methods (Livingstone & Helsper, 2008; Sonck et al., 2013). Other studies document that parents are more likely to limit Internet use, both in terms of time and content, for boys than for girls (Eastin et al., 2006).

Many studies on the topic have some limitations. First, because scholars have tended to be primarily concerned with the negative effects of media on children and youth, leaving out the ways in which parents can attempt to use media for positive goals (Nathanson, 2015; Yang & Schaniger, 2010). Second, there is a widespread tendency in research to focus on very young children, paying less attention to the exigencies of the parent-child relationship as the child grows (Nathanson, 2015).

1.1.5 The main parental mediation strategies

The main parenting techniques used to limit web risks are restrictive mediation, active mediation and co-use (Valkenburg et al., 1999).

Restrictive mediation occurs when parents impose rules that limit the time spent on the media (TV, videogames or the Internet) or the content that the child can access. It focuses on setting limits on browsing time and rules on activities that can and cannot be performed online.
(Len-Ríos et al. 2016). These limitations can also be enforced with the help of technological means and applications that limit time automatically. Restrictive forms of mediation are more common than active forms, chosen particularly by parents who perceive the Internet as a dangerous place, as well as by parents of younger children (Livingstone & Helsper 2008). The most traditionally used form of restrictive mediation is that related to limiting the time of Internet use (Livingstone & Bober, 2013). Although it may be thought to somewhat limit children's autonomy on the Web, this type of mediation is commonly associated with less risky online behaviors (Livingstone & Helsper 2008). Restrictive mediation can involve either active monitoring and controls of time spent on the Internet or parental imposition of rules to limit access to certain online content. The effectiveness of this strategy in protecting against Web risks appears to vary based on several of factors, including the age of the adolescent and the quality of the parent-child relationship (ibid).

Active mediation focuses on creating opportunities to openly discuss risks and benefits online (Symons et al., 2017). It occurs when parents discuss with their children the risks of the web or other central issues related to the use of Internet and social networks, ICTs and media behaviors, such as the choices of a character or the consequences of an impulsive action, with the intent to promote their critical thinking (Glatz et al., 2018). Active mediation appears to be positively related to children's online educational and communicative activities (Lee & Chae 2007), but Livingstone and Helsper (2008) found no correlation between active co-use and online risk. In general, active mediation and co-use are recommended by many scholars and organizations, such as the American Academy of Pediatrics (Guram & Heinz, 2018).

Finally, co-vision (or co-use) consists of using the media together with the child and includes two subgroups: intentional coviewing, when parents assist children during browsing, and passive coviewing, when parents are in the same room while their child or teenager uses the media (Chakroff & Nathanson, 2008).

Generally speaking, parental involvement through awareness and protection practices can represent a protective factor against the various risks associated with the ICTs use (Bass, 2016). In the case of cyberbullying, for example, parental involvement in preventive programs can be beneficial for children both in terms of stopping the phenomenon and in terms of providing emotional support (Fridh et al., 2015; Özdemir 2014). An in-depth analysis of the existing literature can be the starting point to provide correct information on these strategies and develop interventions for children and parents.
1.1.6 Parental warmth on risks prevention

Parental warmth is the extent to which parents are warm, loving, and responsive. This dimension is recognized in every culture as an important dimension of parenting (Baumrind, 1991). Many studies over the past 15 years have used different methods, samples, and measures to assess the outcomes of family warmth on children development, and all have reached the same conclusion: authoritarian parenting, consisting the combination of high parental warmth and clear negotiated parent-child boundaries (Bulcroft et al., 1996; Gonzalez-Ramos et al., 1998), is associated with advantages in adjustment, school performance, and psychosocial maturity (Steinberg & Morris, 2001).

Baumrind's (1978) studies showed that adolescents who perceive warmth from their parents have higher levels of psychosocial competence and maturity than their peers who were raised by authoritarian or uninvolved parents. Also, some studies have identified parental warmth as an important factor in preventing delinquent behavior, fights, theft, and school absenteeism during adolescence (Barnes & Mason, 2004; Buehler 2006).

It appears that emotionally warm parenting provides a safe growing and nurturing environment, helping children regulate negative emotions in a functional way and reducing their aggressive attitudes. Even with respect to the online world, a study by Lwin and colleagues (2008) suggests that children should feel free to ask questions about Internet use and content to their parents, and that parents should also be understanding if their children view inappropriate content on the Internet. In general, parental warmth seems to result in safer Internet use (Fleming et al., 2006), more educational Internet use, and a higher frequency of positive online interactive behaviors (Lee & Chae, 2007). In addition, children who perceive parental warmth appear to better understand the complexities of the Internet (Lwin et al., 2008). Today, with the evolution of online applications and social networks and the pervasiveness of the Internet in young people's lives, it is still important to study the associations of parental warmth with the ways young people experience the online world.

1.2 The current study

Given the controversies surrounding the outcomes of various parental mediation strategies, and the paucity of studies related to parental warmth on Internet Use, this review aims to summarize
and systematize the existing literature on mediation strategies and parental warmth and their associations with their children’s online safety and exposure to risks. Specifically, the main objectives of the review were: 1) assess the variables associated with the various parental mediation strategies described in the literature; 2) to evaluate risk or protective factors associated with risky Internet use in adolescence.

1.2.1 Method

The article search was conducted in 2020 and updated in 2021. Articles were searched by entering the words "Internet," "parental mediation," and "online risks" in three major search engines: PubMed, Psycinfo, and Scopus. In addition, a manual search was conducted by entering the same three keywords into Google Scholar and selecting articles that fit the criteria.

The objective of the review was to summarize and systematize the outcomes and associations of the various parental mediation strategies or the parental warmth and openness of communication between parent and children. Specifically, the goals of the review were (1) explain which Internet use-level outcomes correlated with restrictive mediation, which with active mediation, and which with co-use, (2) assess whether and how parental warmth and open communication between parent and child was associated with better outcomes in Internet use. Because this review is the baseline for a parent intervention that will be conducted in Tice Center, we tried to obtain more specific information by limiting the articles to only those produced in the last 10 years and involving Western contexts (Europe and the United States).

Articles and reviews included in this study met the following criteria:

- evaluated parental mediation strategies for children’s Internet use,
- included teenagers or parents of adolescents under the age of 18,
- considered population from Western contexts (EU-US, but not only),
- have been published in peer-reviewed periodicals,
- are English-written,
- have been produced in the last 10 years (since 2011),
- are full text available.

1.3 Results
According to the inclusion criteria, 24 documents were selected. The age range of the population whose use of the internet was studied was between 4 and 20 years although 80% of the analyzed studies focused on the 10-18 age group (Table 2).

**Table 2**  
*Description of studies used in systematic review (N=24)*

<table>
<thead>
<tr>
<th>Authors</th>
<th>Country</th>
<th>Participants</th>
<th>Parental Strategy</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Álvarez et al., 2013</td>
<td>ES</td>
<td>711 parents of children and preadolescents (10-14)</td>
<td>Control and Warmth</td>
<td>Predict online Guidance</td>
</tr>
<tr>
<td>Álvarez-García et al., 2018</td>
<td>ES</td>
<td>946 adolescents (12-18)</td>
<td>Restrictive Mediation and Supervision</td>
<td>Negative (small) relationship with Contact risks</td>
</tr>
<tr>
<td>Álvarez-García et al., 2019</td>
<td>ES</td>
<td>3360 adolescents (11-18)</td>
<td>Controls and Restriction</td>
<td>Protective from Contact risks</td>
</tr>
<tr>
<td>Athanasiades et al., 2016</td>
<td>GR</td>
<td>440 adolescents (12-14)</td>
<td>Active mediation</td>
<td>Not effective</td>
</tr>
<tr>
<td>Baldry et al., 2019</td>
<td>IT</td>
<td>4390 adolescents (13-20)</td>
<td>Controls</td>
<td>No control is a risk factor for boys, high control is a risk factor for girls (Contact, Conduct)</td>
</tr>
<tr>
<td>Bleakley et al., 2016</td>
<td>US</td>
<td>629 adolescents (12–17) and one of their parent</td>
<td>Parental Knowledge, Restriction, Relationship quality</td>
<td>Protective from PIU*</td>
</tr>
<tr>
<td>Study (Year)</td>
<td>Location</td>
<td>Sample Size</td>
<td>Intervention</td>
<td>Findings</td>
</tr>
<tr>
<td>-------------</td>
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</tr>
<tr>
<td>Bosman et al., 2015</td>
<td>EU</td>
<td>25,142 parent-adolescent dyads (9-16)</td>
<td>Restrictions, Active Mediation and Controls</td>
<td>Active Mediation is the only that effectively reduces online risks (Conduct, Contact, Content)</td>
</tr>
<tr>
<td>Byrne et al., 2014</td>
<td>US</td>
<td>454 parent-adolescent dyads (10-16). 94% moms</td>
<td>Permissive parenting, Communication difficulties</td>
<td>Underestimation of risky social interactions</td>
</tr>
<tr>
<td>Collier et al., 2016</td>
<td>US</td>
<td>Children and parents in 57 studies</td>
<td>Restrictions, Active Mediation, Co-use</td>
<td>Restrictive mediation is effective in limiting time. Active mediation reduces aggressive or sexual behavior and substance use. Co-use is associated with more aggressive behavior and time spent online</td>
</tr>
<tr>
<td>Elsaesser et al., 2017</td>
<td>EU-US</td>
<td>Parents and children (10-18) in 23 studies</td>
<td>Warmth, Active mediation</td>
<td>Protective for Contact and Conduct risks</td>
</tr>
<tr>
<td>Fardouly et al., 2018</td>
<td>AU</td>
<td>284 preteens (10-12)</td>
<td>Restrictive Mediation</td>
<td>Benefits for children’s mental health</td>
</tr>
<tr>
<td>Gómez et al., 2017</td>
<td>ES</td>
<td>39,993 adolescents (12-17)</td>
<td>Controls</td>
<td>Less gambling, cyberbullying and PIU*</td>
</tr>
<tr>
<td>Kalmus et al., 2015</td>
<td>EU</td>
<td>1000 children/adolescents (9-16) and one of their parents</td>
<td>Active and Restrictive Mediation</td>
<td>Both associated with less EIU**</td>
</tr>
<tr>
<td>Khurana et al., 2015</td>
<td>USA</td>
<td>629 adolescents 12-17</td>
<td>Controls and Restrictions</td>
<td>Effect of parental controls was greater than parental internet restriction against cyber-victimization</td>
</tr>
<tr>
<td>Livingstone et al., 2017</td>
<td>EU</td>
<td>6400 parents of children (6-14)</td>
<td>Active and Restrictive Mediation</td>
<td>Active: more risks but more opportunities; Restrictive: less risks, but less opportunities</td>
</tr>
<tr>
<td>Study</td>
<td>Region</td>
<td>Sample Size</td>
<td>Type of Mediation</td>
<td>Findings</td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------</td>
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<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Navarro et al., 2013</td>
<td>EU</td>
<td>1068 children (10-12)</td>
<td>Active and Restrictive Mediation</td>
<td>Only supervising software lowered the likelihood of cyber-victimization. Joint creation of rules help lessen online victimization</td>
</tr>
<tr>
<td>Rodríguez-de-Dios et al., 2018</td>
<td>ES</td>
<td>1446 students (12-18)</td>
<td>Restrictive mediation</td>
<td>Less opportunities and less risks (contact, conduct, content)</td>
</tr>
<tr>
<td>Strohmeier et al., 2021</td>
<td>AT</td>
<td>1,018 Austrian adolescents (12-17)</td>
<td>Monitoring and Discussions</td>
<td>Positively associated with Cyber-victimization</td>
</tr>
<tr>
<td>Symons et al., 2020</td>
<td>BE</td>
<td>357 triads (mother, father, adolescent 13-18)</td>
<td>Restrictive Mediation</td>
<td>Reduction of Contact risks</td>
</tr>
<tr>
<td>Vanderhoven et al., 2016</td>
<td>BE</td>
<td>207 adolescents (average age 12.6)</td>
<td>Active Mediation and Co-use</td>
<td>Reduction of Conduct risks</td>
</tr>
<tr>
<td>Wisniewski et al., 2015</td>
<td>US</td>
<td>588 teens (ages 12–17) and one of their parents</td>
<td>Restrictive Mediation</td>
<td>Reduce contact risks but also social opportunities and social skills</td>
</tr>
<tr>
<td>Wright, 2017</td>
<td>US</td>
<td>568 adolescents (average age 13.4)</td>
<td>Active, Restrictive Mediation and Co-vision</td>
<td>Restrictive mediation correlates with less conduct risks but not less contact risks. Co-vision is negatively related to all forms of cyber aggression. Active mediation correlates against victimization but not from perpetration</td>
</tr>
<tr>
<td>Wright et al. 2021</td>
<td>US - EU- AS</td>
<td>5,960 adolescents (12-18)</td>
<td>Active, Restrictive Mediation</td>
<td>Active mediation correlates with problem-focused coping strategies, restrictions with less adolescents’ capability to cope with cyberhate</td>
</tr>
</tbody>
</table>

*PIU: Problematic Internet Use; **EIU: Excessive Internet Use*
Several of the studies we identified (Álvarez-García et al., 2018; Baldry et al., 2019; Barlett & Fennel, 2018; Gómez et al., 2017) show parents as unaware of their children's online activities, or they are perceived as unaware from their children. The research by Byrne and colleagues (2014) also showed that, generally, parents underestimate the possibility that their children can commit risky activities online, for themselves or for others, especially when they consider their children socially more skilled than other children and Barlett and Fennel’s study (2018) highlight that parents tend to overestimate controls and rules they gave to their children and their role as mediators.

Of the papers we analyzed, only two (Athanasiades et al., 2016; Strohmeier et al., 2021) found no beneficial or protective effects of parenting strategies on children's online behavior: Athanasiades and colleagues (2016), in their study of 140 students ages 12 to 14, found that neither parental mediation nor parental empathy were found to be protective in limiting cyberbullying and Strohmeier and colleagues' (2021) shows that parental monitoring practices were weakly positively related to cyber-victimization.

An important role appears to be that of parents' digital skills: children of parents who are daily Internet users have lower Excessive Internet Use (EIU) scores than children whose parents do not use the Internet on a daily basis (Kalmus et al., 2015). Livingstone and colleagues (2017) also found that parents are more restrictive if they rate themselves as less digitally skilled; conversely, the better the parents' skills, as rated by the parents themselves, the more they prefer active mediation.

### 1.3.1 Results about Restrictive mediation

Several studies have found positive effects of restrictive mediation (Álvarez-García et al., 2018; Álvarez-García et al., 2019; Fardouly et al., 2018; Gómez et al., 2017; Kalmus et al., 2015; Khurana et al., 2015; Symons et al., 2020; Wisniewski et al., 2015).

For example, Álvarez-García and colleagues' study (2018), involving 946 Spanish students, showed the existence of a negative correlation ($p < 0.001$) between supervision and parental restrictions and contact and conduct risks. Another Alvarez-Garcia and colleagues' study (2019) showed that parental mediation variables “Restrictions” and “Supervision” correlate with lower risk of cyber-victimization, and that they interacted with a number of other variables: children's impulsivity, for example, correlates negatively with supervision and positively with high-risk online behaviors.
Fardouly and colleagues’ study (2018) involving 284 preadolescents (10-12) and one of their parents showed that children of parents who gave more limits for Internet time reported better levels of mental health and life satisfaction and that this relationship was mediated by making fewer comparisons with other people on social media. Gomez and colleagues (2017) conducted a study involving 39,900 adolescents between 12 and 17 to identify the types of Internet users in Spain. The study identified users with less parental control and restriction as those most at risk of Problematic Internet Use. Other studies (Khurana et al., 2015; Navarro et al., 2013) showed negative correlations between supervision and cyber-victimization. The effect of supervision was significantly greater than that of simple restrictions, which reduced risk experimentation only through the effect of time limits. Symons and colleagues (2020), with their study of 357 triads (mother, father, and adolescent 13-18), found how father and mother’s restrictions to their children's online interactions had a significant effect on reducing online contact with strangers. Finally, Wright (2017), in a study involving 568 adolescents, found that restrictive mediation correlated with less risk of conduct, but not less risk of contact.

Regarding restrictive mediation some controversial findings also appeared: Collier et al. (2016), in a meta-analysis conducted in the United States on 57 studies, found positive correlations between parents’ adoption of restrictive strategies and children’s aggressive behavior and time spent online.

According to the results of Kalmus and colleagues' study (2015), involving approximately 18,000 adolescents 11-16, restrictive mediation is a negative predictor of PIU, but when the adolescents reported negative online experiences, restrictive techniques are associated with an increase in EIU scores. Three European studies (Livingstone et al., 2017; Rodriguez-de-Dios et al., 2018) found similar results: placing limits and restrictions reduces children's exposure to risks, but also their online opportunities, for example using Internet for school purposes, being able to use apps to edit videos, watching movies, using entertainment sites and platforms and listening to music.

In addition, other studies have found some negative effects of restrictive mediation. This type of mediation would limit children’s digital skills (Rodriguez-de-Dios et al., 2018), young people's ability to communicate with others online and manage contact risks (Wisniewski et al., 2015), and coping strategies in dealing with hate speech and cyberbullying (Wright et al., 2021).
1.3.2 Results about Active mediation

Some of the studies found positive outcomes from the use of active or “evaluative” mediation (Bosman et al., 2015; Collier et al., 2016; Elsaesser et al., 2017; Navarro et al., 2013; Wright et al., 2021). For example, Bosman and colleagues (2015), who analyzed unreported data from the Eu Kids Online project, found how active forms of mediation (of Internet use and safety) were less associated with experiencing online risks than restrictive strategies. Collier et al. (2016), in their meta-analysis, found a correlation between active mediation and less problematic offline behaviors, such as involvement in early sexual relationships or substance use. Another important systematic review of 23 studies (Elsaesser et al., 2017), found that the active mediation strategies (in which youth are involved in rule-making with their parents) were more effective than restrictive mediation strategies (in which parents make decisions unilaterally). Even Navarro and colleagues (2013) found that joint creation of rules between parents and children helped to decrease online victimization.

Positive outcomes of active involvement were also found in Vanderhoven and colleagues' study (2016) involving 207 adolescents. These authors have compared the outcomes of two media education interventions: the first conducted on the students alone, and the second conducted on the students along with one of their parents. Having the opportunity to do the intervention with one of the parents was found to be protective and, specifically, it reduced young people’s intentions to commit risky online activities. The positive results of parental involvement were more statistically significant for males. Wright and colleagues' (2021) aimed to assess the outcomes from the types of mediation on children's coping skills by realizing a study of nearly 6,000 adolescents. Results showed a positive relation between active parental mediation and adolescents' coping skills. In this study, family support strengthened the positive relation between active mediation and coping skills and attenuated the negative relationship between parental restrictive mediation and adolescents' use of coping strategies.

In their study involving children and adolescents aged 6 to 14 years in 8 European countries, Livingstone and colleagues (2017) showed how both active and restrictive strategies can have benefits. Specifically, high levels of active mediation associated with low levels of restrictions predicted increased opportunities, but also increased risks that were experienced online. Finally, Wright (2017) found that active mediation correlated negatively with cyber-victimization but was not associated with perpetration of cyberbullying.
1.3.3 Results about Co-use

Only three studies explored co-vision (Collier et al., 2016; Vanderhoven et al., 2016; and Wright et al., 2017). In two of these (Vanderhoven et al., 2016; Wright, 2017), the co-vision strategy was found to lead to significant benefits being associated with less cyberbullying, less exposure to privacy risks, and less perpetration of unsafe behavior in social network activities.

