

Cyber-victimization among Children: Prevalence, Characteristics, Gender Differences and Links to Social Difficulties

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Abstract

Objective: The current study presents an updated initial picture of the nature of Cyberbullying (CB) among children in Israel. The study examined CB as it is manifested among primaryits prevalence, characteristics and gender differences, against the backdrop of traditional bullying.

Methods: The study involved 242 pupils (54.1% girls). Data was gathered through questionnaires which were distributed to the participants, 4th and 5th grade pupils, from ten classes in two municipal primary schools located in the central region of Israel.

Results: The research findings show that CB exists in Israel among young children: 15.8% of the children reported being cyber-victims and 31.7% reported knowing cyber-victims. The percentage of girl cyber-victims was higher than that of boys. It was found that children who had been bullied face-to-face were likely to be cyberbullied as well. The findings indicate a significant correlation between the frequency of internet usage and cyber-victimization, and between CB and traditional bullying. Children who were cyber-victims reported having lower social support and a greater sense of loneliness than non-victims.

Conclusion: The findings indicate the need to design and implement intervention programs focusing on the social aspect, in these early stages, along with treatment programs for young cyber-victims in order The tender age of children involved in cyberbullying suggests the need to involve parents and teachers in the programs' design

Keywords: Cyberbullying; Cyber-victims; Children; Gender differences; Social difficulties

Introduction

In recent years technology has come to play a significant role in people's everyday life around the world, particularly in the western world, and that includes the everyday life of children and youths. The internet is now available for almost everyone everywhere and serves us in many areas of our lives. We use it for everyday communication, professionally, personally and socially [1]. As a part of that, the internet has become a social tool serving different age groups, including youth and young children, who use it to conduct social interactions [2,3]. These online social interactions are varied: some of them are positive and beneficial, and they enrich the children's lives, but some of them are negative and may prove to be harmful, with long-term implications, like cyberbullying.

The current article describes cyberbullying (CB) among primary school children (aged 9-11), whereas most of the studies on the subject have focused on youth populations. It examines the way in which young children find themselves becoming victims of bullying in the virtual world.

Since CB occurs within a social context and was found to be linked with different social variables [4,5], the study presented here also examined how it is linked to social difficulties among young children.

The study focuses on two social difficulties that seem to have a close connection to CB – the sense of loneliness and the lack of social support. Data was gathered through questionnaires which were distributed to the participants (4th and 5th grade pupils). The data analysis revealed trends and characteristics which may be used as a basis for planning and implementing ways of dealing with the problem, which is becoming more and more prevalent among young children, and try to prevent it in its early stages.

What is cyberbullying?

Online communication – the use of internet and the exposure to cyberbullying among children

The internet has significantly penetrated the households of the western world since the beginning of the 1990s, adding a further dimension to the existing generation gap and turning it into a "digital generation gap" [1]. A survey conducted in Ireland revealed that 92% of the families with children under the age of 18 had internet at home [6], and a research conducted in several countries, including the UK, the USA, Korea, Serbia, Turkey and Italy, showed that about 90% of school age children had access to the internet at home, and over half of them reported using it on a daily basis [7]. Livingstone and associates pointed out that rapid technological advancement has allowed everyone, including young children, access to the internet in a variety of ways, particularly through the mobile phones [8]. The situation in

Israel is quite similar: according to the data of the Central Bureau of Statistics, in 2015 over 85% of the households in Israel had computers, and about 84% had access to the internet. The current state of affairs, according to existing studies, is widespread internet use at very young ages, starting with the early grades of primary school, and mostly through the mobile phone. The internet serves the children in all areas of life (learning, leisure and entertainment) and the implications of its use are varied [1]. Some of them are positive – the use of the computer and the speed in which the children manage to extract information from it and enjoy the possibilities it has to offer – and some have negative aspects and risks in the online space. One of the internet's negative aspects is providing opportunities for CB, and allowing public display of offensive remarks, insults, defamations, boycotts and humiliations, when the fear of punishment is neutralized by the anonymity the online space affords [9]. It has been shown that the main harm done to children is caused by CB [10], which puts them in situations that may cause emotional and social harm which they cannot cope with, especially at a young age.

Cyberbullying

The term 'cyberbullying', also called 'electronic bullying' and 'internet bullying' [11], refers to manifestations of bullying and violence via technological means made possible by the online space. Smith and associates [12] defined cyberbullying as intentional aggressive actions taken by an individual or a group, using electronic devices repeatedly against a defenseless victim. Mason [9] gave a more detailed definition, emphasizing the underlying intention: "an intentional repetitive offense carried out using a computer, a mobile phone or other digital items, by an individual or a group" [9].

Cyberbullying has been discussed in research literature especially with regard to youth [13,14]. However, the phenomenon seems to be gradually infiltrating much earlier age groups [15]. Livingstone and associates, for instance, pointed out that digital technology users were gradually getting younger, and these days one could find such users at the age of seven [8]. The technological innovations, accessible to all, make it possible for the circle of abusers and abused in the online space to continue to increase.

Willard [16] classifies cyberbullying into seven main categories: 1. Flaming – sending insulting, offensive, harsh messages to an individual or a group; 2. Harassment – a continuous repetitive action of a disturbing nature, aimed at an individual or a group; 3. Cyberstalking – stalking via the internet in order to obtain details and private information which could be used to inflict harm, by means of direct or indirect threat, meant to cause fear or damage; 4. Denigration – spreading fabricated stories about an individual by sending false information to a great number of acquaintances, in order to ruin the individual's image and social connections; 5. Masquerade – assuming a false identity, in order to send negative or degrading information about another person; 6. Outing – exposing another person's private and intimate information in public; 7. Exclusion – excluding a person from a social encounter taking place in the virtual world.