Collier and colleagues’ meta-analysis (2016), however, found that Co-use was associated with more time spent online by young people.

1.3.4 Warmth and openness of communication

Several studies (Barlett & Fennel, 2018; Bleakley et al., 2016; Byrne, et al., 2014; Elsaesser et al., 2017; Kalmus et al., 2015; Wright, 2021) examined the family context, in particular the parent-child relationship and their openness of communication. Barlett and Fennel (2018), for example, conducted a longitudinal study on 96 youth, emphasizing the importance of a more open and sharing-based type of mediation. In their study they found that only “parental ignorance”, that is unawareness of their own children's online activities, predicted children's cyberbullying perpetration. Bleakley and colleagues' (2016) study of 629 U.S. adolescents also found positive outcomes of parental awareness: adolescents who spent more hours online were more likely to have problematic Internet use when their parents failed to correctly estimate their online time; the greater the discrepancy between “actual” and “parental estimated” online time, the greater the risk of youth making problematic Internet use.

High quality of relationship with parents seems to be associated with fewer symptoms of PIU and adolescents who engage in PIU often perceive to live in families with less positive relationships and less parental support (Bleakley et al., 2016).

Byrne and colleagues (2014) conducted a study of 456 parent-child pairs examining parental underestimation of risk: the results of their study show that parents of children who report that it is difficult to talk to their parents about bad things that might happen online are significantly more likely to underestimate their children’s experienced online risks.

Elsaesser and colleagues (2017) found that, in general, adolescents report more communication problems than their parents and lower levels of family satisfaction and cohesion. The study shows how low levels of family cohesion, combined with excessive restrictions, can increase the risks of gambling and cyberbullying. Finally, even Wright and colleagues (2021)
found that parental support significantly moderates the relationships between parental mediation strategies and children's coping strategies.

1.3.5 Children’s individual variables influencing risks

Some of the papers we reviewed examined the differences in parental mediation and risky online activities between males and females. A study conducted in Greece (Athanasiades et al., 2016) showed that males are more often perpetrators of cyberbullying. A recent study conducted in Italy (Baldry et al., 2019) found the same result. Also, Baldry and colleagues (2019) found that, in comparison to females, males reported to be less educated to correct use of social media, and females reported to be victims of cyber-bullying more often than males and to be more controlled by parents in their online activities. Alvarez and colleagues’ study (2013), conducted in Spain with 711 parents, brings an opposite result: how parents of male children applied more restrictions. According to Wright (2017), parents tend to believe that online interactions are potentially riskier for girls than boys, considering girls more vulnerable to online exploitation. An interesting finding on parental controls comes from Baldry and colleagues (2019) who found how an absence of parental controls can be a risk factor for boys, while a high level of parental controls can be a risk factor for girls (in terms of contact and conduct risks).

Bosman and colleagues’ study (2015) suggests that children experiencing difficulties on a physical or intellectual level and whose parents perceive as “discriminated against”, showed a slightly more adventurous or risky online behavior by looking more often for new friends online, sending personal information to strangers, adding more people to the list of friends whom they had never seen before, pretending more often to be a different person online and having more offline meetings with online contacts.

1.4 Discussion and conclusion

The review provided the theoretical foundation for our ultimate goal: the design of a parent intervention aimed at improving parental mediation skills (Chapter three). The main objectives of the review were: 1) assess the variables associated with the various parental mediation strategies described in the literature; 2) to evaluate any risk or protective factors associated with risky Internet use in adolescence.
In general, this scoping review highlights that all types of parental mediation (Restrictive mediation, Active mediation and Co-use) have an effect on children's online behavior, and that these strategies interact with other individual or familiar variables such as child characteristics or parent-child relationship. Specifically, restrictive mediation seems to leads to significant benefits in terms of reduction in contact risks (Álvarez-García et al., 2018; Álvarez-García et al., 2019; Khurana et al., 2015; Livingstone et al., 2017; Rodríguez-de-Dios et al., 2018; Symons et al., 2020), conduct risks (Álvarez-García et al., 2018; Livingstone et al., 2017; Rodríguez-de-Dios et al., 2018; Wright, 2017), content risks (Livingstone et al., 2017; Rodríguez-de-Dios et al., 2018), psychosocial risks such as excessive or PIU (Gomez et al., 2017; Kalmus et al., 2015) and reduction in “comparisons with others” on social media. Low levels of “comparison with others” on social media are generally associated with higher levels of psychological well-being (Fardouly et al., 2018).

Some studies also emphasize the importance and the positive associations on well being and risks experiencing of active mediation strategy (Bosman et al., 2015; Collier et al., 2016; Elsaesser et al., 2017; Navarro et al., 2013; Wright et al., 2021). This mediation strategy seems to be associated with a reduction in problematic online behaviors (Bosman et al., 2015; Elsaesser et al., 2017; Navarro et al., 2013), a reduction in risky behaviors in offline contexts (substance use, sexual intercourse at a young age) (Collier et al., 2016) and an increased use of coping strategies related to cyberbullying and inappropriate content (Wright, 2021). Using active mediation, parents can discuss with their children appropriate and realistic attitudes and behaviors in using technological devices, helping youth to develop a more critical view about the online world.

There are also controversial findings with respect to these mediation strategies, however, Indeed, some studies have pointed out that applying high restrictions and low active mediation can limit children's exposure to online risks but also their opportunities in using Internet (Livingstone et al., 2017), their digital skills (Rodriguez-de-Dios et al., 2018), and their coping skills (Wisniewski et al., 2015; Wright et al., 2021). As reported by Kalmus and colleagues (2015) it is possible that, while realizing their child is spending too much time online, parents using restrictive techniques may not have sufficient digital or communication skills to do more than monitor or rely on technical solutions. This would limit also limit children’s development of good digital skills or their ability to experience opportunities on the Web.

Few studies in the literature have focused on the evaluation of co-use, perhaps because this strategy is easily used together with others, a few authors have evaluated it in its specificity. Given the controversial results about this strategy, it is likely that its association with online risks depend
on the type of co-use (active or passive) and, as evidenced with respect to other strategies, it is possible that the co-use interacts with other variables leading to more or less positive youth’s outcomes.

Studies that evaluate the family context seem to agree that open parent-child communication and a good relationship with parents are associated with lower exposure to online risks (Barlett & Fennel, 2018; Bleakley et al., 2016; Byrne et al., 2014; Elsaesser et al., 2017). Knowing more about their own children's online activities seems to be an important aspect of practicing mediation strategies, as well as having good digital skills (Kalmus et al., 2015). Also, it seems that adolescents will talk less with their own parents about the difficulties they experience online if they think that their parents are digitally incompetent or that they only tend to interrupt their activities and connections (Baldry et al., 2019). Open communication between parents and children appears to be a very protective dimension, because the inability to communicate increases the likelihood that parents underestimates whether their child has been contacted by a stranger or experiences other risks in the online environment (Byrne et al., 2014). According to Bleakley and colleagues (2016) and Barlett and Fennel's studies (2018), this mismatch between what the child does and what the parent thinks may lead to risky use of the Web.

Promoting interventions focused on communication between parents and children, in order to increase what they really know about their children’s activities online, can be an important preventive action. Parents who are not yet digitally able or who do not use social networks should be encouraged to familiarize themselves with these devices, so that they can be able to consciously guide their children in the best use of these tools. Despite the challenges, the research shows that, for both males and females, parental mediation is an important factor to increase youth’s opportunities stemming from the use of internet and digital communication tools.

Finally, it should be noticed that a growing percentage of young people with intellectual or developmental problems use the Internet and their number is likely to further increase (Del Rio et al., 2019). These young people seem to be more vulnerable, especially with regard to sexual solicitation, therefore concentrating digital education efforts precisely on this type of users becomes increasingly important (Del Rio et al., 2019).

This review of the literature is not without limits: first, the literature on parents' role in children and adolescents’ Internet use is mostly composed of correlational studies, making conclusions on causality difficult. In addition, this review aims to represent the theoretical basis for an intervention for parents that will take place in Italy, so it has focused on a specific context,
the western one, without considering Asian or South American countries and without considering the differences that exist within the same western countries. In addition, many studies have involved only adolescent children, without considering parents' perspectives on the topic of parental mediation, an issue that touches them closely.

This review, however, helps psychologists and researchers to have clearer ideas with respect to what the associations of different parental mediation strategies might be, showing specific data on their different uses and showing some contrasts with respect to the use of an overly rigid and restrictive mode of mediation. It also emphasizes the importance of relationships with parents, a variable that is also crucial in the area of Web risks, positively correlating with a more functional and less risky use of social networks.

Subsequent studies could focus on children's ages and how age can influence family relationships and mediation strategies to generate more specific knowledge. With respect to risk factors, more studies examining Internet use by more vulnerable youths should be realized, so that knowledge useful to psychologists and families can be generated. Forward, future studies could investigate how the various mediation strategies, interacting with individual and relational variables, can generate a more or less safe use of Internet.
Chapter 2:
Online vulnerability. Individual or family risk factors

2.1 Introduction

The review we presented in Chapter one of this thesis emphasized how various types of parental mediation impact youth's use of the Internet. In particular, the review presented many studies that investigated the associations of active mediation and restrictive mediation with the exposure to online risks, showing that restrictive mediation reduces risk but negatively impacts digital competency and youths’ coping skills. Active mediation, on the other hand, although it does not significantly reduce risks, leads to improvements in coping skills, digital skills, and use of the Internet for positive purposes.

The review also suggests the need to study in greater depth how individual and family variables might influence children's and adolescents' Internet use. Specifically, it highlighted how some more vulnerable children may use the Web in more dangerous ways (Bosman et al., 2015) and how mediating parental strategies interconnect with relational variables and individual child or parent characteristics, promoting or limiting young people's ability to use Internet properly (Barlett & Fennel, 2018).

Considering that Italian studies regarding the online lives of children with Special Educational Needs (SENs) are limited, this study aims to try to shed light on some points highlighted by the analysis of the literature, in particular, in the Italian context: (1) whether vulnerable children, and in particular those with SENs, use the Internet excessively or more dangerously than children considered to have typical development; (2) whether parental mediation strategies are associated with more or less risky use of the Internet in the two groups of children (with and without SENs) and (3) whether their frequency of use varies in the two groups; (4) how parental strategies interact with other variables (related to the child, to the parent, to parent-child relationships). In addition, given the Covid-19 emergence that occurred during the data collection, we chose to (5) assess the impact of the lockdown period on children's Internet use.

2.1.1 Online vulnerability

As mentioned in the review (chapter 1), the study of Bosman and colleagues (2015), for example, highlighted how children who experienced discrimination for a variety of reasons (social
inequality, academic underachievement, physical disability, mental illness) used the Internet in a more adventurous way. Vulnerability is not easy to define, and this difficulty increases considering that this definition should guide the work of clinicians, teachers, and social workers in multiple contexts.

In public health literature and practice, adjectives such as “vulnerable”, “susceptible” and “frail” are used interchangeably without prior consensus on their meaning, especially in relation to chronic diseases and the care models that address them. This confusion is also reflected in the agenda of those who deal with policies to reduce health inequalities, where the adjective is used either to explain the mechanisms that intermediate the adverse health effects of social disadvantage or to identify operationally groups of people deserving priority attention by policies.

According to Pastore (2018), vulnerability refers to a set of factors that determine the degree to which individuals' existences are endangered by natural or social phenomena. This concept has to do with physical, social, economic, and environmental conditions and processes that increase the susceptibility of a person or group to the impact of risks.

Several studies conducted in years prior to the mass deployment of the Internet and smartphones, tended to consider "vulnerable children" those who lived under disadvantageous family conditions, such as being orphaned or having a parent who was ill, violent, or unable to care for them, or children who lived in poverty, with limited access to basic resources such as food, education, and emotional support (Moser, 1998; Skinner et al., 2006).

With the enormous prevalence of new technologies, today's world has to consider within the definition of vulnerability the digital component of the lives of children, youth, and adults. "Online vulnerability" can be understood as an individual's likelihood of experiencing harm to their physical or psychological well-being or reputation as a result of experiences experienced online (Davidson & Martellozzo, 2013). Some studies have suggested that to best understand youth's vulnerability to online risks, one need only to observe what happened to them in their offline lives: at school, with family, and with friends, finding it difficult or ineffective to separate the online and offline realms of their lives (McGerty, 2000; Slater, 2002).

Indeed, from the earliest studies on the topic, it was argued that relationships, risks, and dynamics experienced online represented a reflection or simple continuation of those experienced offline (Wellman et al., 2001). A study by Livingstone and Helsper (2007) of nearly 1,500 students attempted to answer the research question about the strength of the link between offline and online vulnerability, leading to controversial results: children and adolescents who perceived themselves
as less satisfied with their offline lives, if they had good digital skills, tended to feel safer online, appreciating the potential for anonymous communication offered by the Internet and the opportunity to exchange secrets, reveal intimate aspects of themselves, and form friendships; on the other hand, they were more at risk of providing personal information to malicious people and showing up for potentially dangerous offline meetings with contacts they knew online. Children and young people who were more vulnerable in their offline lives thus seemed to enjoy digital-mediated communication more but were exposed to more risks during this use.

As described in the previous chapter, the risks of the Web are not limited to what can happen to an individual while using the Internet (e.g., cyberbullying, viewing inappropriate content, grooming), but also to those social and psychological consequences that can result from excessive or inappropriate use of the Web.

There are many authors who have analyzed the relationship between offline difficulties and online vulnerability, focusing on certain individual characteristics that seemed to influence Internet use. Kim and colleagues (2018), with their research conducted on 653 Korean high school students, found how individuals with difficulty establishing interpersonal relationships (due to shyness, anxiety, or difficulty with social adjustment) represented a population particularly vulnerable to Problematic Internet Use (PIU). Lee and colleagues (2018) found that depression and total difficulties (as measured by the SDQ parenting scale) were significantly associated with problematic Internet use (PIU).

An Italian study (Munno et al., 2017) also highlights how schizophrenia and psychotic symptoms are strongly associated with PIU and Internet addiction (IA). The same study also showed how male gender, attending a vocational school, and having experienced an unhappy childhood represented risk factors for developing IA. A study by Mallik & Radwan (2020) suggested that 27.3% of cyberbullying victims suffered from psychiatric disorders ($p = 0.012$) and that emotional and behavioral disorders were significantly higher among cyberbullying victims. Results from a study of 3000 students aged 12 to 25 years (Bener & Bhugra, 2013) also suggested that depression was strongly associated with problematic Internet use and that a life history punctuated by negative events was a risk factor. An Italian study (Brighi et al., 2019) of 3600 students highlights that negative emotional symptoms (such as social withdrawal and apathy) represent risk factors for cyberbullying perpetration and PIU. A 2011 study (Kormas et al., 2011) of approximately 900 Greek adolescents found that PIU was significantly associated with conduct problems and hyperactivity. This finding was confirmed by a Turkish study (Cakmak & Gul,
2018) and a South Korean study conducted on 650 adolescents (Choi et al., 2019). Estevez and colleagues (2017) also found that the level of emotional regulation was predictive of many addictions such as gambling disorder, video game addiction, and PIU.

All these authors seem to suggest how some personal and psychological characteristics can be considered risk factors for an improper use of the network and new technologies, confirming the hypothesis that a difficulty experienced in offline life can spill over into the online context, leading people to a less functional, excessive or dangerous use of the network.

2.1.2 The concept of Special Educational Needs (SEN)

The psychological, social or emotional difficulties referred to in the preceding paragraph concern a very high percentage of young people, including both those with specific diagnoses (such as specific learning disorder - SLD, or attention disorders - ADHD) and those with other emotional and behavioral difficulties that can limit opportunities and social and scholastic integration. These characteristics of vulnerability can make those who experience them fall into the category of so-called "Special Educational Needs" (SEN).

The concept of SEN already appears in official UNESCO documents in 1997, in UK legislation in 2001 and in European Agency for Development in Special Needs Education documents in 2003. These documents show the tendency already at the end of the 90s, to consider as subjects with SEN all people of developmental age who manifest psychological, learning or behavioral difficulties, even different from disability.

In Italy, the expression “Special Educational Needs - SEN” ("Bisogni Educativi Speciali - BES)" began to be used after the issuance of the Ministerial Directive of 27 December 2012 "Intervention tools for pupils with Special Educational Needs and territorial organization for school inclusion".

Contrary to what one might think, SEN does not represent a diagnostic category and does not in itself identify a disorder, since any student can manifest the need for individualized education during his or her course of study. The special educational needs, in fact, can also be temporary and can be applied by teachers as a result of requests from specialists, the family of the child or their own observations. Following the decision of the teaching staff to establish a SEN, the child may be entitled to individualized learning, through the application of dispensatory or compensatory measures by teachers. Many children with SEN, for example, can take advantage of scheduled questions, a lower study load or different ways of conducting school tests. Many pupils
today exhibit such vulnerabilities, from the more "traditional" specific learning disorder (SLD), to attention deficit disorder (ADD) with or without hyperactivity, to text comprehension disorders, visual-spatial disorders, motor difficulties, and emotional difficulties such as anxiety or obsessive compulsive disorders; however, pupils who do not fall into any of these diagnostic categories, who manifest "only" difficult, slowed learning and, consequently, poor school performance, can also benefit from such measures (Ianes & Cramerotti, 2013).

In 2012, the European Commission issued a specific document regarding the situation of children with special educational needs, showing that, worldwide, children with at least one special educational need numbered around 800 million, of 15 million in Europe (European Commission, 2012).

Specifically, 2.5% to 3.5% of Italian students have a diagnosis of a Specific Learning Disorder (SLD) such as dyslexia, dyscalculia, dysgraphia, and dysorthographia (MIUR, 2015) and approximately 9% of all Italian students have a special educational need other than disability (Istat, 2020). In Italy, Article 7 of Law No. 517 of 1977 permanently abolished the differential classes provided by Law No. In Italy, art. 7 of Law n. 517/1977 definitively abolished the differential classes provided by Law n. 1859 of 1962, for "maladjusted pupils", with a farsighted and avant-garde choice compared to the situation in other European countries: in 1997, for example, in Germany it was stated that "a general exclusion of the possibility of training and education of disabled pupils with non-disabled pupils may no longer be constitutionally justified" and in various European countries, even today, the number of pupils who are provided with special education in separate classes is very high compared to Italy.

The attention paid to Special Educational Needs has progressively increased, probably as a result of a more careful observation of children by teachers and parents and the greater recognition, compared to the past, of many disorders that interfere with learning.

Compared to the school year 2017/2018, in the year 2019/2020, in Italy, the presence of students with Special Educational Needs within the school has increased by 29%, with an increase of about sixty thousand people) (Istat, 2020).

2.1.3 Social-emotional features of children with SEN

As early as the 1990s and early 2000s, many authors investigated the social and emotional situation of students with Special Educational Needs, particularly with Specific Learning Disabilities (SLD), suggesting that these young people (children and adolescents), compared to
peers, exhibited impaired social skills (Kavale & Forness 1996), experienced more social rejection (Greenham 1999; Kuhne & Wiener 2000, Wiener & Schneider, 2002), and were considered part of a lower social "status" (Greenham, 1999). In their meta-analysis, Kavale and Forness (1996) showed that 8 out of 10 children with SLD were rated by peers as rejected or deficient in social and problem-solving skills. Other authors showed how they were less popular, less cooperative, and less often chosen as friends by their classmates (Kavale & Forness 1996; Kuhne & Wiener 2000). A U.S. study (Hartley et al., 2015) revealed that students attending special education classes were more prone to victimization and the perpetration of bullying.

Recent studies have shown that internalizing symptoms (such as isolation and apathy) or externalizing symptoms (such as conduct disorders), loneliness, and low self-esteem (Kokkinos & Antoniadou, 2013; Wilson et al., 2009) and low-quality relationships with peers (Margali & Raskind, 2013) are more common among children with Special Educational Needs. Some researchers suggest that these outcomes may stem from the stigma frequently associated with children with SEN (Chan et al., 2017), who may internalize these prejudices, even beginning to self-perceive themselves in a more negative way. An Italian study (Sarti et al., 2019) gives an explanation of these negative outcomes related to the understanding of social situations, which, in students with SLD is impaired.

It is well known that acceptance by peers is essential for the construction of the identity of adolescents and has a strong influence on their psychological well-being (La Greca & Harrison, 2005); experiencing difficulties in this area of functioning is likely to further affect the school engagement and overall well-being of this category of students, generating a reciprocal influence effect that could become difficult to curb.

2.1.4 Family relationships of children with SEN

Even with respect to family life, boys with SEN seem to experience more difficult relationships with their parents (Al-Yagon, 2012), who appear to experience higher levels of stress than parents of boys and girls without special educational needs (Theule et al., 2013).

As early as 1991, a study showed that mothers of hyperactive children were less rewarding, more directive, and expressed more disapproval than mothers in the control group (Danforth et al., 1991).

A later study (Edwards et al., 2001) suggests that parents of adolescents with ADHD perceived that they had significantly more conflict problems, more anger during these conflicts,
and higher levels of negative communication with their children. Such levels of conflict and stress may influence the level and frequency of communication between parents and children with SEN, but few studies have addressed this specific issue.

One such study (Huang et al., 2020) showed that the frequency of communication between children with dyslexia and their parents was lower than that experienced by families of children without SEN. The same study also concluded that the parent-child relationship was more often rated as "normal" or "bad" by parents of children with dyslexia than the control group. Several researchers have also found that children with anxiety and obsessive symptoms were more often receiving an authoritarian or neglectful parenting style from their parents (Timpano et al., 2010; Wilcox et al., 2008).

Many psychologists argue that limited communication or inadequate parenting styles could contribute to children's feelings of insecurity or negatively affect their personality development (Noel et al., 2008). Moreover, the differences in parenting styles found in parents of children with special education needs could also persist in online contexts and lead to different parental mediation strategies of technological devices and Internet use.

2.1.5 Online risks of children with SEN: a review of the literature

The emotional, social, or family issues and reduced social support we discussed in the previous sections could lead adolescents with special education needs to particularly problematic use of new technologies, which, in turn, could increase the intensity of their difficulties (Sarti et al., 2019). Some studies suggest that children and adolescents with special educational needs are found to be more frequent seekers (Englander, 2012) and receivers (Livingstone & Gorzig, 2012; Good & Fang, 2015) of online sexual requests and, more often, victims and perpetrators of cyberbullying (Beckman et al, 2020). Del Rio and colleagues (2019) aimed to study the phenomenon of online risks on children with SEN using data from the Spanish Net Children Go Mobile project. The authors focused on a sample group composed of 61 minors with various diagnosed difficulties: learning problems (32), behavioral problems (6), disabilities (3), physical illnesses (3), mental disorders (6) or other difficulties (11) showing that these minors had visited suicide and self-harm websites significantly more frequently than peers who did not report the same problems, 22.7% versus 7.8% of peers, and 25% versus 15.5%, respectively.

A study by Englander (2012) also reports that adolescents who post sexual content online are more likely to be in the category of youth with special educational needs. Normand and
Sallafranque-St-Louis in their review of the literature found similar results: risk factors associated with higher rates of cyberbullying, cyber victimization, and time spent online were found to be physical or intellectual disabilities and depressive symptoms. The study by Bosman and colleagues also suggested that children with physical or intellectual impairments and perceived as "discriminated against" by their parents, experienced more online risks (sexting, meeting unknown contacts, and cyber victimization).

Some authors have tried to give explanations for the phenomenon: according to Good and Fang (2015), any difficulties experienced by this category of minors in understanding social events could lead to a lack of threat perception of some messages or difficulties in controlling impulses and responses to be implemented. Helsper and Smahel's (2019) study suggests how it is possible that children with SEN also experience more risk online due to their lower levels of digital skills.

With respect to parental mediation practices of Internet use, Del Rio and colleagues (2019) showed that the frequency of parental mediation practices on Internet use received by these children was lower than that received by typically developing children.

A study (Barringer-Brown, 2015) also revealed that 57% of parents of children with SEN or SLD do not talk about safe technology with their children, 53% do not monitor the websites their children visit, while 38% do not limit the amount of time their children use the Internet, and at the same time, 55% of SEN/SLD do not talk to their parents about their online activities and 45% do not show their parents their profile information.

In 2019, we conducted a survey at the Tice Center, preliminary to this study, to understand whether children with SEN followed at our center were more vulnerable to online risks than a control group without special educational needs (Cavallini & Cavallini, 2021) (Fig. 1).
Fig. 1

Percentage of children with and without SEN exposed to online risks (Cavallini & Cavallini, 2021)

The results of this study suggested that we should explore this issue further, showing a slight difference in the exposure to online risks between youth with and without SEN. In particular, it seems that boys with SENs were more frequently perpetrators or victims of cyberbullying, visited dangerous sites more frequently (showing drug use, ways to get physical pain or extreme thinness) and, above all, received sexual requests online more often. It is not easy to give an explanation for these phenomena: it is possible that the people who contact them know them in their offline lives and are aware of their greater vulnerability, but it is also presumable that children with BES show greater vulnerability when using social networks through the sharing of their content.

A number of agencies interact with vulnerable children, yet an analysis of responses by Street and Katz (2016) found that, often, these agencies do not have the specialized training necessary to deal with the complexities of vulnerable children online, do not collect data, and are not equipped with appropriate assessment tools to evaluate skills and coping strategies in the virtual world.

2.1.6 The effect of the pandemic on young people’s Internet use

The coronavirus pandemic is the first one we have experienced online. The Internet, which allows us widespread communication capacity, has been a relentless source of information, informing the global population daily about the numbers of sick and dead, defined with pinpoint accuracy every day. As child protection agencies have warned, this mass consumption of data on the epidemic situation can generate anxiety, panic and depression. These issues may be experienced much more intensely in youth who already evidenced previous poor mental health
and who have come to experience a strong vulnerability to suicidal ideation and suicide attempts (Hill et al., 2021).

The coronavirus pandemic (COVID-19) significantly disrupted normal activities globally. Stay-at-home mandates and quarantines have increased consumption of digital entertainment, particularly online gaming and related activities (e.g., watching extreme sports and streaming video games) (Javed, 2020; Pérez-Carbonell et al., 2020).

In addition, the closure of schools imposed during the Covid-19 pandemic forced teachers to create and use online learning environments, and this had consequences for students and families, given that such online activities required appropriate digital skills and radical changes to usual teaching and learning strategies. Many families also faced the challenge of limited availability of digital devices or adequately fast connections at home.

Given this background, there is good reason to think that this pandemic has disproportionately affected children with SEN and their families, leading to negative implications for their mental health. In fact, parents of students with SEN have reported experiencing many difficulties in supporting and motivating their children's online learning (Azoulay, 2020).

Verizon, a U.S.-based telecommunications provider, reported a 75% increase in online gaming activity coinciding with initial directives to stay home (Pantling, 2020), and in Italy, a 70% increase in Internet traffic related to Fortnite gaming was reported (Lepido & Rolander, 2020).

Not only has youth's time on the Internet increased significantly, but it appears that the activities and types of content accessed during the months of confinement have also changed.

Looking at the search data on Google Trends, it is in fact possible to observe that the search for the term "Tiktok challenge", sometimes risky challenges proposed by some users on the famous social network TikTok, has grown considerably worldwide after the implementation of the social isolation measure (Figure 1.1).

The search for the term "Omegle," an online chat website that allows users aged 13 and older to communicate with people from all over the world without having to register, also grew significantly corresponding to the beginning of the confinement period (Figure 1.2).
Figure 1.1

Search interest for the term "Tik Tok Challenge" before and during the lockdown months

Figure 1.2

Research interest in the term "Omegle" before and during lockdown months

2.2 The current study

Many studies show the vulnerability of children with Special Educational Needs (SEN) in online contexts and the protective role of some parental practices, however, there is little knowledge about these issues in the Italian context. The objectives of this study, therefore, are to assess the exposure to online risks of children with and without Special Educational Needs (SEN) and any differences between children with and without SEN with respect to risks experienced online and parental mediation strategies. Considering that many children may have difficulties in some specific
areas while not falling into the category of SEN, our study also aims to investigate which areas of difficulty are most associated with risky Internet use.

Furthermore, with this study I want to investigate the interactions between individual characteristics, parental mediation strategies, and exposure to online risks. More specifically, the objectives of this study are:

- Objective 1: Assess the difference in offline and online vulnerability between youth with and without SEN;
- Objective 2: Deepen, in the Italian context, which individual or family variables correlate with greater exposure to online risks among youth;
- Objective 3: Assess frequency and correlates of parental mediation strategies, places of Internet use, and parental digital skill level within the two groups (SEN and non-SEN);
- Objective 4: In light of the findings from the review (Chapter 1) and the literature on online vulnerability, explore whether parental mediation strategies moderate the association of individual/family characteristics and exposure to online risks.
- Objective 5: A secondary objective is to assess parents' perceptions of the Internet use of children (with and without SEN) during the lockdown months.

We hypothesize, in line with preexisting studies (Del Rio et al., 2019) that children with SEN would experience more difficulties in using the Internet functionally and, in particular, that certain characteristics, specific to children (such as school and social adjustment) or concerning the family climate, significantly affect parental mediation strategies and the risks experienced online.

In addition, we expect that the lock-down period not only affected an increase in youth's online time, but also the quality of online activities performed, leading youth to use the Internet less safely, especially for those experiencing emotional and or school-related difficulties.

2.2.1 Methodology

The study received ethical approval from the Catholic University of the Sacred Heart and approval from the Board of Directors of Centro Tice. Eighteen schools in the province of Milan and Piacenza (15 middle schools and 3 high schools) and six learning and psychology centers (Centro Tice and 5 other centers in Northern Italy connected with Tice) were contacted for the study. All the learning centers in Northern Italy contacted participated in the data collection. Of the 18 schools contacted, however, only two (both middle schools) responded to the knowledge email agreeing to participate in the research, one responded by refusing to participate due to
organizational difficulties related to the pandemic, and 15 never responded to the first contact email.

The two schools that agreed to participate were asked to disseminate the research explanation forms and the two informed consent forms (one for parent participation and the other for child participation) to parents. Participating parents were emailed links to the questionnaires (one for one of the parents and one for their son/daughter) and, in consultation with the institutions' teachers, online sessions were held for supervised completion of the children's questionnaires by the researcher. Parents' questionnaires and questionnaires answered by their respective children were linked to each other through an anonymous code self-produced by the parents and sent by them to their child.

In the meantime, the explanation of the research was disseminated at the Tice Center and its associated centers located throughout Italy (Laps Center - Codogno, Five Center - Rome, Ribes Center - Broni and Five Center - Castel S. Giovanni). The psychologists - coordinators of the various centers were trained on the study and administration of questionnaires to children and parents. Since the sample consisted also of very young preadolescents (11-12 years old), it was decided to ask questions about the risks of content (viewing of dangerous sites) only to their parents (checklist from Net Children Go Mobile) (Mascheroni & Ólafsson, 2014).

2.2.2 Measures

For parents:
- Demographic information: gender, place of birth, place of birth of the child, age of the child, gender of the child, possible diagnosis or presence of Special Educational Needs (SENs) in the child;
- Information about internet use: parents were asked to answer questions about internet use, in particular: "To your knowledge, which social networks or platforms does your son/daughter use the most?", "Do you (parent) have at least one profile on a social network?", "If yes, are you a friend or follower of your son/daughter?". To this last question, in addition to "yes" and "no", the possibility of answering "I follow him/her, but I know that he/she hides some content from me" was added.
- Places of Internet use: the question involved choosing a response with respect to the child's places of Internet use (in the bedroom, in a visible location in the home, in any space in the
home with a smartphone or I-pad, in the home or outside the home with a smartphone or Ipad).

- Parental mediation: checklist from Net Children Go Mobile (Mascheroni & Ólafsson, 2014), Parent Form Q. The scale measures mediation, monitoring, and parental concerns. Parents could choose the options "often", "sometimes" and "never", to answer questions such as, "How often do you do the following activities with your son/daughter: talk with him/her about what you can and cannot do on the internet, stay close to him/her when he/she uses the internet.. ", "To what extent is your child allowed to do the following activities: download music or movies from the internet, Watch videos on the internet (ex. Youtube)", "I check my child's search history" etc. Finally, they were asked to indicate to which of the listed eventualities they thought their child was most exposed. Examples of eventualities were: "coming across inappropriate material on the internet without my control", "being contacted by strangers on the internet", "being isolated from other kids", "being bullied/cyberbullied" etc.

- Online risks: Checklist from Net Children Go mobile (ibid.). Parents were asked how many times in the past year different situations had happened to their child. Parents could answer "often," "only 1/2 the time," or "never." The situations listed were, for example: "someone has excluded him/her from some chat or group on social networks", "he/she has been treated offensively on the internet by another boy or girl", "someone he/she met online has asked him/her to meet him/her in person", "he/she has made fun of someone on social networks/chat" etc.

- Rules imposed: parents were asked to select from a checklist all the rules they had established with respect to the Internet use of their children, for example: "I have indicated which sites he can visit and which activities he can do", "I have forbidden him to spread his photos or family photos", "I have recommended him not to connect alone without an adult/parent" etc. The rules were chosen from those listed in the Net Children go Mobile battery (Mascheroni & Ólafsson, 2014).

- Strengths and Difficulties Questionnaire - SDQ (Goodman, 1997): a 25-item questionnaire that explores the most important domains of child psychopathology and personal strengths. It consists of five subscales of five items each: emotional symptoms, conduct problems, hyperactivity-disattention, problematic relationships with peers, and prosocial behavior. scores were calculated by finding the average of the individual subscales. There is a version
for parents, one for teachers, and one for the youth themselves. The version used in this study was the parent version. The questionnaire asks them to indicate one of the three boxes "not true", "partially true" and "absolutely true" for each of the sentences referring to their child, for example: "he is respectful of the feelings of others", "he is restless, hyperactive, unable to sit still for long", "he often has fits of rage or is in a bad mood "etc. Scores were calculated by summing the items for each subscale. Cronbach's Alpha showed good levels of reliability of the five subscales: $\alpha = .72$ for emotional symptoms, $\alpha = .62$ for behavioral problems, $\alpha = .68$ for hyperactivity and inattention, $\alpha = .67$ for problematic relationships with peers, and $\alpha = .67$ for prosocial behavior.

- Digital skills compared to children: parents were asked to indicate how expert they felt they were on the Internet compared to their children in various areas. The question asked was, "in the various domains how proficient do you feel you are at using the Internet?" Parents could choose between three answers: "better than my child", "like my child", "worse than my child". The areas indicated were: "To search for information", "To search or contact people privately on social networks", "To download programs/music/movies", "To download antivirus programs", "To organize trips/holidays". The total score of the scale has been calculated with the sum of the single answers.

- Internet use and parental controls during lockdown months. Parents were asked to respond to the questions, "During the lockdown months (March and April 2020)."Your son/daughter's internet use (excluding time spent on online classes)": "increased", "remained the same", "decreased"; I have "more"/"less"/"unchanged" checks on my child's internet use"; Your child's Internet use was: "More negative: spent too much time online or engaged in more risky or inappropriate activities there than before the lockdown"/"unchanged from the previous period"/"more positive: used the web to stay in touch with friends or looking for positive, creative activities to pass the time". Items were considered individually to assess amount of children's online time and parental controls, and quality of children's online activities during the lockdown months.

For children:

- Demographic information: age, gender, place of birth, any diagnosis or presence of Special Educational Needs,
- Questions about social networks and online games used: children were asked to choose from a list the social networks or games most often used and were specified to add any other social networks or online games they used.

- Florence CyberBullying - CyberVictimization Scales (FCBVSs) (Palladino et al., 2015): this measure consists of two scales, one for cyberbullying and one for cybervictimization. Participants were asked how often they had experienced particular behaviors/events during the past two months. Each item was rated on a 5-point scale, where 1 = "never," 2 = "once or twice," 3 = "once or twice a month," 4 = "once a week," and 5 = "several times a week." The two scales consisted of seven items for written-verbal, four items for visual, three items for exclusion, and four items for impersonation. The scales were introduced by the following statement, "Cyberbullying is a new form of bullying, involving the use of text messages, photos and videos, phone calls, and emails. another student." Subscales were averaged across individual items. Cronbach's Alpha showed good levels of reliability of the five subscales: $\alpha = .67$ for cyberbullying and $\alpha = .65$ for cybervictimization.

- Generalized Problematic Internet Use Scale 2 (GPIUS2) is one of the few theoretically driven instruments used to measure problematic Internet use (PIU). It consists of 15 items and investigates five dimensions: (a) POSI, which is defined as the belief that one is more effective and safer during online than face-to-face interpersonal interactions; (b) mood regulation, which concerns the motivation to use the Internet to alleviate distressing feelings (e.g., "I used the Internet to feel better when I was down"); (c) absence of self-regulation, which consists of a compulsive use dimension-the inability to control or regulate one's online behavior (e.g., "I find it difficult to control my Internet use"); (d) a cognitive preoccupation dimension, which describes obsessive thinking about the online world (e.g., "I obsessively think about going online when I am offline"); and (e) negative outcomes, which describes the extent to which an individual experiences personal, social, and professional problems resulting from Internet use (e.g., “I missed social engagements or activities because of my Internet use”; Fioravanti et al., 2013); Youth can indicate their level of agreement on a likert scale ranging from 1 to 8. Cronbach's Alpha showed good levels of reliability of the five subscales. $\alpha = .76$ for POSI, $\alpha = .73$ for mood regulation, $\alpha = .73$ for cognitive concern, $\alpha = .77$ for compulsive use, $\alpha = .61$ for negative outcomes.

- Analysis of Cognitive-Emotional Indicators of School Success (ACESS) (Vermigli, 2002). This measure is a multidimensional questionnaire, consisting of 48 items grouped in 5
subscales measuring: 1) the ability to adapt to school activities (understood as the result between the value judgment expressed by others and the self-perception of one's own scholastic abilities); 2) emotionality (which in adolescence can often be conditioned by physiological and relational factors); 3) bodily identity (i.e. the perception of how much one feels accepted in one's physical appearance); 4) social adaptation (the awareness of how much one is sought after, loved and accepted by others); 5) family relationships (understood as a constant point of reference from which to obtain the necessary support to face new experiences). Adolescents can choose "absolutely true," "true," "false," or "absolutely false". Through these measures, it is possible to identify areas in which boys and girls (11-19) may experience difficulties that risk compromising their success in school, in terms of performance and overall good adjustment. The subscales have been calculated with the average of the various items that compose them. Cronbach's Alpha showed good levels of reliability of the five subscales. \( \alpha = .89 \) for school adjustment, \( \alpha = .88 \) emotionality, \( \alpha = .69 \) for bodily identity, \( \alpha = .76 \) for social adjustment, \( \alpha = .86 \) for family relationships.

### 2.2.3 Study Participants

A total of 119 parents (90.8% female, only one parent per child) participated in the study, of whom 66% reported having a child without a diagnosis, while 34% reported a diagnosis in their child(ren). Parents of children with Special Educational Needs came from the Tice Center and other learning centers for the most part \( n = 27 \), while others \( n = 14 \) were part of the sample from middle schools. The children without SEN were all 78 from middle schools. Participating parents had children aged 11 to 15 years \( (M: 12.97; SD : 1.47) \).