Cyberbullying versus 'traditional' bullying

Traditional (face-to-face bullying) is defined as an aggressive behavior characterized by three criteria: (1) the intention to harm another person; (2) inflicting the harm repetitively over a period of time; (3) an unequal balance of power between the perpetrator and the victim: the perpetrator usually has a physical or a psychological

advantage over the victim [17]. Traditional bullying can be carried out in several ways, which can be classified into two main categories: direct bullying and indirect bullying [18,19]. Direct bullying is usually characterized by a direct assault carried out by physical or verbal contact with the victim, whereas indirect bullying is generally characterized by an assault which is not the result of contact, but of social isolation and similar behaviors [18].

Face-to-face bullying and cyberbullying share similar characteristics but also differ from each other [20]. According to Mason [9], cyberbullying is, in fact, traditional bullying adapted to the contemporary technological internet era, and both types may have far-reaching consequences for their victims. Among the differences is one of the most distinct characteristics of cyberbullying, and that is the anonymity of the assailant, unlike in face-to-face bullying, where there is no doubt as to who is the assailant and who is the victim. In cyberbullying it is not always possible to identify the person who has sent the message, and it is also difficult to determine how the perpetrator has emotionally affected the victims. The anonymity allows the bullies to attack in a much more hurtful and direct manner than if they had to deal with the victim face-to-face [14,15,21].

An explanation for this phenomenon was offered by Mason [9], when she claimed that online environment is characterized by 'removal of inhibitions', which means the removal of, or the release from, conventional social behavior that very often involves the inhibition or suppression of certain reactions. In reference to the online world, the removal of inhibitions and the release from barriers is made possible by using the anonymous space – the lack of face-to-face contact in the online social environment. This anonymity is used, among other things, to express negative feelings towards others. In other words, the fact that the perpetrators are often anonymous may allow this kind of violence to become much more powerful and hurtful than face-to-face bullying [13,22]. Furthermore, in CB, knowledge and technology become the perpetrator's advantage, as opposed to physical force in face-to-face bullying [11,23].

Another difference is how the tools of CB can increase the intensity of the damage. In contrast to face-to-face bullying, in CB, the offensive message can reach a large target audience very fast, and this way augment the damage, whereas in face-to-face bullying the victims are present at the scene during the assault [20]. Furthermore, CB only requires an effortless typing of several words on a keyboard [24] with no fear of immediate confrontation, which adds to the ease with which the inhibitions about offending are removed. This difference has to do with the fact that while in face-to-face bullying the action is easily detectable, in cyberbullying the repetition of the offense can be hidden or delayed [11]. For instance, when an offensive message appears on a social website, its appearance only occurs once, but whenever anyone of the many website visitors reads it and witnesses the offense, it becomes intensified and continuous. Therefore, as long as the offensive message is accessible online, the offense continues.

In CB, the bullies have very little to fear in terms of getting caught and punished, because using the internet does not give away their whereabouts. The online injury is usually immediate; as soon as the children connect to the network they are exposed to injury, sometimes with no way of knowing where it is coming from and who is responsible for it [23]. On the other hand, in face-to-face bullying, where there is a physical proximity between the bullies and their victims, the bullies can immediately see the results of their actions, and the victims can deal with the problem or ask for help. If the offense takes place on school grounds, the victims can escape as soon as the

school-day is over, whereas an online offense can take place anytime and anywhere and last for an unlimited period of time [20,25].

Cyberbullying may have negative implications on children's lives, both at the time of occurrence and afterwards. Among them one may find anxiety, depression, an intensified sense of loneliness, low self-esteem, decrease in academic achievements, failing physical health and even suicidal thoughts [26]. Although there is a great similarity between the implications of cyberbullying and those of face-to-face bullying, Willard claimed that those of cyberbullying could be more severe [16]. These implications are manifested even at the time the bullying actions occur, and they are also connected to how the children deal with them.

The focus of this article is to characterize CB among young children and to characterize its' victims. First, the phenomenon and its connection to traditional bullying will be presented, and then the correlation between the online offense and social difficulties, which are manifested by the lack of social support and the sense of loneliness, will be examined.

The social aspect of childhood

While most of the studies examining CB referred to various groups of adolescents, this study has focused on children between the ages of 9 and 11, at the developmental stage when their personalities are being shaped, their vulnerability is great, and they have not yet acquired the necessary tools and skills to deal with a variety of difficult situations. The period of childhood is usually defined from the age of 3 to the age of 12, and in research literature it is usually divided into two sub-periods: (a) early childhood – ages 3-6; (b) late childhood – ages 6-12 [27]. The current research refers to the late childhood period characterized by continuing cognitive and emotional-social development. Children start thinking logically in order to solve problems and they need to relate to their concrete representations. According to Piaget [28], cognitive maturity is an essential condition for moral development such as perceiving reality, organizing and evaluating experiences, and the ability for abstract rational thinking. From the social aspect, in late childhood children find themselves much more in the company of their peers, and they begin to establish social ties beyond school hours and to shape their own independent personality traits, involving processes of self-knowledge and self-regulation and putting together their self-image. In these years the social environment becomes more important and plays a crucial role in shaping their self-image [29,30].