Among the children with SEN, 64% had specific learning disabilities (ASD), 17.5% had attention-deficit/hyperactivity disorder (ADHD), 11% had emotional difficulties (ED) (anxiety disorders, anger management difficulties), 5% had obsessive compulsive disorder (OCD), and 2.5% had conduct disorders (CD) (Figure 2.1).

Data from 70 of the children (56.3% male, table 3) who received parental approval to participate in the study (60.6% without a diagnosis, 39.4% with a diagnosis) were added to the parental data. Among the diagnoses of the participating boys, 82.2% were diagnoses of ASD, 14% ADHD, and a smaller percentage obsessive compulsive disorder (OCD) (Figure 2.2).

Participating parents had children aged 11 to 15 years \( (M: 12.97; SD : 1.47) \).
Almost all participants (89.9% of parents and 93.3% of children) were born in Italy, and there were no significant differences in the frequency of children with SEN within the two gender groups (42% of males and 35% of females had SEN), \( t (117) = 2.53, p = 0.430 \). Results on gender and age of children are described in Table 3.
### 2.3 Results

The analyses were conducted using both parent-reported and child-reported data with respect to online risks and vulnerability characteristics (ACESS questionnaire for children and SDQ questionnaire for parents). All data were analyzed with SPSS and Process version 3.3.

#### 2.3.1 Objective 1: Assess the difference in offline and online vulnerability between youth with and without SEN

**2.3.1.1 Offline vulnerability according to parents' perception - Questionnaire SDQ.**

Parents reported (SDQ), that their children with SEN exhibited more emotional symptoms ($p = .009$) [-.87, -.121], behavioral problems ($p = .003$) [-.94, -.19], hyperactivity and inattention ($p = .000$) [-1.1, -.339], and problematic relationships with peers ($p = .033$) [-.78, -.034], whereas there are no significant differences between SEN and non-SEN in terms of pro-social behavior (Table 4).

### Table 3

**Description of the sample children of participating parents**

<table>
<thead>
<tr>
<th></th>
<th>Not SEN</th>
<th></th>
<th>SEN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>M</td>
<td>F</td>
</tr>
<tr>
<td></td>
<td>34</td>
<td>39</td>
<td>18</td>
</tr>
<tr>
<td>M Age (SD)</td>
<td>12.82(1.3)</td>
<td>12.56(1.5)</td>
<td>13.17 (1.3)</td>
</tr>
</tbody>
</table>

### Table 4

**Difference between SEN and non-SEN in the subscales of the SDQ questionnaire**

<table>
<thead>
<tr>
<th>Subscale</th>
<th>M Not SEN (SD)</th>
<th>M SEN (SD)</th>
<th>t</th>
<th>gl</th>
<th>Sign.</th>
<th>Cohen’s d</th>
<th>Lower C.I. *</th>
<th>Upper C.I.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional symptoms</td>
<td>2.33 (1.9)</td>
<td>3.41 (2.5)</td>
<td>-2.639</td>
<td>117</td>
<td>.009</td>
<td>2.18</td>
<td>.23</td>
<td>1.28</td>
</tr>
<tr>
<td>Behavioral problems</td>
<td>2.25 (1.9)</td>
<td>3.35 (1.8)</td>
<td>-3.044</td>
<td>117</td>
<td>.003</td>
<td>1.9</td>
<td>.278</td>
<td>.987</td>
</tr>
<tr>
<td>Hyperactivity and inattention</td>
<td>3.15 (2.6)</td>
<td>4.93 (2.15)</td>
<td>-3.831</td>
<td>117</td>
<td>.000</td>
<td>2.4</td>
<td>-.078</td>
<td>.817</td>
</tr>
</tbody>
</table>
### 2.3.1.2 Offline vulnerability according to children's perception - ACESS questionnaire.

Data from the ACESS questionnaire answered by children show that children with SEN perceive difficulties compared to peers without BES in the areas of school (p = .01), emotionality (p = .004), and social adjustment (p = .027) (Table 5). There were no significant differences from peers in the areas of body identity and family relationships.

#### Table 5

<table>
<thead>
<tr>
<th>Subscale</th>
<th>M Not SEN (SD)</th>
<th>M SEN (SD)</th>
<th>t</th>
<th>gl</th>
<th>Sign.</th>
<th>Cohen’s d</th>
<th>Lower C.I. *</th>
<th>Upper C.I.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>School adaptation</td>
<td>29.22 (5.9)</td>
<td>25.58 (5.4)</td>
<td>2.472</td>
<td>61</td>
<td>.016</td>
<td>5.75</td>
<td>.116</td>
<td>1.14</td>
</tr>
<tr>
<td>Emotionality</td>
<td>30.76 (6.8)</td>
<td>25.58 (6.9)</td>
<td>2.953</td>
<td>61</td>
<td>.004</td>
<td>6.85</td>
<td>.231</td>
<td>1.25</td>
</tr>
<tr>
<td>Body identity</td>
<td>14.62 (3.5)</td>
<td>13.58 (2.8)</td>
<td>1.244</td>
<td>61</td>
<td>.218</td>
<td>3.28</td>
<td>-.18</td>
<td>.812</td>
</tr>
<tr>
<td>Social Adaptation</td>
<td>25.38 (3.6)</td>
<td>22.96 (4.8)</td>
<td>2.266</td>
<td>61</td>
<td>.027</td>
<td>4.16</td>
<td>.065</td>
<td>1.07</td>
</tr>
<tr>
<td>Family relationship</td>
<td>35.56 (5.6)</td>
<td>33.31 (5.6)</td>
<td>1.777</td>
<td>61</td>
<td>.08</td>
<td>5.62</td>
<td>-.054</td>
<td>.949</td>
</tr>
</tbody>
</table>

*Confidence Interval 95%*

### 2.3.1.3 Online vulnerability according to parents’ perception.

At a descriptive level, it appears that, percentage-wise, children with SEN are more likely to commit or experience dangerous behavior on the Web than peers. Specifically, according to parental responses, these differences are significant:

- 56% of parents of children with SEN report that their child has been excluded from a chat room, compared to 31.5% of parents of children without SEN, $\chi^2 (2) = 7.69, p = .021$,
- parents report that their children with SEN who have been asked to meet strangers are 23.9%, compared to 10.9% of parents of boys without SEN, $\chi^2 (2) = 7.067, p = .029$. 

*Confidence Interval 95%*
- 39.1% of parents of children with BES report that their child has visited sites or chats with pornographic and violent content, compared to 13.7% of parents of children without BES, $\chi^2(2) = 13.897, p = .001$.

Table 6 shows the percentage differences at individual items.

### Table 6

**Percentage of "Sometimes" and "Often" parental responses**

<table>
<thead>
<tr>
<th>In the past year, your son/daughter ...</th>
<th>Not SEN</th>
<th>SEN</th>
<th>$\chi^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has been excluded from a group chat</td>
<td>31.5 %</td>
<td>56.5 %</td>
<td>.021</td>
</tr>
<tr>
<td>Has been offended on social networks or in a chat room</td>
<td>13.6 %</td>
<td>28.2 %</td>
<td>.136</td>
</tr>
<tr>
<td>Someone he or she met online asked to meet him or her</td>
<td>6.8 %</td>
<td>23.9 %</td>
<td>.029</td>
</tr>
<tr>
<td>Someone shared photos of him or her without his or her permission</td>
<td>12.3 %</td>
<td>17.4 %</td>
<td>.442</td>
</tr>
<tr>
<td>Visited sites, pages or chats that talk about hating people or groups of people</td>
<td>10.9 %</td>
<td>23.9 %</td>
<td>.081</td>
</tr>
<tr>
<td>Pretended to be someone else online</td>
<td>21.9 %</td>
<td>19.5 %</td>
<td>.718</td>
</tr>
<tr>
<td>Made fun of someone on social media or via chat rooms</td>
<td>9.5 %</td>
<td>21.7 %</td>
<td>.065</td>
</tr>
<tr>
<td>Shared photos of other people without permission</td>
<td>8.2 %</td>
<td>8.6 %</td>
<td>.685</td>
</tr>
<tr>
<td>Excluded someone from group chats</td>
<td>28.7 %</td>
<td>50 %</td>
<td>.065</td>
</tr>
<tr>
<td>Spread offensive or provocative images on the Internet</td>
<td>4.2 %</td>
<td>2.17 %</td>
<td>.568</td>
</tr>
<tr>
<td>Visited pornographic or violent sites or chats</td>
<td>13.7 %</td>
<td>39.1 %</td>
<td>.001</td>
</tr>
</tbody>
</table>

A factor analysis of the checklist on online risks administered to parents was carried out before carrying out the subsequent analysis, factors with eigenvalues $> 1$ were selected. Two subscales were identified: contact risks (suffered) and conduct risks (acted upon) (Table 7). The first
of these factors (contact risks) explains 34.32% total variance, while the second (Conduct risks) explains 18.85%.

Table 7

Principal Components Matrix

<table>
<thead>
<tr>
<th></th>
<th>Contact risks</th>
<th>Conduct risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>He/she has been excluded from chats</td>
<td>.728</td>
<td>-.321</td>
</tr>
<tr>
<td>Has been offended in a chat room or social network</td>
<td>.679</td>
<td>-.402</td>
</tr>
<tr>
<td>Someone he/she met online asked to meet him/her</td>
<td>.599</td>
<td>-.138</td>
</tr>
<tr>
<td>Pretended to be someone else</td>
<td>.193</td>
<td>-.735</td>
</tr>
<tr>
<td>Made fun of someone in a chat room or social network</td>
<td>.694</td>
<td>.415</td>
</tr>
<tr>
<td>Spread offensive images in a chat room or social network</td>
<td>.436</td>
<td>.367</td>
</tr>
</tbody>
</table>

Table 8 shows the item loadings as indicators of the variance explained by the individual Items in reference to the two subscales after applying the Varimax method with Kaiser normalization.

Table 8

Rotated component matrix (Varimax with Kaiser normalization)

<table>
<thead>
<tr>
<th></th>
<th>Contact risks</th>
<th>Conduct risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>He/she has been excluded from chats</td>
<td>.791</td>
<td>.091</td>
</tr>
<tr>
<td>Has been offended in a chat room or social network</td>
<td>.789</td>
<td>-.003</td>
</tr>
<tr>
<td>Someone he/she met online asked to meet him/her</td>
<td>.587</td>
<td>.184</td>
</tr>
<tr>
<td>Pretended to be someone else</td>
<td>.205</td>
<td>.732</td>
</tr>
<tr>
<td>Made fun of someone in a chat room or social network</td>
<td>389</td>
<td>.709</td>
</tr>
<tr>
<td>Spread offensive images in a chat room or social network</td>
<td>.19</td>
<td>.537</td>
</tr>
</tbody>
</table>
In subsequent analyses the scores of the two sub scales were the factor scores that emerged.

The \( t \) test found significant differences between the two groups (SEN and non-SEN) in factorial scores of contact risks (he was excluded, offended, someone asked him to meet), \( t(117)=7.108, p = .006 \), and in total risk, \( t(117)=1.86, p = .004 \) (Table 9).

Table 9  
**Comparison of subscales of the types of children's exposure to online risks (parent-reports)**

<table>
<thead>
<tr>
<th></th>
<th>( M ) SEN (SD)</th>
<th>( M ) Not SEN (SD)</th>
<th>( t )</th>
<th>Sign.</th>
<th>Cohen’s d</th>
<th>Lower C.I.</th>
<th>Upper C.I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Risks (P)</td>
<td>0.59 (.92)</td>
<td>1.22 (1.2)</td>
<td>-3.079</td>
<td>.006</td>
<td>1.08</td>
<td>-.955</td>
<td>-.202</td>
</tr>
<tr>
<td>Conduct Risks (P)</td>
<td>0.37 (.65)</td>
<td>0.43 (.43)</td>
<td>-.506</td>
<td>.614</td>
<td>.68</td>
<td>-.864</td>
<td>-.099</td>
</tr>
<tr>
<td>Total Risks (P)</td>
<td>1.79 (2.3)</td>
<td>3.1 (3.1)</td>
<td>-2.903</td>
<td>.004</td>
<td>2.4</td>
<td>-.92</td>
<td>-.17</td>
</tr>
</tbody>
</table>

P: parents’ perspective

Significant differences were also found with respect to parental concerns about children being contacted by strangers, with significantly greater concern from parents of SEN children \( \chi^2(1) = 4.909, p = .027 \).

**2.3.1.4 Online vulnerability according to children’s perception - Florence Cyberbullying and Cyber victimization scale (FCBCVs).**

With regard to children's perceptions of online risks, the \( t \)-test does not reveal significant risk differences between SEN non-SEN neither in terms of cyberbullying acted upon or suffered nor in terms of problematic Internet use (PIU, as measured by the GPIUS questionnaire) (Table 10).

Table 10  
**Difference between SEN and non-SEN children according to children's perceptions**

<table>
<thead>
<tr>
<th></th>
<th>( M ) SEN (SD)</th>
<th>( M ) Not SEN (SD)</th>
<th>( t )</th>
<th>Sign.</th>
<th>Cohen’s d</th>
<th>Lower C.I.</th>
<th>Upper C.I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyberbullying (C)</td>
<td>.12 (.14)</td>
<td>.14 (.15)</td>
<td>.548</td>
<td>.586</td>
<td>.151</td>
<td>-.365</td>
<td>.646</td>
</tr>
<tr>
<td>Cyber victimization (C)</td>
<td>.12 (.16)</td>
<td>.14 (.18)</td>
<td>.31</td>
<td>.758</td>
<td>.174</td>
<td>-.423</td>
<td>.581</td>
</tr>
</tbody>
</table>
2.3.1.5 Comparison of parental and child responses with respect to exposure to online risks.

Performing a comparison of parents' and children's responses to perceived exposure to online risks, it emerges how responses from the two sources do not correlate despite investigating similar behaviors and similar attitudes about Internet use. The correlations only occur between risks perceived by parents (conduct and contact risks) or between risks perceived by children (acted cyberbullying, cyber-victimization, and PIU) (Table 11).

Table 11

<table>
<thead>
<tr>
<th>Conduct Risks (P)</th>
<th>Contact Risks (P)</th>
<th>Cyberbullying (C)</th>
<th>Cyber-victimization (C)</th>
<th>PIU (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct Risks (P)</td>
<td>1</td>
<td>.243**</td>
<td>.099</td>
<td>.155</td>
</tr>
<tr>
<td>Contact Risks (P)</td>
<td>1</td>
<td>-.081</td>
<td>.087</td>
<td>.057</td>
</tr>
<tr>
<td>Cyberbullying (C)</td>
<td>1</td>
<td></td>
<td>.556**</td>
<td>.303*</td>
</tr>
<tr>
<td>Cyber-victimization (C)</td>
<td>1</td>
<td></td>
<td></td>
<td>.338**</td>
</tr>
<tr>
<td>PIU (C)</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

** p <.01 * p <.05
PIU: Problematic Internet Use; (P): parents’ perspective; (C): children’s perspective

2.3.2 Objective 2: Understand which individual or family variables correlate with greater exposure to online risks among youth

2.3.2.1 The age variable.

Results showed that children's age correlated negatively with parental controls and number of rules and positively correlates with the number of social networks used, contact and conduct
risks (parent report), and problematic Internet use as measured by the GPIUS scale (by children) (Table 12).

### Table 12

**Correlation between mediation age and risk**

<table>
<thead>
<tr>
<th>Controls Mediation</th>
<th>Active Mediation</th>
<th>Social network (N)</th>
<th>Rules (N)</th>
<th>Conduct Risks (P)</th>
<th>Contact Risks (P)</th>
<th>Total Risks (P)</th>
<th>Cyberbullying (C)</th>
<th>Cyber-victimization (C)</th>
<th>PIU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.321**</td>
<td>-.096</td>
<td>.387**</td>
<td>-.278**</td>
<td>.183*</td>
<td>.217*</td>
<td>.311</td>
<td>.021</td>
<td>-.005</td>
</tr>
</tbody>
</table>

** p < .01; * p < .05, PIU: Problematic Internet Use; N: numbers; P: Parent's point of view; C: Children point of view

Some of the subscales of the GPIUS test also correlate significantly with the age variable: the POSI subscale (preference for online interactions) and compulsive Internet use (Table 13).

### Table 13

**Correlation between age and GPIUS subscales**

<table>
<thead>
<tr>
<th>POSI</th>
<th>Mood regulation</th>
<th>Cognitive preoccupation</th>
<th>Compulsive Use</th>
<th>Negative Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.272*</td>
<td>.245</td>
<td>.097</td>
<td>.297*</td>
</tr>
</tbody>
</table>

* p < .05

POSI: Preference for Online Social Interaction

### 2.3.2.2 Parental difficulties perception (SDQ questionnaire).

When analyzing the relationship between parents' perceived online risks and child characteristics (as measured by the SDQ-parents questionnaire), it can be seen that the subscale "behavioral problems" correlates with greater exposure to online conduct risks (Table 14).
Table 14

*Relationship between SDQ subscales and parents' perceived online risks*

<table>
<thead>
<tr>
<th></th>
<th>Emotional symptoms</th>
<th>Behavioral problems</th>
<th>Hyperactivity/inattention</th>
<th>Prob. relation with peers</th>
<th>Pro-social behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct Risks (P)</td>
<td>-.062</td>
<td>.210*</td>
<td>.050</td>
<td>-.060</td>
<td>-.015</td>
</tr>
<tr>
<td>Contact Risks (P)</td>
<td>.172</td>
<td>.176</td>
<td>.121</td>
<td>.073</td>
<td>.105</td>
</tr>
</tbody>
</table>

* p < .05  
P: parent's point of view

Regarding children's perceptions of the online risks they experience, among the SDQ-parents subscales, the “Hyperactivity and inattention” subscale correlates significantly and positively with the “Cyberbullying” subscale (Table 15).

Table 15

*Correlation between SDQ subscales and children's perceived online risks.*

<table>
<thead>
<tr>
<th></th>
<th>Emotional symptoms</th>
<th>Behavioral problems</th>
<th>Hyperactivity/inattention</th>
<th>Prob. relation with peers</th>
<th>Pro-social behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyberbullying (C)</td>
<td>-.068</td>
<td>-.021</td>
<td>.325**</td>
<td>-.167</td>
<td>-.113</td>
</tr>
<tr>
<td>Cyber-victimization (C)</td>
<td>.025</td>
<td>-.017</td>
<td>.115</td>
<td>-.079</td>
<td>.060</td>
</tr>
<tr>
<td>GPIUS tot (C)</td>
<td>.043</td>
<td>.083</td>
<td>.242</td>
<td>.018</td>
<td>-.117</td>
</tr>
</tbody>
</table>

** p < .01; C: children perspective

2.3.2.3 Children’s perception (ACESS questionnaire) and online risks.

Looking at correlations between parents' perceived online risks and their children's ACESS scores, negative correlations can be seen between contact and emotionality risks and body identity (Table 16).

Table 16

*Correlations between ACESS subscales and parents' perceived online risks*

<table>
<thead>
<tr>
<th></th>
<th>Contact Risks (P)</th>
<th>Conduct Risks (P)</th>
<th>Total Risks (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>School adaptation</td>
<td>-.062</td>
<td>-.006</td>
<td>-.048</td>
</tr>
</tbody>
</table>
The results about children's perceived risks showed that there were no correlations between acted or suffered cyberbullying and subscales of the ACESS questionnaire. However, scores in almost all the subscales of the ACESS questionnaire, with the exception of social adaptation, correlated negatively with the total score on the GPIUS questionnaire, assessing the problematic internet use (Table 17).

Table 17

<table>
<thead>
<tr>
<th></th>
<th>Cyberbullying (C)</th>
<th>Cybervictimization (C)</th>
<th>PIUS tot (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>School adaptation</td>
<td>-.238</td>
<td>-.234</td>
<td>-.574**</td>
</tr>
<tr>
<td>Emotionality</td>
<td>.042</td>
<td>-.231</td>
<td>-.471**</td>
</tr>
<tr>
<td>Bodily Identity</td>
<td>-.036</td>
<td>-.238</td>
<td>-.407**</td>
</tr>
<tr>
<td>Social Adaptation</td>
<td>.153</td>
<td>.038</td>
<td>-.152</td>
</tr>
<tr>
<td>Family relationship</td>
<td>-.108</td>
<td>-.016</td>
<td>-.310*</td>
</tr>
</tbody>
</table>

**p < .01; * p < .05; P: parents’ perspective

A more thorough analysis of the correlation between clinical symptoms and subscales of the GPIUS test showed that school adaptation correlated negatively and significantly with all five subscales of the GPIUS. In addition to school adaptation, the other variables that correlated negatively with the subscales of the GPIUS were emotionality (4 subscales), bodily identity (3 subscales), family relationships (3 subscales), and social adjustment (2 subscales) (Table 18).
Table 18  
*Correlations between subscales of the ACESS and scores on the GPIUS*

<table>
<thead>
<tr>
<th></th>
<th>POSI</th>
<th>Mood regulation</th>
<th>Cognitive preoccupation</th>
<th>Compulsive use</th>
<th>Negative outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>School adaptation</td>
<td>-.328**</td>
<td>-.430**</td>
<td>-.376**</td>
<td>-.512**</td>
<td>-.298*</td>
</tr>
<tr>
<td>Emotionality</td>
<td>-.379**</td>
<td>-.347**</td>
<td>-.308*</td>
<td>-.245</td>
<td>-.455**</td>
</tr>
<tr>
<td>Bodily Identity</td>
<td>-.245</td>
<td>-.406**</td>
<td>-.395**</td>
<td>-.197</td>
<td>-.253*</td>
</tr>
<tr>
<td>Social Adaptation</td>
<td>-.453**</td>
<td>.024</td>
<td>-.072</td>
<td>.048</td>
<td>-.273*</td>
</tr>
<tr>
<td>Family relationship</td>
<td>-.254*</td>
<td>-.232</td>
<td>-.254*</td>
<td>-.273*</td>
<td>-.186</td>
</tr>
</tbody>
</table>

**p < .01; * p < .05  
POSI: Preference for Online Social Interaction

2.3.3 *Objective 3: Assess frequency and correlates of parental mediation strategies, places of Internet use, and parental digital skill level within the two groups (SEN and non-SEN)*

From a factor analysis conducted on the questionnaire used to assess parental mediation strategies, two main subscales emerged (eigenvalues > 1): controls and active/co-use mediation (Table 19). The total variance explained by the “Parental controls” is 37.9% and 14.1% for “Active Mediation and Co-use”. 
No significant differences emerged in the use of controls, $t(117)=2.9$, $p=0.91$, or active mediation and co-use, $t(117)=1.24$, $p=0.268$, within the two groups (parents of SEN and parents of non-SEN).

### 2.3.3.1 Correlations between controls and active mediation and co-use.

No significant correlations emerged between the two types of parenting mediation (Table 20).

**Table 20**

*Correlations between parental mediation strategies*

<table>
<thead>
<tr>
<th>Parental controls</th>
<th>Active Mediation and co-use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Parental controls</td>
<td>1</td>
</tr>
</tbody>
</table>
2.3.3.2 Correlations between mediation strategies and online risks.

In terms of correlations of the mediation strategies with online risks, the results show a positive correlation between active mediation and exposure to total risks ($p = .007$) and active mediation and exposure to contact risks ($p = .029$). No correlations of any kind were present toward the “parental controls” subscale (Table 21).

**Table 21**

*Correlation between mediation strategies and online risks*

<table>
<thead>
<tr>
<th></th>
<th>Total risks (P)</th>
<th>Contact risks (P)</th>
<th>Conduct risks (P)</th>
<th>Cyberbullying (C)</th>
<th>Cyber victimization (C)</th>
<th>PIU (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental controls</td>
<td>.031</td>
<td>-.003</td>
<td>-.038</td>
<td>-.034</td>
<td>-.146</td>
<td>-.24</td>
</tr>
<tr>
<td>Active mediation and co-use</td>
<td>.247**</td>
<td>.200*</td>
<td>.037</td>
<td>.174</td>
<td>.141</td>
<td>-.05</td>
</tr>
</tbody>
</table>

** $p < .01$ * $p < .05$; P: perceived by parents; C: perceived by children

There were no significant correlations between parental mediation strategies and subscales of the GPIUS test (Table 22).

**Table 22**

*Correlation between subscales of the GPIUS and mediation strategies*

<table>
<thead>
<tr>
<th></th>
<th>GPIUS: POSI</th>
<th>GPIUS mood regulation</th>
<th>GPIUS: cognitive preoccupation</th>
<th>GPIUS: compulsive use</th>
<th>GPIUS: negative outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental controls</td>
<td>-.181</td>
<td>.161</td>
<td>-.078</td>
<td>-.118</td>
<td>-.060</td>
</tr>
<tr>
<td>Active mediation and co-use</td>
<td>-.195</td>
<td>-.102</td>
<td>-.170</td>
<td>-.228</td>
<td>-.213</td>
</tr>
</tbody>
</table>
2.3.3.3 Correlation between mediation strategies and SDQ – parents.

Mediation strategies did not correlate significantly with any of the subscales of the SDQ parent questionnaire (Table 23).

Table 23

<table>
<thead>
<tr>
<th>Correlations between SDQ subscales and mediation strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional symptoms</td>
</tr>
<tr>
<td>-----------------------------------------------------------</td>
</tr>
<tr>
<td>Parental controls</td>
</tr>
<tr>
<td>Active mediation and co-use</td>
</tr>
</tbody>
</table>

2.3.3.4 Correlation between mediation strategies and ACESS – children.

Regarding correlations between mediation strategies and ACESS tests, the data showed only one significant and positive correlation between parental controls and children's school adjustment (Table 24).

Table 24

<table>
<thead>
<tr>
<th>Correlation between ACESS test subscales and mediation strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>School adaptation</td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>Parental controls</td>
</tr>
<tr>
<td>Active mediation and co-use</td>
</tr>
</tbody>
</table>

** p <.01; * p <.05

2.3.3.5 Correlation between places of Internet use and online risks.

When analyzing the relationship between all types of online risks and places of Internet use, "Everywhere" Internet use correlated positively with contact risks (perceived by parents), cyber-
victimization (perceived by children), and problematic Internet use (perceived by children) (Table 23).

2.3.3.6 Follow and hide content.

For parents, to be “friends” or “followers” with their own children on social networking sites does not appear to have significant correlations with the risks experienced by children. However, the parents’ perception that their own children are hiding some contents from them correlated with conduct and total risks (perceived by parents) and problematic Internet use (perceived by children) (Table 26).

<table>
<thead>
<tr>
<th>Table 25</th>
<th>Correlations between place of use and online risks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Conduct risks (P)</td>
</tr>
<tr>
<td>Anywhere (outside and at home)</td>
<td>-.030</td>
</tr>
<tr>
<td>In a private room</td>
<td>.098</td>
</tr>
<tr>
<td>In any space of the house</td>
<td>-.065</td>
</tr>
<tr>
<td>In a visible space in the house</td>
<td>-.004</td>
</tr>
</tbody>
</table>

** p <.01; * p <.05; P: perceived by parents; C: perceived by children

<table>
<thead>
<tr>
<th>Table 26</th>
<th>Correlation between hidden contents and online risks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Contact risks (P)</td>
</tr>
<tr>
<td>I follow it but he/she hides me some contents</td>
<td>.103</td>
</tr>
</tbody>
</table>
It appears that the age significantly correlated with content hiding ($p < .001$) and that there were no significant correlations between content hiding and the two parental mediation strategies (Table 27).

**Table 27**

*Correlations between hiding content, age, and mediation strategies.*

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>Parental controls</th>
<th>Active Mediation and Co-use</th>
</tr>
</thead>
<tbody>
<tr>
<td>I follow it but he/she hides some contents from me</td>
<td>.304**</td>
<td>-.039</td>
<td>-.068</td>
</tr>
</tbody>
</table>

** $p < .01$  

Hiding content from parents correlated negatively with all subscales of the ACESS questionnaire with the exception of social adjustment (Table 28).

**Table 28**

*Correlations between hiding content and ACESS subscales*

<table>
<thead>
<tr>
<th></th>
<th>School adaptation</th>
<th>Emotivity</th>
<th>Body image</th>
<th>Social Adaptation</th>
<th>Family Relation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I follow it but it hides some contents from me</td>
<td>-.255*</td>
<td>-.269*</td>
<td>-.345**</td>
<td>-.067</td>
<td>-.273*</td>
</tr>
</tbody>
</table>

** $p < .01$  * $p < .05$  

When considering the SDQ scores (parent report), content hiding correlated significantly and positively only with the "behavioral problems" subscale (Table 29).
Hiding content did not vary significantly between the two groups (SEN and non-SEN) (Table 30).

Table 30

Differences between SEN and non-SEN in relation to hiding content

<table>
<thead>
<tr>
<th></th>
<th>M Non-SEN (SD)</th>
<th>M SEN (SD)</th>
<th>t</th>
<th>gl</th>
<th>Sign. (two-tailed)</th>
<th>Average difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>He/she hides me some contents</td>
<td>.14(.34)</td>
<td>.13(.34)</td>
<td>.101</td>
<td>117</td>
<td>.920</td>
<td>.007</td>
</tr>
</tbody>
</table>

2.3.3.7 The influence of parental digital skills.

Parents' digital skills (perceiving themselves as more adept at certain online activities than their children) correlated with both mediation strategies: parental controls (p<.001) and active mediation (p =.002), but was not significantly associated with a reduction reducing exposure to online risks (Table 31).

Table 31

Correlation between parental digital skills and online risks

<table>
<thead>
<tr>
<th></th>
<th>Contact risks (P)</th>
<th>Conduct risks (P)</th>
<th>Total Risks (P)</th>
<th>Cyberbullying (C)</th>
<th>Cyber-victimisation (C)</th>
<th>GPIUS (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental digital competencies</td>
<td>.025</td>
<td>-.001</td>
<td>.076</td>
<td>.118</td>
<td>.194</td>
<td>.010</td>
</tr>
</tbody>
</table>
Digital skills in this study were measured asking parents to compare their digital skills to their children’s ones. Children’s age correlates negatively with parents' digital skills ($p = .003$). Parental digital skills were correlated with children’s skills to talk to their mother about what is going on online ($p = .034$).

**2.3.4 Objective 4: Explore whether parental mediation strategies moderate the association of individual/family characteristics and exposure to online risks**

To understand which variables influenced the relationship between parental mediation strategies and exposure to online risks, regression analyses were performed. The first of these analyses was to assess whether the variable "parental controls" or the variable "active mediation" moderated the relationship between “SEN condition” and online risk. The two moderator variables were specified in two separate regression models. The results of these first analyses led to the conclusion that the two variables "parental controls" (interaction term $b = -.11, p = .81$) and “active mediation” (interaction term $b = .42, p = .34$) don’t significantly moderate the relationship between “SEN condition” and online risks.

**2.3.4.2 Moderating effect of level of Parental Controls or Active Mediation on the relationship between family relationships and online risk (with diagnosis as moderator).**

I then decided to look at whether other individual or family variables affected the relationship between parental mediation strategies and online risk. In this analysis, I wanted to observe whether the relation between family relationships and online risk was moderated by the level of parental controls. I therefore included the level of "parental controls" as a moderator, family relationships as an independent variable, and "online risks" as a dependent variable and the SEN category as a covariate. “Parental controls” variable moderated almost significantly ($b = .93; p = .06$) the relationship between family relationships and online risks only when the level of parental controls was high; this effect did not occurred when, in contrast, the level of parental controls was low ($p = .2$). Specifically, as shown by the graph, risks exposure decreased in the presence of high controls in function of family relationships quality (Fig. 3.1).

**Figure 3.1**
Moderating effect of Parental Controls on the relationship between Family Relationships (FR) and Online Risks (with diagnosis as a covariate)

We then re-purposed the same analysis with the variable "active mediation" instead of "parental controls". The results of this moderation analysis show that active parental mediation does not significantly moderate the relationship between family relationships and online risks either when levels of active mediation are low (interaction term $b=-0.78$; $p=.34$) or when levels of mediation are high ($p=.07$).

2.3.4.3 Moderating effect of Active Mediation on the relationship between Social Adaptation and Online Risks (with diagnosis as a covariate).

With this analysis, I aimed to assess whether the variables "active mediation" or "parental controls" moderated the relationship between certain individual characteristics and online risks. Therefore, I included first “SEN condition” as covariate, "parental controls" and then "active mediation" as moderators and various child-related characteristics measured with ACESS and SDQ questionnaire (quality of family relationship, social adjustment, school adjustment, emotionality and body identity, emotional problems, problematic behavior, hyperactivity and
inattention, problematic relation with peers and prosocial behavior) as independent variables. Hence, separate regression models (one model for each criterion variable) were tested.

The moderation that was found to be significant included "active mediation" as the moderator, the level of "social adjustment" as the independent variable, and "online risks" as the dependent variable. Significant effects of children's level of social adjustment on online risks emerged.

This effect, however, only exists when levels of active mediation are high (interaction term \( b = -.16; p = .01 \)), whereas the effect is not significant for low levels of active mediation (\( p = .19 \)).

**Figure 3.2**

*Moderating effect of Active Mediation (AM) level on the relationship between Social Adaptation (SA) and Online Risks*

2.3.4.4 Effect of level of social adjustment on the relationship between active parental mediation and online risk (with diagnosis as a covariate).

By including "active mediation" or "controls" as independent variables, individual child characteristics as moderators, and "problematic Internet use - PIU" as the dependent variable, and keeping the SEN condition as covariate, we obtain a significant result concerning “active
mediation” and “social adaptation”. As we can see from the graph (Fig. 3.3), the level of social adaptation affects the relationship between Active Mediation and PIU: when a low level of social adaptation of the children is present, the level of the PIU decreases as a function of the active mediation acted by the parent (interaction term $b = -4$, $p = .04$).

**Figure 3.3**

*Moderating effect of Social Adaptation (SA) on the relationship between Active Mediation (AM) and Problematic Internet Use*

2.3.4.5 **Moderating effect of Active Mediation and SEN on the relationship between Social Adaptation and Online Risks.**

Finally, we performed a dual moderation analysis. The variable "social fit" seems to be very important as in online risk exposure. Therefore, we wanted to observe the effect of this variable for children with and without SEN at different levels of “active mediation” and “parental controls”. For this reason, we included "social adaptation" as an independent variable, "SEN condition" as a moderator 1, “active mediation” or “parental controls” as moderator 2, and “online risks” as independent variable.
In the presence of high levels of Active Mediation, the experience of online risk significantly decreases (b=.3; p = .038 for not-SEN; b=1.3; p=.033 for SEN) in relation to their level of Social Adaptation. Specifically, it appears to strongly decrease in the presence of high levels of both Active Mediation and Social Adjustment (Fig. 3.4)

**Fig.3.4**

*Moderating effect of SEN on the relationship between Social Adaptation and Online Risks in high levels of Active Mediation*

![Graph showing the moderating effect of SEN on the relationship between Social Adaptation and Online Risks in high levels of Active Mediation.](image)

SA: Social Adaptation; SEN: Special Educational Needs

2.3.5 **Objective 5: Assess parents' perceptions of the Internet use of children (with and without SEN) during the lockdown months.**

Our data showed that 73.9% of parents reported an increase in their children's Internet use during the lockdown period (excluding time spent on distance learning), and 45% of them report that they put more controls in place during this period on their children's Internet use. In terms of how youth used the Internet, 26% of parents reported that their children used the Internet in a riskier way compared to the previous period (Table 32).
With regard to the lockdown period, a significant finding concerned parents' perceptions of their children's Internet use: parents of SEN perceived significantly less positive Internet use than parents of children without SEN. No significant correlations emerged between scores of the subscales of the ACESS questionnaire and different ways to use the Internet during the lockdown. However, significant correlations emerged between positive Internet use in lockdown and some subscales of the SDQ-parents questionnaire (behavioral problems, hyperactivity and inattention and prosocial behavior) (Table 33).

**Table 32**

*Differences between SEN and non-SEN kids during lockdown months (March and April 2020)*

<table>
<thead>
<tr>
<th>Excluding time spent on distance learning, he spent an inordinate amount of time online</th>
<th>M Non-SEN (SD)</th>
<th>M SEN (SD)</th>
<th>t</th>
<th>gl</th>
<th>Sign.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.77 (.45)</td>
<td>1.67 (.47)</td>
<td>1.068</td>
<td>117</td>
<td>0.288</td>
</tr>
<tr>
<td>I have had more opportunities to checks on his Internet use</td>
<td>1.42 (.55)</td>
<td>1.41 (1.4)</td>
<td>.110</td>
<td>117</td>
<td>0.913</td>
</tr>
<tr>
<td>He/She used the internet more positively (creative or school activities) than before lockdown</td>
<td>1.29 (.79)</td>
<td>0.91 (.91)</td>
<td>.526</td>
<td>117</td>
<td>0.013</td>
</tr>
</tbody>
</table>

**Table 33**

*Correlations between lockdown Internet use and SDQ-parents*

<table>
<thead>
<tr>
<th></th>
<th>Emotional symptoms</th>
<th>Behavioral problems</th>
<th>Hyperactivity/inattention</th>
<th>Problematic behavior with peers</th>
<th>Prosocial behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet time lockdown</td>
<td>.073</td>
<td>.115</td>
<td>.153</td>
<td>-.007</td>
<td>.040</td>
</tr>
<tr>
<td>Lockdown Controls</td>
<td>.024</td>
<td>.079</td>
<td>-.006</td>
<td>-.005</td>
<td>.052</td>
</tr>
<tr>
<td>Positive Internet lockdown</td>
<td>-.121</td>
<td>-.256**</td>
<td>-.359**</td>
<td>-.133</td>
<td>.192*</td>
</tr>
</tbody>
</table>

**p <0.01 * p <0.05**
A significant positive correlation emerged between parental perceived conduct risks and the frequency of their controls and supervision during the lockdown period (Table 34).

### Table 34

**Correlations between lockdown Internet use and online risks**

<table>
<thead>
<tr>
<th></th>
<th>GPIUS tot</th>
<th>Cyberbullying (F)</th>
<th>Cyber victimization (F)</th>
<th>Contact risks (G)</th>
<th>Conduct risks (G)</th>
<th>Overall risks (G)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet time lockdown</td>
<td>.201</td>
<td>.075</td>
<td>.086</td>
<td>-.022</td>
<td>.071</td>
<td>.071</td>
</tr>
<tr>
<td>Lockdown Controls</td>
<td>.085</td>
<td>.022</td>
<td>.119</td>
<td>.046</td>
<td>.206*</td>
<td>.127</td>
</tr>
<tr>
<td>Positive Internet lockdown</td>
<td>.109</td>
<td>.012</td>
<td>.170</td>
<td>-.067</td>
<td>-.073</td>
<td>-.162</td>
</tr>
</tbody>
</table>

**p <0.01 * p <0.05**

### 2.4 Discussion

The results of the study show that the sample of students with Special Educational Needs differ from adolescents without difficulties in some areas, measured both through the point of view of the children themselves and through that of the parents.