Children's emotional and social development has a crucial impact on the shaping of their personalities. One of the reasons for this is the expansion of their social circles, which requires them to deal with unfamiliar situations. At the ages of 6-12, this development is characterized by their growing awareness of their social environment and by improving their cognitive and social skills. Social interactions become more important, participating in larger circles helps them create a sort of system where they share common values and behavior characteristics with other children. At this time the social ties with the peers become more complex [31,32]. At the same time, the children begin to be aware of their social status and the extent of their popularity in society [33,34]. They begin to form a more complex self-image and perceive themselves as social partners, initiators and problem solvers [35]. During late childhood (ages 6-12), the importance of the peer' group increases, and it continues to increase as the children grow up, becoming adolescents [36]. The peer group allows children to experience what they cannot experience while

interacting with adults. Dealing with the environment at this point requires developing social skills, such as the ability to obtain positive reinforcements from society and refrain from behaviors that result in rejection or punishment [37,38]. Shor and Danon [39] added that participating in a variety of activities with peers was beneficial for the development of high social skills and mutual understanding.

In addition, the emotional development process plays a significant role in dealing with social situations, because the children's emotional capacity, affects how they interpret social information and understand their surroundings, and it shapes their social behavior in a given situation. In the context of the theme of this study, one can bring as an example the correlation found among children in this developmental period (6-12) between restrained and/or inhibited behavior and social difficulties [40], or between shyness and flawed social skills [41]. In other words, at this age it is possible to notice children's emotional problems and abilities, try to regulate behaviors attached to them, try and moderate behavior, and this way help them undergo proper emotional development.

Nowadays, a considerable part of social interaction is carried out via the internet, and therefore the online sphere has also become a coping site for children. One can find interactions between the children's social lives in the physical world and those in the virtual one. The social difficulties experienced by children in the online world are affected by those they experience in the physical one, and vice versa. Young children have to deal with a variety of social and emotional difficulties, and the social-emotional coping takes place simultaneously in both worlds - the physical and the virtual. The current study examined the correlation between the victims of CB and two manifestations of social difficulty: the sense of loneliness and low social support among young children.

Sense of loneliness and social support among children

The sense of loneliness is a subjective feeling, affected by life experiences, personality variables and situational conditions [42]. It has been described by many researchers [43-45] as an unpleasant, stressful and harmful emotional experience lasting a long period of time and accompanied by negative feelings such as dissatisfaction, sadness and anxiety. Loneliness has emotional and social components [45]. Researchers examined the impact of friendship on the sense of loneliness among children, and their findings indicated that relationships with friends and experiences of pair friendships were found to be connected with the sense of loneliness, regardless of the extent of children's social popularity [46]. Maureen and Tony [45] indicated that in the age range of 9-11, children become aware of the concept of loneliness and they can distinguish between 'loneliness' and 'being alone'. They perceive loneliness as a negative experience involving negative feelings, such as sadness and hopelessness, whereas 'being alone' is sometimes perceived as positive. Studies conducted among children indicated that children who reported experiencing a sense of loneliness in the context of their social ties [47,48] were likely to experience low self-esteem, and in many cases would adopt behaviors that would alienate them from their environment even further. They also found a correlation between situations of social difficulty and a sense of loneliness and the development of a sense of depression among youth [49]. In addition, it was found that one of the variables connected to bullying offenses and the development of depression symptoms among adolescents was the lack of social support [5]. Although the internet enables forming new social ties, a positive correlation was found between the sense of loneliness and the extent of

internet use [20], and the impact of social difficulties is diminished when a child had at least one good friend [50].

Cyber-victims and social difficulties in childhood

One of the main characteristics of CB is the emotional experience and feelings among children who hurt by it, which are manifested by negative feelings about themselves and their surroundings [26], let alone when it comes to young children, who are just beginning to establish their social world and learn how to conduct themselves in larger social settings than they have been exposed to so far. It seems that loneliness, the lack of social support and low self-esteem, which characterize children with social difficulties, are perceived by their classmates as weaknesses and lead to negative reactions towards them [18]. Loneliness may often be connected with other social difficulties like social rejection, and with an inability to create emotional intimacy with friends [44]. It was found that students, who were bystanders to face-to-face bullying victimization and having no social support, ran a higher risk of experiencing emotional problems [51]. Beyond social support from peers and close family members, Mason [9] indicated the importance of social support from school professionals (e.g.: teachers and counselors).

The current study examined characteristics of the sense of loneliness and the lack of social support among young children, in the context of cyberbullying. Specifically the connection between cyber-victimization among young children, their sense of loneliness and their social support or lack, was examined. . It is important to point out that the three variables examined in this study – cyber-victims, loneliness and the lack of social support – are closely interconnected [5].

Gender differences in late childhood with regard to cyberbullying

The findings regarding gender differences in involvement with CB are inconclusive [52]. While some of the studies indicate that the rate of cyber-victims is higher among girls, other studies indicate that there is no difference between boys and girls in the level of involvement [21-23]. Kowalski and Limber [19] claimed that girls were using indirect means of communication and were therefore more vulnerable. Li [49] found that 60% of cyber-victims were girls. Other studies indicate that 38% of the cyber-victims are girls, compared to 26% boys. The explanation offered was that girls were more inclined to expose themselves on the internet, which made them more vulnerable [50]. Gender differences in CB should also be examined among young children populations.

Research aims

The current study sought to examine the phenomenon of CB among young children and draw conclusions that would help develop effective intervention methods to prevent it, and develop ways to care for the children affected by this kind of bullying. To that end, the study tried to examine various aspects and characteristics of the phenomenon. After presenting the characteristics of cyberbullying among children (frequency, types, victims' reactions and the correlation with traditional bullying), the following research hypotheses were examined:

The correlation between the frequency of internet use and becoming cyber-victims among young children was examined. It was

hypothesized that children who spent more time on the internet would be more exposed to CB.

It was hypothesized that there would be a correlation between cyber-victims and social difficulties among young children, such as a high sense of loneliness and low social support, compared to children who were not cyber-victims.