In particular, the areas in which children with SEN manifest significantly greater difficulties than peers were found to be: emotionality (anxiety and depression), behavioral problems, hyperactivity and inattention, problematic relationships with peers and school adjustment.

These results confirm what has already been reported in some scientific studies that showed the greatest vulnerability of children with specific difficulties. Specifically, studies in the literature have shown that children with SEN have lower social skills (Kavale & Forness, 1996), they are bully/victim more often than peers without difficulties (Kokkinos & Antoniadou, 2013) and experience anxiety and depression more frequently (Al-Yagon & Margalit, 2013; Wilson et al., 2009). The phenomenon of clinical symptoms, such as anxiety, depression, or social difficulties, related to SEN can be due to the stigma associated with these difficulties. This stigma
may be internalized by the children themselves leading them to experience feelings of inadequacy and guilt (Chan et al., 2017).

2.4.1 Special educational needs and online risks

With respect to Web use, our study individuates substantial differences between the views of parents and the views of children themselves with respect to their perceptions of whether or not they experience online risks. Specifically, while parents find that children with SEN are significantly more exposed to some online risks, such as cyber-victimization, grooming, and viewing violent pornographic content, and more generally to all contact risks, SEN children don’t have the same perception.

This difference between parents' and children's perceptions of risks may be due to the different view of Internet use in general. In particular, with respect to Internet use, parents seem to have a more negative perception of online activities and overestimate the time their children spend on these activities (Kats & Byrne., 2015).

Our hypotheses that student with SEN would be more at risk in the online environment has been partially confirmed; In fact, only from a parental perspective do kids with SEN appear to be more at risk in virtual environments.

Moreover, looking at our data, no correlations of any kind are found between children’s exposure to online risks when assessed by parents and by children. This difference can be attributed both to the instruments used, which measured partly different constructs (contact or conduct risks for parents/ cyber-victimization or cyberbullying for children), and to the fact that children, and in particular children with SEN, may not be fully aware of the risks they experience online (Berelowitz et al., 2012).

Indeed, it is necessary to consider that the parents in our sample were about twice as numerous as the participating children and, for this reason and their more consistent assessment of risk, parents may represent a more reliable source.

Moreover, analyzing only the data from parents, it emerged that parents of children with SEN were more concerned about the possibility that their son or daughter might be contacted by strangers on the Internet. This concern may stem from unpleasant incidents their children have encountered, but also from parents’ perception that their child is more vulnerable or more attracted to online encounters or risky virtual contexts.
2.4.2 Individual variables and Online risk

2.4.2.1 Age.

Like many studies in the literature (Floros et al., 2013; Gomez et al., 2017; Padilla-Walker et al., 2012) this study indicates that the exposure to online risks increases with age, and the frequency of parental supervision and the number of parental rules decrease. Regarding children's perceptions, although age does not correlate with cyberbullying or cybervictimization, it appears that as age increases, there is an increase in problematic Internet use, specifically with regard to the “preference for online social interactions (the subscale POSI)” and the “compulsive use”.

2.4.2.2 Other individual characteristics (ACESS/SDQ questionnaires).

It is possible that some youth in our sample do not fall into the SEN category, but still they reported difficulties in some specific areas of functioning. Therefore, I wanted to investigate what characteristics of vulnerability lead to experimentation of online risks. Of course, students with SEN are more susceptible to many of these weaknesses.

The results of this study suggest that conduct risks (cyberbullying or sharing inappropriate content) are associated with behavioral problems (as reported by parents) and hyperactivity/ inattention (according to the children themselves). This finding is in line with results from several studies investigating the online behavior of children with attention-deficit/hyperactivity disorders (Cakmak & Gul, 2018; Choi et al., 2019; Kormas et al., 2011). In addition, in this study emerged that children who experienced more risk of contact (according to parents’ perception) were those who reported lower levels in the “emotionality” subscale (thus higher levels of anxiety and depression) and in the body identity subscale (thus lower levels of body self-esteem). This finding also confirms what had already emerged in other studies in the literature, specifically, the study by Landoll and colleagues (2015) suggesting that being cyber-victimized is associated with anxiety and depression symptoms. Also, the study by Frisén and Berne (2020) found that the experience of cyber-victimization is related to lower levels of body satisfaction. Strong negative correlations also emerged between problematic Internet use and school adjustment, emotionality, body identity, and family relationships. Even some previous studies had already identified body dissatisfaction (Ceyhan et al., 2012) and school maladjustment (Tomaszek & Muchacka-Cymerman, 2020) as variables correlated with PIU. Family relationships, in past studies, have also been found to be an important variable in influencing adolescents' PIU (Schneider et al., 2017).

Picking up on our findings, and using Livingstone and colleagues' (2011) categorization of risks, the variables that positively correlate with various risks in our study are:
- regarding conduct risks: age, behavioral problems, hyperactivity and inattention,
- regarding contact risks: age, emotionality, and body identity,
- regarding PIU risk: age, emotionality, body identity, and school adjustment.

With regard to the problematic use of the Internet, school adjustment emerged as the most important factor: In fact, having good school adjustment correlated with better outcomes for all subscales involving problematic Internet use: preference for online interactions (POSI), use of the Internet to regulate one's mood (mood regulation), cognitive preoccupation (thinking of wanting to get online when one is not online), compulsive use of the Internet and negative outcomes with regard to family and social life. These analyses reveal a profile of adolescents who are particularly predisposed to problematic Internet use: youth with attention or behavior problems may be more prone to riskier use in terms of perpetrating harmful online behaviors; youth with emotional difficulties and body self-esteem issues may more frequently be victims of cyberbullying or other online crimes, while youth with emotional and academic problems may more often fall into a problematic and excessive use of the Internet. Few studies in the literature had addressed the association between body identity and Internet risk. This study seems to suggest that bodily identity is an important area to pay attention to and that there is a need to investigate the Internet use of adolescents who exhibit problems with self-esteem.

2.4.3 Parental mediation strategies

Mediation strategies used by parents did not appear to vary significantly between SEN and non-SEN children. Also, controls and active mediation were not associated significantly. Regarding the outcomes of different parental mediation strategies, correlations between active mediation and contact and total risks emerged. This finding can be interpreted by reflecting on the type of study that was conducted. In fact, only a longitudinal study could give definite results on the effects of mediation strategies, whereas in our case it is possible that these strategies were implemented after negative online events happened to their children.

The only association emerging between mediation strategies and children's vulnerability factors was the positive correlation between control strategies and school adjustment. It is presumed that establishing controls and restrictions on children’s Internet use lead to more time spent by the child studying and thus better school adjustment. This finding is similar to that of a past study (Gentile et al., 2012) that found that parental controls led to better school performance.
Other studies of parental controls, however, report controversial results in terms of risk exposure and experimentation of Web opportunities (Elsaesser et al., 2017).

2.4.3.1 Places of use.

Using the Internet "everywhere", therefore both outside and inside the home with smartphone, iPad or PC, is associated with higher risks of contact online, cyber-victimization and PIU. This results is not particularly surprising, as it is well known that increased use of the Internet brings with it a long list of negative outcomes in terms of cyberbullying, cyber-victimization, and problematic internet use (Gomez et al., 2017).

2.4.3.2 Being an online friend or follower.

The fact that parents follow or not follow their own children online, in this study, was not associated with the online risks experienced by the children. This result is inconsistent with the findings of the study by Kanter and colleagues (2012). This study investigated the phenomenon of being Facebook friends with one's parent and showed that being “online friendship” between parents and children was associated with better outcomes at the level of parent-child communication.

Instagram, one of the most used social networks by young people globally, gives the option to post content by hiding it from only certain people, and many young people use this option to hide intimate, dangerous or inappropriate content from their parents who are their follower on the social network.

In our study, parents' perceptions of their children hiding certain content from them correlated with children’s exposure to conduct and total risks, as perceived by parents and Problematic Internet Use (PIU), as perceived by children.

Perception that a child is “hiding contents” increases with children’s age and correlates negatively with a number of psychological outcomes such as school adjustment, emotionality, body identity and family relationships and positively with behavioral problems. This phenomenon is still poorly studied in the literature. It seems that still no scientific study has been interested in this behavior so widespread among young people. This phenomenon, however, is important to investigate. Indeed, it is presumable that parents will be increasingly accustomed to using social networks, but also that children will be able to find ways to avoid their parents' controls online, to create an intimacy for themselves that is separate from the contexts frequented by adults. At the moment, for example, it is common practice among teenagers to create a "formal" Instagram profile, where they are followed by their parents and share content with adults, and a "secret"
profile reserved for peers and only those who know their code name. In this secret profile, also called "Finsta", teens post content that they would not want to share with adults and parents.

2.4.3.3 Parental digital competencies.

Parents’ perception of being more competent on Internet than their children correlate with both the mediation strategies of establishing controls and active mediation. Parents’ digital skills decrease as children age. This result can be explained by the fact that as the age of young people increases, their autonomy on the Web and their digital skills increase as well, and, in the meantime, these skills also increase in comparison of those of their parents that "decrease".

This finding may also help us understand the fact that as teens get older, the number of platforms they use increases and the frequency of parental monitoring and active mediation practices decreases. However, perceiving oneself as a more digitally competent parent correlates to an important variable: the greater likelihood that children will talk to their mother about what is happening to them online. This is a very interesting finding if we consider that openness with parents about the online world is a predictor of safe online use (Vanderhoven et al., 2016). We can assume, then, that good digital skills for parents are protective for children, not so much because parents will know how to use more appropriate strategies to monitor their children online, but also, and more importantly, because children will feel more confident that they can talk to them about something, potentially risky, that may happen to them online.

2.4.3.4 Effect of level of controls on the relationship between quality of family relationships and exposure to online risks.

From a moderation analysis, we can observe the effects of the level of controls on the relationship between family relationship quality and total online risk exposure.

In fact, this moderation analysis showed that high levels of controls lead to a decrease in risk experienced online by the children, only in the presence of high family relationships, while high parental controls and supervision, in the presence of low family relationships, lead to an increase in the online risk experienced by children. This finding may be useful in clarifying some of the ambiguity and controversy present in the literature with respect to parental controls. In fact, the review conducted in chapter one shows that there are mixed results regarding restrictive mediation or excessive supervision: in some studies, they are associated with reduced risk, while in others they are associated with increased online risks experienced by the children. Parental controls and supervision, in this study, seem to work as a function of the family climate in which
they occur, which represents a crucial variable to be considered and enhanced in future interventions to prevent or counteract the phenomenon of online risks for children.

2.4.3.5 Effect of level of social adjustment on the relation between active parenting mediation and online risks.

With regard to active mediation practices, from our data it is possible to note that in the presence of low levels of social adjustment in children, the risk of problematic Internet use decreases as the level of active parental mediation increases. In essence, it appears that for a child who exhibits difficulties at a social level, and therefore is not well accepted among peers, active parental mediation practices can decrease the likelihood that they will use the Internet excessively or problematically.

The two moderation analyses indicate a protective effect of the parental strategies "controls" and "active mediation" is evident in the presence of certain family or individual characteristics. Indeed, because strategies of parental controls work, good family relationships seem to be necessary. In contrast, the usefulness of active mediation practices is particularly evident in boys with low levels of social adaptation.

2.4.4 Consideration about the lockdown period

In this study, most parents (73.9%) reported an increase of the time spent by their children on the Internet during the lockdown period (excluding the time spent on distance learning). About half of the participants reported that they put more controls in place on their children's Internet use during these months.

With respect to how children used the Internet, the hypotheses of this study were confirmed: 26% of parents reported that their children used the Internet more negatively during the lockdown months than during the previous period. This may mean an actual worse use of the net by young people, but also the simple and direct effect of the greater number of opportunities to check their children’s online activities that may have led to a greater understanding of the actual risks their children run into online. The analysis of this study confirmed this hypothesis, showing that the most controlling parents were also those who report more risks of conduct by their children.

Even during the period of forced confinement, the group of children with SEN seemed to have used the Internet significantly less positively than during the previous period, performing more inappropriate or dangerous activities than their peers. A protective factor during this period
was found to be the youth's prosocial behavior, associated with better use of the network in educational, creative activities or to connect with friends during the months of confinement.

2.5 Conclusion

In today's modernity, with the enormous diffusion of digital communication technologies, one cannot consider oneself innocent even for having sinned through negligence or unintended consequences of society's actions, especially if research has already revealed the risks in certain contexts (Giddens, 1991).

For example, entrusting a smartphone with Internet access to children and adolescents who for some reason may be considered vulnerable, without anticipating to them the possible risks, abuse, or unintended effects that may result, would be naïve. Not all of the risks we have discussed turn into actual dangers to individuals, and it is by no means certain that all users will be equally affected. For an effective online risk assessment, it is, in fact, necessary to take into account the particular and contingent interaction between the users and their vulnerabilities and the type of online environment to which they are exposed to: the platforms they use, the content they view and the contacts they frequent.

The study I conducted helps us to identify which individual or family variables may lead to risky use of the network. This results suggest to clinicians working with SEN or vulnerable children, to monitor not only their offline contexts (school, family, friendships), but also the virtual one.

This study also showed great discrepancy between parents' and children's perceptions of online risks. This may lead to the implication that researchers will need to be more careful with respect to the sample they select when they want to investigate exposure to online risks. In fact, parents, despite generally being unaware of online risks (Baldry et al., 2015) tend to perceive more risky activities, especially when they have children with special education needs. This result may mean that parents have an idea influenced by their children's general behavior, which, in the case of our sample, was more problematic in those with special educational needs. Future studies could dwell on this discrepancy and investigate the reasons why it exists, whether cultural or related to maturity and individual perceptions.

Online safety interventions targeting children are found to be highly effective for youth (Hudson et al., 2018), however, if these issues are only occasionally addressed rather than
integrated into family or school life, vulnerable children could be more likely to not participate or fail to benefit from them. A report for Internet Matters (2019) found that 27% of secondary schools provide online safety education only once a year. If online safety education is provided so infrequently, it is possible that youth will lose trust in adults as a source of help if or when issues occur on the web.

It is important that adults demonstrate a commitment to the issues of the virtual world, particularly with vulnerable children, by maintaining an ongoing dialogue about media education. In addition, as our results in moderation analysis indicate, it seems important that dialogues and supervisions from parents occur in a calm and positive family climate. Conversely, high levels of control are associated with higher levels of online risk.

Limitations of the study include a limited sample, due in part to the difficulty of involving schools in participant recruitment during the coronavirus crisis, when most managers and teachers were busy looking for an appropriate way to conduct distance learning classes and maintain a high level of involvement of children in regular classes.

Another limitation consists in the cross-sectional nature of the data, which does not allow to make predictions about the causality of the associations, and therefore, about effectiveness of different mediation strategies. The results of this study only allow to indicate which strategy is associated at a given time with less or more exposure to online risk in young people.

In addition, considering the similar background of the sample (small schools in the same city), socio-cultural variables were not considered, which could instead identify any other variables important in influencing the choice of mediation strategy.

Future research on this topic could collect longitudinal data, with the aim at investigating both the effect of parental mediation’s strategies on children, their socio-cultural status, and the effect of interventions involving parents, aimed at preventing or limiting the risky use of social networks in children with and without SENs.

The fact that active mediation strategies correlate with total online risks perceived by parents suggests to us that these strategies are implemented after an unpleasant event has happened to children.

For this reason, it would be appropriate to evaluate experimental and preventive interventions involving educational institutions in order to generate large-scale awareness for all parents of young people in the pre-adolescent age group. Interventions of this kind could show us
whether indeed parents' risk knowledge and digital skills have an effect on young people's online behavior.

Notwithstanding these limitations, overall, our study leads us to conclude that more digital education is needed for children with social, academic, or emotional difficulties and that virtual world education should be a crucial area to be evaluated and offered in psychological service centers for developmental issues.

In addition, education about the digital world and appropriate ways to mediate children's Internet use could be offered to parents to prevent or limit difficulties in managing technological devices and increase their dialogue skills about Internet risks and opportunities.
Chapter 3:
Feasibility and early outcomes of a parent training intervention to engage parents in their children's media education

3.1 Introduction: involving parents in media education

Finding an evidence-based way to teach strategies and get parents to think about the Web, its opportunities, its risks, and the emotions it generates, is useful not only for families in charge of psychological services, such as Tice, but also to provide a model of a parent training program that can be useful to all psychologists and professionals who work with families.

Constructs and variables on which to base the design must be based on scientific evidence. In this case, the previous chapters of this thesis have provided a sound theoretical basis for the implementation of the course.

As the previous chapters of this thesis suggest, there are a number of variables that can be improved by parents to make their children's Internet use safer. First, as the literature review (Chapter 1 of this thesis) suggests, both types of mediation (active and restrictive) limit problematic online behaviors and risks experienced online. Excessive controls and restrictions, however, can limit children's opportunities to use the Internet for positive purposes and even their digital skills. The same review suggested how parents may be aware of what is actually happening to their child online. Knowledge of what happens to minors online, in fact, can lead minors to want to talk to their parents about what happens them online, limiting the risk of facing a potential danger on their own.

Chapter 2 also emphasizes the importance of a good family climate suggesting that children's experienced risks decreased with high levels of parental controls when good family relationships are perceived by children. In cases of low levels of family relationships, instead, online risks increased when parents had many controls in place. The same study also highlighted how the perception of parents with respect to the online risks experienced by their children is different from that of the children themselves, highlighting a discrepancy in the actual knowledge of the risks to which children are exposed and the need to provide moments of confrontation and training for both young people and parents.

Obviously, the cross-sectional methodology that we have used in the second chapter of the thesis does not allow us to draw conclusions about causality. However, results of the two
studies allowed us to understand some protective factors to implement (parent-child relationship, parental awareness of their children’s online activities, active mediation practices).

The period of closures due to the Covid-19 pandemic has also made families even more concerned about their pre-teen and teenage children's use of the Web, prompting psychologists to find innovative and effective ways to involve them in their children's digital media education.

Entering the keywords "Web-based intervention" and "Parents" on the major search engines (PubMed and Psycinfo), I note that the vast majority of articles are related to interventions for parents of children with specific medical or neurodevelopmental conditions like obesity, cancer, diabetes, autism, asthma, chronic pain etc.

Few studies in the literature have examined the outcomes of web-based and group-based parent training for parents of children or adolescents in the general population and, in particular, just one study has evaluated an intervention to support parents in their role as mediators of digital content (Scull et al., 2019), however, it was specific to the parental role in sexual content’s mediation. Nearly all of the online parent trainings discussed in the literature, moreover, involved watching videos and performing exercises individually by each parent, and almost none involved groups of parents coordinated "live" by a psychologist.

For example, a recent study (Dai et al., 2020), sought to show the acceptability of a behavioral program for caregivers of children with autism. The program consisted of 14 modules with theoretical information on managing children's problem behaviors. Qualitative data showed that the program was clear and effective in teaching them new skills, but only two-thirds of parents completed viewing all of the videos.

The current study aims to analyze the feasibility and training effectiveness of a group course for parents led “live” by a psychologist to support them in their role as mediators of digital content for their children. The second study showed some differences between adolescents with and without SEN towards online risks. However, these differences, which show greater exposure to Internet risks for adolescents with specific difficulties, are perceived only by parents, while the same adolescents with SEN do not perceive that they incur greater risks on the Web. This difference in perceptions prompts us to hypothesize new methods of inquiry to understand social reality, and suggests that we create a pathway that is accessible and feasible for parents in general population, of kids with and without SEN.
3.1.1 Effectiveness of web-based and group-based parental interventions

Parental involvement encompasses a wide range of parenting behaviors, but usually refers to the use of resources by parents and/or family members in the education, well-being, and activities of their children. These investments can take place in or out of school, with the intention of improving children's inclusion, learning, and sociability.

The parent support literature shows the effectiveness of interventions for parents, in terms of increased parenting success, promoting effective parenting skills, positive parent interactions with children and teaching appropriate and functional communication skills (Kaminski et al., 2008).

Despite the proven effectiveness of parent training programs, usually delivered face-to-face (in groups or individually) their positive effects, intensiveness, and sustainability are often compromised due to low participation levels and high dropout rates (Ingoldsby, 2010). This could occur due to both practical (e.g., schedules, transportation) and psychological (e.g., family member resistance, beliefs about the treatment process) barriers of parental (ibid.).

Hackworth and colleagues (2018) explored contextual variables associated with low participation, identifying at least four: poor public transportation, large travel distances, social isolation and work. A combination of these factors can lead to a very low rate of parental involvement, such that it prevents validity. In preventive parent training, for example, only 10 to 34% of eligible parents enroll in the course (Nix et al., 2009; Thornton & Calam, 2011); among those who do enroll, attendance rates are often less than 50% of meetings, and some data show that up to one-third of parents enrolled in the program do not attend even one session (Scott et al., 2010). Such low participation rates result in a decreased ability to assess the true effects of the intervention and reduced effectiveness of the intervention for participants.

Identifying innovative approaches to providing interventions to parents, such as group, online, or "live" mode, is critical to increasing their reach and accessibility. The Institute of Medicine (IOM) report on the prevention of psychological and behavioral difficulties identifies the Internet, media, and other current technologies as appropriate modes of intervention to reach large segments of the population (National Research Council and Institute of Medicine, 2009). The IOM has also identified the need for more studies to evaluate their effectiveness.

Among the advantages of the online mode for this type of intervention, in fact, are flexibility, convenience, ease of use, consistency of participation (good fidelity rates), reduced
time spent traveling for both providers implementing interventions and parents, and reduced costs (Baggett et al., 2010; Self-Brown & Whitaker, 2008). These benefits eliminate the main factors contributing to low parental participation in traditional models (Hackworth et al., 2018) such as poor public transportation and large travel distances. Also, the "time and schedules incompatible with work" factor can be resolved by asking those involved for their preferred times to attend training.

Early data on video conferencing for group therapy are promising. Studies have reported results similar to those found in face-to-face groups for 125 clients with post-traumatic stress disorder (Stubbings et al., 2013) and for clients with traumatic brain injury (Whiting et al., 2021).

A review on Support Group Videoconferencing (Banbury et al., 2018) found a trend of improved mental health outcomes. Benefits included engagement with others with similar issues, improved accessibility, and development of knowledge, insights, and skills useful for one's mental health. The video-conferenced groups were able to replicate traditional group processes such as bonding and cohesion. Similar results were reported for those who compared face-to-face and video-conferenced groups. An uncontrolled feasibility study shows that a program delivered online (N = 13) was associated with significant reductions on three measures of parental psychological symptoms from pre- to 6-month follow-up (Rayner et al., 2016). For the intervention presented in this study, besides the online approach, I choose to use a group-based approach because of its advantages in helping normalize challenges faced by parents, opportunities to provide peer support and model coping strategies, and the efficiency and cost-effectiveness of the group compared with individual treatment.

3.1.2 The Acceptance and Commitment Therapy (ACT) approach

The primary goal of many parenting interventions is to teach them specific skills to deal with their children's behaviors. Moreover, the impact of restrictions from Covid-19 has been negative for parenting and has changed parents' relationship with their children by increasing the use of harsh parenting (Chung et al., 2020). Given that, as the previous chapters suggest, a good family relationship is also protective against online risks, it is important to us to support parents and mitigate the negative impact of stress. To this end, in addition to general information components with respect to technological devices and hands-on exercises to model parents in the proper use of mediation strategies, psychological exercises were proposed based on Acceptance
and Commitment Therapy (ACT), a model of reference that has already been shown to be effective in improving one's adjustment and flexibility in raising children with various difficulties (Blackledge & Hayes, 2006; Burke et al., 2014). ACT is a "third wave" cognitive behavioral intervention aimed at improving our psychological flexibility (Hayes et al., 2006). ACT has 6 central processes (Harris, 2006):

- **Acceptance** - Creating space for emotions, impulses, and feelings that we might otherwise suppress or avoid (experiential avoidance). This allows us to avoid to waste too much energy on them and move on more easily.

- **Cognitive defusion** - A mindfulness strategy that involves recognizing our psychological experiences objectively rather than perceiving them as threats or realities. Our feelings, therefore, are simply sensations and not portents of something that will actually happen. Thoughts are thoughts and not necessarily true, intelligent, or important.

- **Present Moment** - Foster an awareness of how we are currently feeling, both physically and mentally is a very important component of ACT. Rather than dwelling on the past or worrying about the future, connecting with the present means fully engaging with the "right now."

- **Self as Context** - Seeing our psychological and physical experiences as transient and ever-changing helps us not to become attached to them and live more flexibly (Neff & Tirch, 2013).

- **Values clarification** - exploration and clarification of the things we find personally significant helps us move in that direction. Values clarification worksheets in ACT are often self-reflection exercises that help find direction and motivation.

- **Committed Action** - Setting long-term, values-based goals is the last, fundamental, component of psychological well-being according to the ACT approach. This phase helps people commit and work diligently toward goals through action.

Rather than avoiding psychological events, ACT is based on the belief that acceptance and mindfulness are more adaptive responses to life's inevitabilities. By experiencing our thoughts, physical sensations, and emotions in more flexible ways, acceptance commitment therapists argue that we can reduce the negative behaviors to which they often lead (Bach & Hayes, 2002; Hayes et al., 1996). The exercises we have proposed build on these components and are exercises designed
to increase parents' levels of flexibility, acceptance, and awareness. Walser and Pistorello (2004) point out that the benefits of offering ACT in groups are many:

- shared examples in groups can help people normalize their experiences and place problems within the control/avoidance frame,
- some of the ACT interventions lend themselves to being physically performed in a group setting,
- observing how others show acceptance and willingness can be an encouraging, powerful, and challenging experience,
- the group setting can stimulate difficult psychological content by providing a social context to cultivate the core competencies of ACT,
- the group provides an ideal setting for clients/patients to engage publicly about values, goals, and actions.

ACT involves a number of exercises focused on its main components (Harris, 2006). Regarding values, for example, patients in an ACT-based pathway are generally encouraged to think about what they want to do with their lives, not what they don't want to have or feel. This reorientation is achieved by helping patients define what they want their life to be and how it is represented in key areas such as family, friends, romantic relationships, leisure, spirituality, health, career, education, and community (Dahl & Lundgren, 2006). In a second step, additional experiential exercises are used to define goals that can lead people in the direction of those values.

One of the most important facets of the ACT approach is the implementation of mindfulness components. Mindfulness is a way of paying attention to one's moment-to-moment experiences with a nonjudgmental attitude (Kabat-Zinn, 2003). Several reviews of the literature (Brown & Ryan, 2003; Chiesa & Malinowski, 2011; Parsons et al, 2017) have identified benefits of mindfulness on both physical health (e.g., pain management; improved immune system) and psychological health (regarding stress, depression, anxiety, obsessive compulsive disorder, eating disorders, and substance use). Several mediating mechanisms have been shown to explain these beneficial effects, including reduced levels of rumination as attention is more focused on present moment experience (Heeren & Philippot, 2010), increased cognitive flexibility (Malinowski, 2013), creativity (Lebuda, 2016), acceptance, and reduced experiential avoidance, leading to higher levels of psychological flexibility (defined as the ability to persist with, or change, behavior when doing so serves valuable purposes) (Kashdan & Rottenberg, 2010).
In the parent-training literature, mindfulness sessions have been suggested to parents as a strategy to improve parenting skills. These practices may allow parents to use parenting skills more effectively and improve parent-youth interactions, reducing the risk of youth problems (Duncan et al., 2009). Mindfulness in parenting has been tested with parents of children with developmental delays (Singh et al., 2007), conduct disorders (Bögels et al., 2008), ADHD (Van der Oord et al., 2012) and special educational needs (Benn et al., 2012). In one study (Lunsky et al., 2021), parents of children with autism were offered mindfulness sessions in group and online settings. The results showed a reduction in stress compared to the control group and were also maintained during follow-up after three months.

3.2 The current study

Given the results of the two previous studies that support parents' knowledge of the digital world and good parent-child relationships as predictors of good Internet use by their children, I wanted to assess the feasibility of an intervention for parents that would enhance both the knowledge of the Web, its risks, its potential, and the knowledge of good practices of mediation and relationship with pre-adolescent children.

The parenting support intervention is also intended to be tested by the Tice Center to become a future service, based on scientific research data and validated as feasible and effective. The idea is to offer this path to parents who come to the Tice Center. Since the annual number is quite high, we thought of proposing the course in small groups of parents. The path proposed in this study is based on psychological strategies and exercises based on ACT that is part of the theoretical orientation of the Tice Center, particularly suitable for working with small groups. Despite the many studies on ACT and its uses in group settings, no study has been concerned with evaluating the outcomes of an ACT-based intervention for parents designed to improve parent-child relationships and parental mediation strategies.

3.2.1 Method

The study obtained the ethical approval of the Catholic University of the Sacred Heart in June 2021. We used a descriptive, mixed-method design. Qualitative and quantitative data were collected in parallel, analyzed separately, and then merged to increase insight regarding the utility
and feasibility of a Web-based delivery model with parents who contacted us for support in managing their children's Internet use.

The intervention was conducted with two different groups of parents. The first group conducted the intervention in July 2021 and the second group in October and November 2021. Parents in our sample were informed of the event through posters (Appendix A) shared in Tice Center, in schools in the Piacenza area and online through Facebook parent groups.

The inclusion criteria for admission to the course were (1) being a parent of at least one child ages 11-16, (2) that the child used the Internet. Parental pairs were also admitted. Through the analysis of qualitative and quantitative data, the objectives of the study were:

- assess the feasibility of an online and group Parent Training intervention to support the management of children's Internet use. Specifically, we want to assess how accessible, easy-to-participate, and engaging parents felt the project was, and what aspects they found more or less useful and functional,

- evaluate the outcomes of the pilot project regarding parental stress, parent-child communication, application of parental mediation strategies and ways of observing and communicating with their children.

The data collected were both qualitative and quantitative. The mixed method methodology was chosen because of the ability to analyze both parental views and constructs related to parental communication and difficulties and was used in another study that sought to assess the feasibility of Parent training (Breitenstein and Gross; 2013)

3.2.2 Participants

In total, 20 parents contacted us to participate in the course. In the first group, 12 parents participated (9 mothers and 3 fathers, average age of parents: 43.5, SD: 2.6 average age of children: 11.6, SD: 1.14), while in the second group 8 (6 mothers and 2 fathers, average age of parents: 46.4, SD: 4.99 average age of children: 13.3, SD: 1.44).

Two parents of the first group and one of the second were mothers with children attending the Tice Center, the other parents became aware of the course thanks to the schools that distributed the posters and to the Facebook groups for parents where they were shared. After contacting us via email, parents were asked to view and sign the form describing the project and informed consent and to fill in some questionnaires aimed at investigating their parental mediation techniques, their stress level, their degree of open communication with their children
and the frequency of online risks experienced by their children. All questionnaires were completed after creating a self-produced anonymous code that would allow us to link pre-intervention responses to post-intervention responses.

Parents were also asked to indicate dates and times when it would be easier for them to attend meetings. The majority of parents indicated evening times (from 9 p.m.) as more convenient.

3.2.3 Measurement

To collect quantitative data, we used some questionnaires widely used in the literature. As for the qualitative data, they were collected through a semi-structured interview conducted at the end of the pathway. Data collected in the self-report questionnaires were used to describe general trends in the data set and to converge with qualitative findings.

**Parental Stress Index.** To measure levels of parental stress we used the Parenting Stress Index - Short Form (PSI-SF) that derives directly from the Parenting Stress Index (Abidin, 1995). The Italian validation of the PSI-SF was conducted by Guarino and colleagues (2008). The test highlights the presence of three factors: 1) Parental Distress, 2) Parent-Child Dysfunctional Interaction, and 3) Difficult Child.

**Parent Adolescent Communication Scale.** To measure the levels of problematic or open communication between parents and children we used the Parent Adolescents Communication Scale (Barnes & Olson, 1985). It consists of 20 items measuring the quality of communication between adolescent and parent. Regarding mediation strategies and risks experienced online, we used checklists derived from the Net Children Go Mobile, parent form (Mascheroni & Ólafsson, 2014), the same ones used in the study reported in Chapter 2 of this thesis.

**Semi-structured Interviews.** Finally, we proposed to participate in individual semi-structured interviews with parents who participated in the project. The interview was intended to explore two main areas: feasibility of the pathway and outcomes. With regard to feasibility, three main aspects were investigated: how was the participation experience in general, what were the strengths and weaknesses of the pathway, and more technical comments about schedules, number of meetings, number of participants, and platform used. In terms of outcomes, parents were asked to indicate whether anything had changed since the meetings in the way they observed or interacted with their son or daughter with respect to their Internet use. The interview outline is attached (Appendix B).
3.2.4 Procedure

The intervention was conducted in five weekly meetings of one 90 minutes each. The platform used was Zoom and the meetings were conducted in the evening hours (9 pm, a time when all parents were available). The topics of the various sessions are presented in Table 35. One week after the end of the five meetings, parents were asked to participate in individual interviews designed to investigate their impressions of the course and any changes in observation and interaction with their children and to complete the post-test questionnaire.

The first group, which attended the parent training in July 2021, attended one meeting per week, while the second group, which attended the project between October and November 2021, participated the parent training on a biweekly basis. The total number of meetings for both groups was five.

Seven of the 20 participants completed both the pre- and post-test questionnaire and 11 accepted to be interviewed. Qualitative data from the interviews’ transcripts were codified by two independent coders and analyzed using NVivo software, with a thematic approach. At the end of the course, all participating parents were emailed a pdf with the topics covered in the course and some operational suggestions.

The questions and answers from the interviews were later translated from Italian to English for the purpose of writing this thesis.

Table 35

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<tr>
<th>Topics and exercises of the various sessions</th>
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<td><strong>Day 1 Presentations</strong></td>
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<td><strong>Group rules</strong></td>
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<td><strong>Parenting Values and Goals</strong></td>
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<td><strong>Sharing of difficulties</strong></td>
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<td>Presentations of the group. Sharing of group rules (related to privacy and respect for others' opinions). Clarification of the differences between parental &quot;values&quot; and &quot;goals&quot;. <strong>Exercise 1: Define your values</strong> (Harris, 2011): Parents were asked to identify from a list their three most important values. They were then asked to identify one or more goals to set for themselves as parents that would move in the direction of those values; Descriptions of one's difficulties in the management of children’s digital devices, description of a problematic episode related to the management of the Internet of the children, expectations about the course. Sharing how they perceive their children's media and Internet use.</td>
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<td>Individual Interviews</td>
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3.3 Results

In both cycles, the participation rate was high (93.3% for the first cycle and 85% for the second). Based on the thematic analysis of the interviews, several areas emerged regarding feasibility and outcomes of the parent training intervention. The image below shows a description of the results (Figure 4).

Figure 4

Results description chart

3.3.1 Feasibility

3.3.1.1 General Experiences.

Through the semi-structured interviews, I was able to investigate some aspects related to participation (i.e., how parents experienced the course) and some aspects related to outcomes (i.e., any changes in parents' thinking or behavior after attending the course). Regarding the overall experience, parents reported that they perceived themselves as engaged and attentive parents. An important aspect with respect to reported experiences relates to the couple's setup. Two different
parental couples were present in the two groups. In particular, one participant was impressed with her husband's commitment during the course: "In one of the exercises you made us do, he compared himself to a hippo... and it's true, he's very external, I'm much more inside in the education of the children (...). He is very introspective, so this amazed me because when he explained to you about the hippopotamus... I was astonished and I said: finally F. has said something...!

One participant who did not attend as a couple also reported sharing course content with her partner: “I socialized with my partner everything I was learning from the lessons from start to finish, we finished talking at midnight. (...) we also talked about values, what we think we should pay attention to and what our daughter should do independently”.

Many parents, when asked about the experience in general, also reported that the course made them think about their own ideas about technology. One participant, for example, reports: “Before, the Internet was all negative, one thing to fight, your perception is only negative, then you start to think about all the opportunities, and you become more aware of your reactions...what my son's Internet use causes in me”. Another participant declared: “The course has made the parent more aware: parents had the opportunity to learn more about themselves. That is, what we are and what we want from our kids”.

3.3.1.2 Strengths and weaknesses.

Regarding strengths and weaknesses, all parents spoke positively about the course being group-based. In particular, many spoke of the comparison with other parents as positive because they felt less alone, understanding that their problems were also those of other parents. A mother reported, "I took some comfort...I saw that so many people have these difficulties anyway...". Another participant said: “You are in a group and you also listen to what others say and then... a little bit.. you feel less alone in this journey that you do as a mom”. Related to the group component, some parents perceived more freedom to express their problems. A mother, for example, reported: "Finally someone says: <Yes, I have this problem!> Here where I live everyone is good, everyone is perfect. I am from a small town..”. Another participant also reports: “I think it's great that we don't know each other... they don't know your story... if we did know each other; we wouldn't say so much”.

Someone spoke of an initial awkwardness in sharing their difficulties as a parent, which subsided over the course of the meetings: “There was a bit of awkwardness in talking about my personal issues with the children...particularly with the devices...Then over the course of the
meetings I realized that it is a problem that involves other people as well”. Still with respect to strengths and weaknesses, there were mixed opinions on the practicality of the course: many parents found the exercises practical and easily applicable to real-world settings, while other parents found them to be too theoretical. A father, for example, reported: “It wasn’t the classic class where you just listen.... And that helped you feel like a part of the whole.” A mother reported: "it was very hands-on in my opinion, even showing the videos and projecting the scenes...getting us to talk...maybe before the course one could think to be the only one..". Other parents, however, say that the course was too theoretical: “I would have liked to discuss the real life because you gave the cues, technical cues for the most part, but then, when you live the moment with your feelings of mom.. is not always so easy to put in place everything you say”. Going into the specifics of the various exercises, the token economy appealed to many parents. A mother stated, for example: "I will definitely implement the token economy. Very smart, not punitive, but rewarding...I was a teacher so I understand the validity of this technique....".

Other parents liked the game played through the Dixit cards, in which cards were projected and parents were asked to indicate which represented their parenting style the most. A mother said: “And one part that I also liked was when we played the Dixit game... because to me one of the images... had really struck me, I saw myself in it. And I saw that other parents also chose the same image but interpreted it differently... based on their own perception”. Many parents also enjoyed the exercise in which they were asked to watch an exaggerated video of a parent-child argument scene related to a device and to identify first with the parent and then with the child, describing what the characters might be thinking and feeling. A somewhat cited topic was the cognitive-behavioral approach, in which people received information with respect to how thoughts, emotions, and behaviors are related. For example, one mom said: "Can I tell you what made me think the most? That lesson where you had talked about the event, the thought and what it causes you... I reflected on my own reactions when I'm struggling and I can't get my son away from the playstation...I reflected a lot."

Mindfulness sessions were also appreciated by most parents and some of them reported benefit from the practice and tried to do it autonomously after the course.