Given the unique nature of CB, it was hypothesized that there would be no difference in the percentages of boys and girls who suffered from it, whereas in face-to-face bullying the rate of boys would be higher among the victims, as indicated by previous studies on the subject conducted among adolescents.

The research

Research method

Participants

Initially the study participants were 250 pupils (54.1% girls) aged 9-11, but actually constitutes of 242 pupils. 8 participants were dropped out in the analyzing phase, since they completed only half of the questionnaire. The participants were recruited from two municipal primary schools in the Jewish sector, located in the central region of Israel in convenience sampling. It included ten classes of pupils from two age groups: 5 classes of the 4th grades (32.2% of the sample) and 5 classes of the 5th grades (67.8% of the sample). The pupils who participated in the study constituted the entire age group in their school. The selection of the schools was done in a way that would ensure a population of similar socio-economic background, a high-middle class, living in an urban area. The background characteristics of the sample are specified in Table 1 below.

Background characteristics		Frequency	Frequency percentage (%)
Gender	Female	131	54.1
Age	9	11	4.5
	10	67	27.7
	11	149	61.6
	12	15	6.2
Grade	4	78	32.2
	5	164	67.8

Table 1: Distribution of the sample's background characteristics.

Research measures

Cyber-bullying questionnaire

The questionnaire contains 31 items divided into sub-categories: (1) General information about internet use: use habits, such as frequency and weekly average of the number of hours spent online; (2) A comparison between traditional bullying and CB. The questionnaire starts with definitions of CB and bullying in general, and proceeds to questions that aim to find out the extent of damage caused by CB (compared to traditional bullying): "When did you experience bullying?" "What sort of bullying have you experienced?" "What was

the frequency of the harassment?" etc.; (3) Information about the participant's personal experience of being exposed to bullying in general or CB. The purpose of these questions is to find out whether the participant was involved in bullying in general or in CB; (4) Information about response patterns of children affected by CB, through questions like: "Did you tell anyone you had been harassed online?" "Whom did you tell?"[12].

Loneliness Scale

The questionnaire examines the sense of loneliness among children. It includes 24 items which focus on social and emotional areas, using a five-point scale, ranging from 'never' (1) to 'always' (5). For example: "I have many friends in class", "I feel alone at school". A high score signifies a high sense of loneliness. The other 8 items are distractors. The reliability in the current research according to Cronbach's alpha is 0.93 [31].

Multidimensional Scale for Social Support

The questionnaire contains 12 items describing the examinee's current perception of the availability of social support from family members, friends, or another close and significant person. The scale is divided into three sub-scales: (a) Support from family members; (b) Support from friends; (c) Support from a close, significant person.

The answers are given on a seven-point Likert scale, ranging from "most inapplicable" (1) to "most applicable" (7). The general score in the entire scale is the sum of the items' scores. The scores in each sub-scale range from 4 to 28. A high score signifies broad social support. The reliability of the questionnaire's general score according to Cronbach's alpha in the current research was 0.92, and the reliability of the scores in the sub-scales was as follows: 0.87 for family support, 0.91 for friends' support and 0.88 for the support of a close person.

Procedure

After receiving the approval of the Open University Ethics Committee and the Ministry of Education's Chief Scientist, we asked for the school principals' permission to conduct the research at their schools. Prior to conducting the research we sent request letters to the parents containing information about the research, and consent forms for them to sign, allowing their children to participate in the study. Furthermore, before delivering the questionnaire to the pupils, we made it clear to them that it was voluntary and anonymous. Delivering the questionnaire took about 50 minutes (the duration of a lesson). Where pupils had difficulty understanding a question it was explained to them.

Findings

The findings were quantitatively analyzed using SPSS 20 software. First, the descriptive findings will be presented with regard to the internet use patterns, as well as the frequency and victim patterns of CB and face-to-face bullying. Following that the findings concerning the correlation between cyber-victims and social difficulties such as loneliness and low social support will be presented.

Internet use patterns among children

In order to examine the internet use patterns we ran a descriptive analysis of the children's reports regarding the frequency of internet

use. Most pupils (71.3%) reported using the internet up to two hours a day, and close to half of them (45.4%) were using the internet up to one hour a day. Following that, we examined the extent of hours of children's internet use and their perception of their ability to use the web, with regard to their background characteristics (gender, grade, school). The comparative results (t test for independent samples) are presented in Table 2.

Variable	Background characteristic		Average	Standard deviation	t	Effect size (Cohen's D)
Internet use	Gender	Female	2.27	2.21	t(212)=1.134	0.142
		Male	2.01	1.30		
	Grade	4 th	1.57	0.91	t(236)=4.373**	0.473
		5 th	2.43	2.11		
School name	A	1.86	0.80	t(137)=2.610**	0.378	
	B	2.55	0.85			
Total sample average			3.45	0.82		
Internet use ability	Gender	Female	3.33	0.70	t(204)=2.407**	0.320
		Male	3.59	0.92		
	Grade	4 th	3.62	0.83	t(237)=2.225*	0.308
		5 th	3.37	0.80		
School name	A	3.46	0.80	t(237)=0.372	0.049	
	B	3.42	0.85			
Total sample average			3.45	0.82		
**p > 1%, *p > 5%						

Table 2: Average of internet use and internet use ability – a comparison according to background characteristics.

Table 2 shows that no gender differences were found in the extent of internet use, but such differences were found in internet use abilities: boys' self-scoring was found to be higher than that of the girls. Internet use in 5th grade was found to be a little higher than in 4th grade. However, the 4th grade pupils ranked their internet use abilities distinctively higher than the 5th graders. It was found that most pupils use the internet to surf on various websites, including downloading movies, games, music and software, 60% for taking part in social networks and only 2% for watching TV or YouTube.