3.3.1.3 Technical Aspects. Parents were asked for their opinions regarding technical aspects of the project such as the time of the sessions, weekly or biweekly frequency, platform used, and number of participants. Regarding the time of the meetings, 9 pm was considered an appropriate time by the majority of parents, although some reported fatigue at that time of the
evening. For none of the parents, the platform used (Zoom) was difficult or problematic. The parents of the second group, who held two meetings a week, said that it would be more effective to propose only one meeting a week: “In order not to take away family time, instead of having two meetings, once a week would have sufficed, but for a longer period of time”. Regarding the number of parents who attended the classes (12 in the first group and 8 in the second), some parents in the first group reported that since this was a project in which a lot of sharing was required, a smaller number of participants might be more adequate. As for the duration of the project, some parents would have liked to have more meetings: "There are few meetings, I would have done more... I would have liked to have done a longer journey”; “It has been too fast..very very fast. It passed quickly”. In general, many parents described the five-meeting commitment as doable: "It's not that unachievable...once a week at that time...you can arrange it just fine. It's not a three-four month project. it's doable!"

3.3.2 Outcomes

3.3.2.1 Awareness.

The majority of parents reported an increase in awareness with respect to their feelings about their children’s devices’ use: “I became aware of my thoughts about devices and the subsequent reactions to those thoughts”. Two parents reported that they were able to engage their children in this new awareness as well. One mother, for example, reported, "He didn't realize how much time he was in front of the screen before. And seeing me more prepared, he was the one who came to me one day and said: Mom, I've been playing online games all morning! I told him: at least you realize it now!".

3.3.2.2 Flexibility and compromises.

Another recurring theme was flexibility and compromise. Three parents reported increasing their level of acceptance of their own limitations and the possibility of reaching a compromise. A mother, for example, said, "If he doesn't follow a rule once in a while I'm more comfortable now because I realized that I also have to survive. Otherwise it would be devastating". A dad reported: “I get that rules are needed, but I can't alienate them from technology”. Two other parents have reported that they have reached compromises through the course: "I couldn't stand that youtuber's voice was so loud, but after the course we found a compromise. He lowers the volume, and I put the headphones on”
3.3.2.3 Increased attention.

Two parents also reported an increase in attention with respect to their children's online activities. A mother says, "I definitely check those few rules I gave her more consistently now". Some parents are more prone to know the real online activities done by their children: "(...) we want to see if we are really immune to this issue, or if our daughter even in the short time in which she uses the computer is taken by this whirlwind...". A mother of two daughters says, "I try to watch them more carefully now...I get them out more and they are a little less connected".

3.3.2.4 Reflection before action.

Two parents who chose to undergo the interview reported thinking more before taking punitive actions when their children spend too much time online. A participant reported: "(...) now I have a more conciliatory attitude, more sympathetic, more, let's say, aimed at making him understand the benefits and the damages, rather than acting as a brake, -Take it off! disconnect it-, I try to make him aware". Another mother reported, "There are still moments of confrontation, but thanks to the course I was able to reflect, think before I got to the fight with him."

3.3.2.5 Familiarization with technology.

The majority of parents reported increased openness and familiarity with technology. Some reported an increase in time shared with their children with respect to what is happening online. Two sentences that exemplify this openness are those of two mothers who participated in the first group: "I had never been interested in these things, but now there has been a small opening on my part, so much so that my child came to me saying 'mommy I have to show you a video, you have to see it, you have to see it!' before he never shared anything with me!"; "Now when he calls me and says "mommy come and see this" I just sit there and watch (...), before I didn't do it, now thanks to you I'm learning to look out more to this world of his".

3.3.3 Quantitative data

To support the qualitative data, we wanted to add some questionnaires completed pre- and post-intervention by parents. In particular, we wanted to measure the levels of problematic and openness of parent-child communication with the PACS scale (Parent-Adolescent Communication Scale), the frequency of mediation strategies, and the risks experienced by the children. Since ACT-based exercises are also aimed at reducing parental stress, we chose to measure this construct as well. Results about Communication aren’t significant, but there is a slight change in the average “Openness” and “Problematic nature” of communication (Table 36).
With respect to different mediation strategies, no significant changes emerged, but slight changes in the frequency of active mediation strategies and children's online risks perceived by parents appeared (Table 37).

**Table 37**

<table>
<thead>
<tr>
<th>Mediation strategies and online risks t-test results</th>
<th>M(SD)</th>
<th>t</th>
<th>gl</th>
<th>Sign.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Openness of Communication PRE</td>
<td>38.2(6.4)</td>
<td>-.72</td>
<td>6</td>
<td>.49</td>
</tr>
<tr>
<td>Openness of Communication POST</td>
<td>40.2(3.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication problems PRE</td>
<td>24(7.5)</td>
<td>-.10</td>
<td>6</td>
<td>.92</td>
</tr>
<tr>
<td>Communication problems POST</td>
<td>23.2(8.6)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Regarding the PSI questionnaire, the results of the t-test do not show significant data, but a slight reduction in the average of two of the three dimensions ("Parental Distress" and "Difficult Child"), and a tendency to increase in the average of the dimension "Dysfunctional Interaction" (Table 38).

**Table 38**

**PSI questionnaire t-test results**

<table>
<thead>
<tr>
<th></th>
<th>M(SD)</th>
<th>t</th>
<th>gl</th>
<th>Sign.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active mediation strategies PRE</td>
<td>3.2(2.5)</td>
<td>-1.2</td>
<td>6</td>
<td>.24</td>
</tr>
<tr>
<td>Active mediation strategies POST</td>
<td>5.8(1.3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restrictive mediation strategies PRE</td>
<td>7(3.8)</td>
<td>-.47</td>
<td>6</td>
<td>.65</td>
</tr>
<tr>
<td>Restrictive mediation strategies POST</td>
<td>7(2.9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children online risks PRE</td>
<td>16.2(1.4)</td>
<td>.000</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Children online risks POST</td>
<td>15.6(2.0)</td>
<td></td>
<td></td>
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</tbody>
</table>
3.4 Discussion

The results of this study suggest that a parent training program focused on managing children's Internet use, group-based and Internet-based can be feasible and produce positive outcomes. In particular, parents largely appreciated the group mode of the course, and especially the possibility of being able to compare themselves with people with similar problems. It seems that an important detail was the fact that they did not know each other offline, a factor that may have led to greater openness and sincerity in recounting their problems. Another study in the literature reported similar positive feedback on the group mode of parent training (Fogler et al., 2020). Of the experiences reported by parents, some appreciated the opportunity to participate in the parent training as a couple or stated that they shared all of the topics covered in the course with their partner. Another study in the literature had found positive effects of a parent training program based on Acceptance and Commitment Therapy (Brown et al., 2015) on parenting couples, in terms of improved satisfaction with their relationship.

Parents really enjoyed the ACT exercises, especially the one related to creating a token economy and the one related to describing one's parenting through Dixit cards. Many studies have found Cognitive Behavioral Theory to be effective in conducting parent training programs for managing adolescents (McCart et al., 2006). Also, the lesson in which the connections between thoughts, emotions and behaviors were explained received positive feedback.

Regarding the technical aspects, the participation rate for both editions of the course was high (93.3% for the first and 85% for the second cycle). This data, together with the parents' statements, suggests to us that the use of technology for parents does not represent a barrier. The weekly cadence, as opposed to bi-weekly, was appreciated more. The length of the course was

<table>
<thead>
<tr>
<th></th>
<th>M(SD)</th>
<th>t</th>
<th>gl</th>
<th>Sign.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental Distress PRE</td>
<td>31(16.5)</td>
<td>.290</td>
<td>6</td>
<td>.78</td>
</tr>
<tr>
<td>Parental Distress POST</td>
<td>28.8(16.2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dysfunctional Interaction PRE</td>
<td>25.2(12.2)</td>
<td>-1.5</td>
<td>6</td>
<td>.18</td>
</tr>
<tr>
<td>Dysfunctional Interaction POST</td>
<td>27(15.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficult Child PRE</td>
<td>24(14.8)</td>
<td>-.64</td>
<td>6</td>
<td>.54</td>
</tr>
<tr>
<td>Difficult Child POST</td>
<td>22.8(18.1)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
sustainable for all parents, but some would have preferred to run more meetings. The number of participants was also perceived as adequate, although some parents would have preferred fewer participants per group. Regarding the outcomes of the course, many participants reported an increase in awareness of their thoughts and expectations about their children. Other aspects that changed, in the opinion of parents, were greater flexibility in proposing rules and making compromises, greater closeness to their children's online activities, and greater attention to what is happening online. Many also described some changes in reactions stating that they were less impulsive and calmer in discussions with their children related to device and Internet use.

As was also the case in Breinstein and Gross's (2013) study, quantitative results showed trends of improvement in some areas. First, there is a trend of slight decrease in two of the three dimensions of parental stress and, second, a slight improvement in average communication appears. In addition, consistent with what was suggested within the course, the data show an increase in frequency of active mediation behaviors (I sit with my child when he/she is on the Internet, I talk with him/her about what may be happening online, I share my concerns with him/her, We create shared rules etc.).

From the point of view of the operator, a psychologist and expert in parent training, the number of sessions, the number of parents per group and the chosen time is considered adequate and sustainable.

3.5 Conclusion

In general, the quantitative and qualitative data referring to the parent training course show that the course is sustainable for parents, has a good training effectiveness and is functional. In light of previous studies, which show that parents of children with Special Educational Needs report greater concerns about the virtual world and the use of the Internet by their children, this course may be a useful tool for professionals, psychologists and psychotherapists, who deal with children and adolescents particularly vulnerable to virtual environments and their families.

It is necessary to analyze these results with caution and knowing that they reflect the opinions and views of a limited sample with similar characteristics: all parents were Italian, lived in small towns, worked and asked to participate in the course because they were concerned about the online activities of their children. In addition, they all had a rather negative view of the
Internet and felt that it was wrong to use the Internet so frequently, often comparing their own childhood to that of their children.

Further studies are needed to assess the feasibility and effectiveness of online group interventions, also considering the increase in requests for psychological support and the generally unaffordable costs of psychotherapy or individual psychological support. Even from the point of view of sustainability for public or private clinics that provide psychological and educational services, group and web-based courses can be an excellent solution to reach as many people as possible by limiting staff costs and therefore costs for families and promoting the spread of psychological practices on a wider scale.

This study also helps to highlight is that of implementing courses for psychologists to work with groups. Such knowledge can be increasingly useful in today's world, where more and more families may need support services. The relevance of this parent course and its feasibility and sustainability aspects make it an interesting model for developing additional courses on both parental involvement in media education and other types of individuals and patients.

3.5.1 Limitations and future research

This study has several limitations that need to be addressed in future research. First, as well as the feasibility study by Breitenstein and Gross (2013), we have a small sample of participants. In future work, we plan to validate the program conducted in parallel by multiple professionals and using a control sample in order to confirm and clarify our results.

A second limitation pertains the parents who contacted us to ask about participation. Although they might represent an appropriate population, since these parents were already interested in receiving interventions on Internet management, they were already aware of the problematic nature of their situation. We would like to overcome this limitation by proposing ourselves to participate in the program to parents in schools or psychological centers who have not requested it, or who are unaware of it, but who might need and benefit from the course.

Moreover, the fact that the parents had asked for help by contacting the researcher themselves may be the motivating factor behind the conclusion of the course and, from a methodological point of view, may represent a problem for the reliability of the results.

In addition, the sample was too small. The quantitative data we collected can only show us trends of change, but not statistically significant results.
The fact that a parent did not like some of the topics proposed is important. This made us realize that most likely, not all parents will be motivated and committed to a cognitive behavioral theory-based method of learning; these parents may benefit more from other types of interventions. Further investigation should be done regarding the characteristics of the parents who are more inclined toward web-based interventions. Similarly, we should identify individual characteristics that indicate greater motivation and engagement in preventive interventions.

Also, future studies could also involve the children of the participating parents, assessing pre- and post- changes in the parent-child relationship and Internet parenting mediation.

Despite these limitations, our feasibility study provided important information that regarding the comprehensive development of Web-based intervention or prevention programs for parents.
Conclusion

This thesis aims to generate knowledge and functional pathways for the daily clinical practice of psychologist and in particular professionals of Centro Tice, a center that provides training and psychological services for various age groups. In particular, the objective of this thesis was to generate a pathway for parents, useful in supporting them in the difficult role of mediators of digital content and activities for their adolescent and pre-adolescent children.

This thesis, therefore, starts from an accurate analysis of the literature. The first chapter, in reports the results of a scoping review, which provided the main notions regarding parental mediation strategies with regards to children’s exposure to online risks, that is, the ways in which parents relate to their children with respect to their use of the Internet. This review of the literature first showed which strategies are the most discussed in the literature, from the days of television up to the present, when families have to deal with the pervasiveness of digital tools, social networks and smartphones. The first chapter represented an important theoretical basis, offering interesting insights on which, as clinical psychologists, I questioned myself. The review, in fact, showed not only that parental mediation strategies have different effects and associations, but also that there are characteristics that make a child more or less vulnerable to the problematic use of the Internet.

The second chapter starts from this awareness and aims to investigate the characteristics of "online vulnerability" of minors, and how these interact with parental mediation strategies. Specifically, I chose to examine whether children with special educational needs (SEN) were at greater risk for problematic Internet use at the levels of cyberbullying, cyber-victimization, Problematic Internet Use and content, contact, and conduct risks (Livingstone et al., 2009).

Parents of teens with SEN reported their children to be at greater risk online, but the same perception does not exist among their children. Therefore, some inconsistencies emerged in this study with regards to the possible higher vulnerability of SEN children, even if the sample of children was small.

Independent of SEN condition, the quantitative study in this thesis suggests that, consistent with the literature, there are some important associations between individual characteristics of psychological vulnerability (e.g., body identity, school adjustment and social adaptation) and risks experienced online or risk of Internet misuse. This may support the contention that online vulnerability is a continuation of that experienced in offline social contexts by children.

Because of the inconsistencies about the higher vulnerability of SEN children, other data suggesting that children with other possible psychological vulnerabilities may be more exposed to
online risks, and the data indicating that, for children in general, having good family relationships and some specific mediation strategies are protective factors, we decided to develop a parental intervention for parents of the general population.

This is an important finding because it confirms what was found in chapter two, that parents of children with SEN are more concerned about their online activity and Internet use.

Another important finding emerged by the moderation analyses. The results showed how the frequency of parental controls moderates the relationship between family relationships and online risk. Checks when associated with low quality of family relationships are associated with increased risk, whereas they are associated with decreased risk when associated with good quality of relationships.

Social adjustment also moderates the relationship between active mediation frequency and problematic internet use. Thus, the data showed that at low levels of social adjustment, problematic Internet use decreases as the frequency of active mediation increases.

This result means that positive family relationships are an important protective factor in favoring a correct Internet use by youth, and that learning to actively mediate can be especially useful for parents of socially challenged children. Furthermore, it was seen that in general, for children with and without SEN, at high levels of active mediation, experiencing online risks decreases as the boys' level of social adjustment increases. This result suggests that social relationships are very influential on the use of the Internet that young people make, confirming that the offline life has a natural sequel in the virtual world.

Discovering the importance of family climate, active mediation, and parental familiarity with social networks and the virtual environment led me to the generation of an intervention that could address all of these issues through the approach I know best: acceptance and commitment therapy - ACT.

The last chapter aimed to evaluate the feasibility of an online and group intervention to support parents in their role as mediators of digital content.

The experience for the two groups of parents participating in the intervention was positive and the results of this study show how the online and group modality of conducting psychological and educational interventions for parents was feasible, effective and convenient. The limited sample and some methodological criticalities cannot make the results generalizable, but from the qualitative interviews I was able to extract important themes and positive feedback, especially regarding the group modality and the possibility of comparison with other parents.
At the Tice Center, we are considering offering this supportive intervention to all the parents we take in, as part of the basic service package. Some studies evaluating the effectiveness and enjoyment of this course are still missing to finalize any changes to the sessions; we are already laying the groundwork for studying the outcomes of other rounds of parent meetings. They are step for future work I will conduct in Tice Center.

In summary, the results from this thesis encourage me and my colleagues at Tice to move forward with the development of Web-based programs, not only for parents, but also for other categories of people who could benefit from a group intervention and the facilities that Web-based programs allow. For example, we will use the data from this study to generate and evaluate group and online psychological support programs for patients with anxiety disorders, Tourette's, Obsessive-Compulsive Disorder, and patients experiencing bereavement. There are currently twelve other Ph.D.s underway at the Tice Center, two of which are focused on validating online support programs.
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Appendix A: Project flyer

CICLO DI 5 INCONTRI GRATUITI PER GENITORI

Stiamo cercando di trovare un modo efficace per coinvolgere i genitori nell'educazione a un corretto uso di Internet dei figli. Ti va di partecipare?

Abbiamo organizzato 5 incontri gratuiti volti a supportare i genitori nella gestione dell'utilizzo di Internet dei figli (12-15 anni)

Ogni incontro avrà una durata di un'ora e trenta minuti

OTTOBRE 2021
Date e orari da concordare
Per info:
Dott.ssa Maria Clara Cavallini
333.4310962
clara.cavallini@centrotice.it
Appendix B: Outline of the semi-structured interviews

Dear parent,

Thank you for taking part in our study, at this time I would like to ask you some questions regarding your impressions of the course in order to make our service more efficient. At this time, as you know, I have turned on the recorder to record this interview and your answers, which will only be listened to by me and my research team. I remind you that you can decide at any time to withdraw from this interview or not to answer.

Let us begin:

1) How would you describe your experience? 1.1. Which were your feelings after the first meeting and after subsequent meetings?

2) What worked, in your opinion, in the course? 2.1. How did you find sharing experiences with other parents? 2.2. How did you find the content? 2.3. What did you like most and what did you find most difficult? 2.4. Can you give me your impression of the dates, times, the platform used and the number of parents attending?

3) How has your relationship with your son/daughter been during these last weeks? 3.1. Has there been any change in the way you observe/behave with him/her?

Thank you very much, your answers have been recorded and will be very useful to us, If you wish, you can obtain the results of this study in aggregate form and anonymously. If you have any questions about this study or the course, please do not hesitate to contact me.
Acknowledgements

Ringrazio la prof.ssa Simona Caravita che mi ha portato con pazienza ad affrontare sfide che mi sembravano insuperabili. Ringrazio, inoltre, i suoi colleghi dell’Università di Stavanger che mi hanno accolto e fatto vivere un meraviglioso periodo di formazione e studio in Norvegia.

All’inizio di questa scuola di dottorato, non pensavo che questa strada fosse adatta a me. Ora so che mi sbagliavo, ma in questi anni ho avuto ancora più bisogno di alcune persone che vorrei ringraziare. Per primi, mia mamma Mirella e mio babbo Ugo, che ci sono sempre stati, per aiutarmi, darmi consigli, portarmi all’aeroporto e farmi sentire amata. Mia sorella Francy che non ha mai smesso di consolarmi e trascinarmi, e mio fratello Teo, che mi ispira senza saperlo. Poi, i miei cinque nipoti: Bice, Leti, Seba, Tully e Mouad, che erano e sono un luogo sicuro in cui trovare dolcezza e ispirazione. Alberto, per il suo amore e supporto costante. Le mie nonne Franca e Luisa, e i miei nonni che sarebbero orgogliosi. I miei colleghi di Tice, e Franci Derba in particolare: senza di te non avrei mai avuto tempo di concentrarmi sulla ricerca.

Dedico questa tesi al mio studente Kri. Anche se non avevi molto bisogno di me, di noi, mi sento fortunata che qualcosa ti abbia portato a Tice e nella mia vita. Grazie per avermi fatto ridere tanto e per avermi mostrato quanto profondamente si possa amare il proprio lavoro.