Cyber-victims

In order to examine the frequency of CB, including victims and perpetrators, the frequency of pupils' reports of the sort and frequency of the offense was examined. The extent of pupils' involvement in cyberbullying is detailed in Table 3.

Table 3 indicates that 15.8% of the pupils reported having been cyberbullied. When asked how many types of CB they had been

exposed to, the rate of exposure 18.4%. When asked at what frequency they had been harassed online, it emerged that 21.1% of the pupils had been exposed to CB at some point. Furthermore, it was found that about one third of the pupils knew someone who had been cyberbullied.

Cyberbullying		Frequency	Frequency percentage (%)
Have you ever been cyberbullied?	Yes	38	15.8
Do you know anyone who has been cyberbullied?	Yes	77	31.7
What type of cyberbullying were you exposed to?	Verbal abuse	31	70.5
	via e-mail	6	13.6
	via SMS	15	34.1
	via chat	5	11.4
Several types of abuse	I was never abused online	195	81.6
	One type of abuse ^a	32	72.8
	Two types of abuse ^a	11	25.0
	Three types of abuse ^a	1	2.2
At what frequency were you cyberbullied	Never	191	78.9
	Rarely	32	13.2
	Sometimes	16	6.6
	Many times	3	1.2

^aThe pupils were allowed more than one answer.

Table 3: Exposure to cyber-victimization^a.

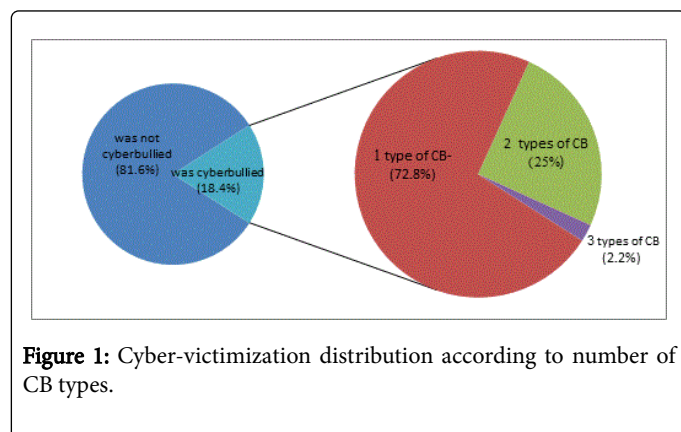


Figure 1: Cyber-victimization distribution according to number of CB types.

Figure 1 shows the distribution of pupils who were cyberbullied according to the number of CB types they experienced. The figure shows that 18.4% of the cyberbullied pupils were divided as follows in terms of the number of CB types: 72.8% of the cyber-victims had been subject to one type of CB. 25.0% of the cyber-victims pupils, had been

subject to two types of CB and the rest-2.2% of the cyber-victims had been subject to three types of CB.

Table 4 presents the cyber-victims answer frequencies to the question to whom they had reported the abuse.

Cyberbullying		Frequency	Frequency percentage (%)
Have you told anyone you had been cyberbullied?	I have never been cyberbullied	197	81.4
	I have been cyberbullied but never told anyone	8	3.3
	Yes, I told someone	37	15.3
Whom did you tell about having been cyberbullied?	A parent or another family member	31	69
	A friend	16	36
	A teacher	2	4

^aThe cyber-victims were allowed more than one answer.

Table 4: Reporting on cyber-victimization^a.

Table 4 indicates that most of the children who were cyberbullied preferred to tell their parents or family members about it over a third told their friends and a minority of the pupils reported to their teachers.

Although the study focused on the victims of CB, also presented here is the frequency of children's self-reports of CB and online harassment: only 9 pupils reported being cyberbullying, perpetrators).

Victims of face-to-face bullying

We compared the frequency of CB to that of face-to-face bullying. 45% of the pupils reported having been bullied face-to-face. 52.7% frequently, and 28.6% were rarely bullied. Most of the pupils (66.9%) reported that they knew someone who had been bullied face-to-face. 18.4% of the participants reported having taken part in bullying others. When asked at what frequency they had taken part in harassment, 20.4% reported having done so (a combination of the findings of rarely, sometimes, and many times). In order to calculate the frequency of the harassment in reference to all the bullied participants, the harassment frequency percentage was divided into the number of harassed participants. This way most of them reported having rarely done it 87%, (17.9% out of 20.4%). The harassment was mostly characterized by more than one type of behavior, the most prevalent being mockery and cursing (53.0%), boxing, kicking or other forms of physical abuse (45.5%).

In order to examine the correlation between CB victims and face-to-face victims, we compared the rates of pupils' exposure to CB with those of their exposure to face-to-face bullying. Table 5 assembles the results of the test of comparing the proportions, which was conducted respectively.

Examining the correlation promoters between the two variables reveals a linear correlation between being cyberbullied and being bullied face-to-face. Upon examining the distribution of the pupils who were bullied face-to-face, Table 5 shows that 27% of them were also

cyberbullied. On the other hand, examining the distribution of the pupils who were cyberbullied indicates that 73% of them were also bullied face-to-face. One may say that those who were bullied face-to-face have a greater chance of being cyberbullied than those who were not.

Were you ever cyberbullied?	Were you ever bullied face-to-face?		Total
	No	Yes	
No	60	40	100
Yes	27	73	100
Sample total	55	45	100
$\chi^2(1, N=235) 13.772 (p < 0.01), r=.242 (p < 0.01)$			

Table 5: Cyber-victimization compared to face-to-face bullying victimization.

The findings we have presented so far refer to the descriptive data regarding cyber-victims and victims of face-to-face bullying. These data were analyzed and used to examine the research hypotheses. These findings are presented below.

To examine hypothesis 1, that children who spend more time on the internet are more exposed to CB than others, the amount of hours spent on the internet by children who were cyberbullied to that of children who were not, was compared. Table 6 presents the results of the t-test conducted for comparing averages of independent samples.

Cyber-victims	N	Average	Standard deviation	T(49)	Effect size of (Cohen's D)
Have never been cyberbullied	194	2.01	1.39		
				1.73 [^]	0.447
Have been cyberbullied	45	2.82	3.11		
[^] p=0.091					

Table 6: The average amount of hours of internet use in relation to cyber-victimization.

Table 6 shows that pupils who were cyberbullied spent more average time online than pupils who were not. Hypothesis 1 was assessed and the extent of the effect is medium (d=0.447).

In order to examine hypothesis 2, regarding the correlation between being cyberbullied and having social difficulties (high sense of loneliness and low degree of social support), tests were conducted to compare averages between independent samples. When the comparison group was dichotomous (i.e., "cyberbullied or not") a comparison was drawn using t-tests for independent samples, and when the comparison group included more than two categories (for

example, in the context of "reporting cyberbullying"), a comparison was drawn using an ANOVA one-way test. Table 7 presents an analysis of comparing independent averages between pupils' social difficulties and their being cyber-victims.

The analysis of table 7 shows that hypothesis 2 has been confirmed, but not completely. No significant differences were found for all kinds of social support when the children were asked if they had ever been cyberbullied. However, the analysis of the differences in reference to the frequency of CB revealed significant differences in social support, between the participants who had never been cyberbullied and those who had. It was found that in general, the social support of the participants who had not been bullied was significantly higher (t(237)=2.293, p < 0.05) than that of cyber-victims. Similarly, examining the differences between cyber-victims and those who were never cyberbullied, according to exposure and frequency of the offense, it was found that the sense of loneliness among cyber-victims was significantly higher (t(66)=2.723, p < 0.01) than that of pupils who had never been cyberbullied.

A correlation was also found between social support and the extent of pupils' reporting of the CB they had been exposed to. The extent of support perceived by pupils who had been cyberbullied but never told anyone was significantly lower than that of the pupils who had never been cyberbullied.

In reference to the pupils who had or had not told anyone about being cyberbullied, differences were found in the extent of family support (F(2,237)=4.371, p < 0.05). A Scheffe post hoc analysis revealed that the level of social support reported by pupils who never told anyone about being cyberbullied was significantly lower than that of the other two groups, namely pupils who had never been cyberbullied and those who had, but had told someone about it.

Similarly, a significant difference was found regarding social support from friends (F(2,237)=5.227, p < 0.01), resulting from the difference between the low social support of pupils who had been cyberbullied and told no one, and that of pupils who had never been cyberbullied. However, it was impossible to confirm the existence of differences between these two groups of pupils and the group of pupils who had been cyberbullied and told someone about it. We found a difference in the extent of support from a close person (F(2,237)=3.699, p < 0.01), resulting from the difference between the low social support of pupils who had been cyberbullied and told no one, and that of pupils who had never been cyberbullied.

However, it was impossible to confirm the existence of differences between these two groups of pupils and the group of pupils who had been cyberbullied and told someone about it. Furthermore, it was found that in the context of sharing CB experiences with others, there were differences in pupils' sense of loneliness (F(2,237)=6.445, p < 0.05). A post hoc analysis revealed that pupils who had been cyberbullied had a higher sense of loneliness than those who had not, including pupils who reported the CB and those who did not.

To examine hypothesis 3, referring to gender differences, we ran a ² test to compare proportions. Table 8 specifies the victims of CB and face-to-face bullying, with reference to gender and the nature of exposure to violence.

Having been cyberbullied		n	Social support from family members		Social support from friends		Social support from a close person		Social support in general		A sense of loneliness	
			M (SD)		M (SD)		M (SD)		M (SD)		M (SD)	
Have you ever been cyberbullied?	No	202	6.27 (1.28)	t(237)=1.040	5.28 (1.82)	t(237)=1.187	6.01 (1.52)	t(237)=0.504	5.85 (1.30)	t(237)=1.086	1.85 (0.68)	t(237)=1.453
	Yes	37	6.03 (1.36)	Cohen d=0.187	4.89 (1.94)	Cohen d=0.213	5.87 (1.43)	Cohen d=0.091	5.60 (1.36)	Cohen d=0.195	2.03 (0.75)	Cohen d=0.261
How often were you cyberbullied?	Never been cyberbullied	190	6.29 (1.26)	t(239)=1.516	5.35 (1.79)	t(239)=2.475	6.03 (1.50)	t(239)=0.956	5.91 (1.27)	t(237)=2.293*	1.83 (0.65)	t(66)=2.723**
	Have been cyberbullied	50	5.97 (1.40)	Cohen d=0.208	4.59 (2.01)	Cohen d=0.452	5.79 (1.51)	Cohen d=0.224	5.44 (1.40)	Cohen d=0.366	2.13 (0.85)	Cohen d=0.496
Have you told anyone about having been cyberbullied?	Never been cyberbullied	196	6.30 (1.25)		5.39 (1.77)		6.08 (1.46)		5.92 (1.25)		1.81 (0.63)	
	Have been cyberbullied but told no one	8	4.94 (2.17)	F(2,237)=4.371*	3.63 (2.31)	F(2,237)=5.27**	4.66 (1.97)	F(2,237)=3.699*	4.41 (1.99)	F(2,237)=5.970*	2.41 (0.89)	F(2,237)=6.445**
	Yes, I have told someone	36	6.21(1.15)	Cohen h=0.036	4.74 (1.91)	Cohen h=0.042	5.91 (1.39)	Cohen h=0.030	5.62 (1.22)	Cohen h=0.048	2.15 (0.87)	Cohen h=0.052

** p < 0.01, *p < 0.05

Table 7: Social difficulties among young children – in relation to cyber-victimization (comparing averages of independent samples).

It was that there would be no gender differences in CB, and that in face-to-face bullying the number of boys would exceed the number of girls. Table 8 shows that, after combining all rates of bullying, the general rate of being bullied is higher among boys than among girls. 64% of the pupils who had never been bullied either way, were girls. Similarly, 64% of those who had only been cyberbullied were girls. 62% of the pupils who had been bullied face-to-face were boys (as hypothesized). However, the pupils who had been bullied in both ways were distributed similarly between girls (53%) and boys (47%). Meaning, relatively more girls were bullied in both fashions. The has therefore been partly confirmed. More girls were affected by cyberbullying, contrary to the hypothesis that there were no gender differences in cyber-victimization, whereas in face-to-face bullying, more boys were affected, as hypothesized.

The research findings show that CB exists in Israel among young children as well, and is quite frequent. It was found that children who had been bullied face-to-face were likely to be cyberbullied as well, and that being a cyber-victim was correlated with a high sense of loneliness and a low level of social support. Furthermore, gender differences were found among children, both among cyber-victims and victims of face-to-face bullying.

Having been bullied	Girls	Boys
Never been bullied	64%	36%
Only cyberbullied	64%	36%
Only face-to-face bullied	38%	62%
Bullied in both manners	53%	47%
Total sample	54%	46%

* $\chi^2(3, N=242)=13.040, p < 0.01, r=0.091 (p > 0.05)$

Table 8: Children' gender distribution in relation to having been bullied.

Discussion

The research findings present an updated initial state of affairs, which may illuminate various aspects of cyberbullying among young children in Israel. The internet currently serves almost everyone everywhere at all ages, and is the focus of many studies. The virtual world seems to greatly reflect the physical one, and therefore it is not surprising to find that bullying has found its way into it, and from

being a schoolyard phenomenon, has turned out to be a shadow that follows the pupil-victims out of school, into the street, into their homes and into their bedrooms, with no actual ways for escape. Home is no longer really a safe place for children. Although there are many studies looking into CB in adolescence, there are only few that examine it during childhood, when it actually starts. The current study is greatly supported by many that examined the nature and uniqueness of CB among youths (e.g., [9,10,19,51]). Examining CB among young children in Israel and recognizing its first manifestations and characteristics may enable researchers and practitioners to develop intervention plans and try to prevent its intensification at later ages. To this end this study has examined the correlation between cyber-victimization and social difficulties in childhood, and also examined gender differences in this context.

The term 'cyberbullying' is identified with intentional repetitive offenses in the online space using digital means [9,12]. It seems to be the modern, technological version of traditional bullying, also known as face-to-face bullying, which is defined as aggressive behavior characterized by the intent to cause harm and damage repeatedly over a long period of time. Since the age of digital users is decreasing [8], the current study has focused on examining an age group which is almost inexistent in research literature – young children – in order to define methods and approaches to deal with the problem in its early stages. More specifically, the study examined internet use characteristics at this age, and whether there was a correlation between the extent of internet use and being cyber-victims. Furthermore, the characteristics of cyberbullying were examined compared to those of traditional bullying, and following previous studies [4,5], the existence of a correlation between cyber-victims and social difficulties manifested by a high sense of loneliness and a low level of social support, was examined. The existence of gender differences in the context of these difficulties was examined as well.

In order to examine the research hypotheses, we first characterized the internet use among children at these ages. The findings show a great variance in the scope of internet use, the main one being surfing different websites (79%), followed by using the internet for school work (70%), and taking part in social networks (60%). The findings of this study present a state of affairs which is similar to that in many countries around the world. Livingstone and associates [8], for instance, found in their study that the main internet use among children and youths (aged 9-16) was surfing social networks, and other studies conducted in various countries (such as the USA, the UK, Serbia, Korea, Turkey and Italy) found that over 60% of the participants reported using the internet on a daily basis [7,19]. In addition, and in accordance with findings of previous studies [15], it was found that the frequency of internet use increased according to age group. The current research has found that the extent of use among 5th-grade pupils was significantly higher than that among 4th-grade pupils.

The first research hypothesis assumed a correlation between the frequency of internet use and being a cyber-victim. It was assumed that children who spent more time online were more likely to be harassed. This was supported by previous studies showing greater internet use among children and youths who were cyber-victims [13,52]. The study findings confirm the hypothesis and it seems that pupils who were cyberbullied spend more average time online than those who were not. Despite this correlation, the findings about differences in internet use between cyber-victims and pupils who were not cyber-victims show only one significant difference, in the context

of chatting with others: 55.6% of the pupils who were harassed online reported chatting with others, compared to only 34% of the other pupils. It seems that for this age group a significant part of CB occurs on chats.

The study examined the frequency of cyber-victimization both directly (having been cyberbullied) and indirectly (knowing someone who has been cyberbullied). It turned out that about one-fifth of the pupils had been cyberbullied at some point, and about a third of the pupils knew someone who had. These data are similar to those of previous studies, such as Mason's study and survey [9] and Black's study [48], which found that most cases of CB involved verbal abuse (70.5%), rather than other types of online abuse, like picture dissemination. In other cases, pupils reported having been harassed in several ways, via text messages and e-mails. These findings are also consistent with the findings of previous studies conducted among adolescents [13]. So it seems that most CB occurrences found among adolescents also occur among young children, except that they may be less equipped to understand and handle them.

The study also found a correlation between being cyberbullied and being bullied face-to-face. Pupils who had been bullied face-to-face had also been cyberbullied in the following rates: 73% of cyber-victims had also been bullied face-to-face and 27% of those who had been bullied face-to-face had also been cyberbullied. The findings show a statistically significant proportion gap. The study conducted by Tarablus, Heiman & Olenik-Shemesh [52] examined similarities and differences between CB and face-to-face bullying among adolescents, and also found a significant positive correlation between both types of bullying, but was limited to youth population. The current study's findings reveal that this significant correlation between both types of bullying exists also among young children. One may assume that the anonymity of the online space allows the bullies to feel safe and diminishes their inhibitions, and the escalation occurs when the verbal abuse carried out through screen and keyboard is transformed into physical violence on the school grounds.

Cyberbullying occurs within a social context and has been found to be connected with different social variables. Still, most of the literature relating to the connection with social difficulties, addressed to traditional bullying and to youth populations [4]. The current study chose to focus on two social difficulties which are characteristic of children at these ages: the sense of loneliness and the lack of social support, both of which may have behavioral, emotional, and sometimes didactic implications. Social difficulties among young children and their long-term impact have been examined in many studies, most of them focusing on loneliness and finding that a sense of loneliness may cause children to view themselves as unworthy. The sense of loneliness and the lack of social support often lead to behaviors which alienate others even more and were found to be connected with the development of depression and despondency among children [43,44,46] as well as with being bullied, and so on in a vicious circle. The second research hypothesis was that there would be a correlation between cyber-victims, a high sense of loneliness and a low level of social support among young children, so that cyber-victims would present a high sense of loneliness and a low level of social support, compared to pupils who were not cyber-victims. The research findings analysis showed that pupils who had been cyberbullied indeed presented low levels of social support and high levels of loneliness, compared to pupils who had never experienced harassment or violence. Social support allows the children an outlet from the offense, whether by providing a sense of belonging and worth

in a different environment than that of the bullies, or by providing a way to deal with the perpetrator rather than repress this, which may have a significant impact on the victims' lives. However, it is important to re-examine these findings among children, especially in reference to social support, because they were significant only when the children were asked about the frequency of the harassment, and were insignificant when they were asked if they had ever been bullied or not.

The study further examined response and reporting patterns of young children regarding CB, compared to face-to-face bullying. It was found that victims of face-to-face bullying were less inclined to share and tell someone about having been bullied than cyber-victims. In most cases the victims told someone about having been bullied. Most victims chose to tell their parents or other family members (69%) and over one-third preferred to tell their friends (36%). Almost no one reported having told a teacher, and about one-sixth of the victims told no one at all about having been bullied. This finding raises the need to strengthen 4th and 5th grade teachers' awareness of CB and help them find ways to deal with it.

Gender differences regarding CB cyber-victims in adolescents have been ambiguous or in-existent in different studies, both in general and in the context of social difficulties [12, 14, 21-23,54]. The current study showed significantly that among children, more girls than boys were cyber-victims, and more boys than girls were victims of face-to-face bullying.

Limitations, recommendations for further research and implications

The current study has shown initial trends of cyberbullying among children, and, as such, it can serve as a basis for shaping further studies which could examine a larger cross-section of population and examine additional variables relevant to the children's population and to CB, for the purpose of creating more effective prevention and intervention programs. However, this study had several limitations. First, it had a small number of participants, too small to apply its conclusions to the entire population of young children. Statistically, some N boxes showed very small figures. We decided not to conduct an alternate analysis, but we did add 'effect size' columns. As to the sampling, we used a convenience sample that may have problems representing minority groups for instance. Therefore its' ability to generalize is slightly limited. The study population was not varied enough, and it is important to examine these findings among young children of more varied populations, for instance, among pupils from the lowest and the highest socio-economic background. It is also possible that in different population sectors in Israel the extent of internet use may be different, and so may be the CB patterns. It is therefore hard to generalize the study findings over groups of young children living in different environments.

The participants' young age poses a certain difficulty in the research. At these ages it is difficult to explain to the children the differences between different types and forms of bullying and other research variables which sometimes appear in the questionnaires. Furthermore, the study did not examine any interaction between different age groups at school, but only examined the phenomenon within the defined age-group. We recommend that future studies involve in one research several age-groups and examine the interactions between them on the subject of CB.

The study examined CB occurring at a young age and its findings present a state of affairs concerning cyber-victims among children,

similar to that which is prevalent in many countries around the world, and has shown that CB occurs in Israel starting with young ages. It also established a significant correlation between cyber-victims and victims of traditional bullying, and between cyber-victims who are young children and their having social difficulties. Knowing and understanding CB and its various aspects, already at its early stages, may help in preventing it early on and stopping it from developing towards adolescence, which is considered to be a vulnerable age [9,28]. It may also enable the creation of appropriate tools to deal with it effectively, while focusing on its unique characteristics. The findings also suggest the need to relate to the social aspect while planning, developing and implementing educational intervention activities for dealing with CB among children. Apparently such programs should include, beyond the contents directly connected to CB, the development of social skills and a sense of social efficacy and empathy. The tender age of children involved in CB suggests the need to involve parents and teachers in these programs. Furthermore, the fact that a higher rate of girls was found among cyber-victims shows the need to consider designating them a unique focus in the coping and intervention programs.

To conclude, the research findings provide a basis for knowing and understanding cyberbullying and its various forms in its early stages. It seems essential to dedicate special attention to locating young pupils who are cyber-victims, providing them with effective means to deal with it, already at this young age.

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