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MATERNAL ATTACHMENT AS A FACTOR OF VICTIMIZATION AND BULLYING OF CHILDREN WITH DISABILITIES[i]

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Abstract:
School bullying is a major diachronic problem of modern society and in recent years it presents considerable intensification, attracting scientific and research attention. The present research studies the victimization due to school bullying of children with disabilities. The aim of the research is to investigate whether the maternal attachment of people with disabilities such as blindness, deafness and motor disability and also of those without disabilities is linked to their victimization or bullying behavior in school, and to highlight the impact of specific demographic characteristics on the possible underlying relationship between maternal attachment and victimization for them. Further, the objectives of the present research include the appraisal of a comparison between individuals with and without disabilities. The research was conducted through a quantitative survey in Greece, to 170 individuals aged between 10 and 21 years of age, with blindness (N=36), deafness (N=38), physical disability (N=50) and without disability (N=50). The results revealed differences between participants with and without disabilities with regard to the type of attachment they have developed with their mothers and to their experiences as victims or offenders of school bullying. The results also demonstrate that there is a correlation between maternal attachment and school bullying behaviors and for certain disability groups mother care and / or mother protection is a predicting factor of these behaviors.

Keywords: bullying, maternal attachment, blindness, deafness, motor disability

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Abstrakt:
Mobbing in der Schule ist ein großes diachrones Problem der modernen Gesellschaft und hat in den letzten Jahren eine erhebliche Zunahme erfahren, was die Aufmerksamkeit von Wissenschaft und Forschung auf sich zieht. Die vorliegende Studie untersucht die Viktimisierung von Kindern mit Behinderungen durch Mobbing in der Schule. Ziel der Forschung ist es, zu untersuchen, ob die mütterliche Bindung von Menschen mit Behinderungen wie Blindheit, Taubheit und motorischen Behinderungen sowie von Menschen ohne Behinderungen mit ihrem Viktimisierungs- oder Mobbingverhalten in der Schule zusammenhängt, und den Einfluss spezifischer demografischer Merkmale aufzuzeigen über die mögliche zugrunde liegende Beziehung zwischen mütterlicher Bindung und Viktimisierung für sie. Zu den Zielen der vorliegenden Forschung gehört auch die Bewertung eines Vergleichs zwischen Menschen mit und ohne Behinderungen. Die Studie wurde im Rahmen einer quantitativen Umfrage in Griechenland an 170 Personen im Alter zwischen 10 und 21 Jahren mit Blindheit (N=36), Taubheit (N=38), körperlicher Behinderung (N=50) und ohne Behinderung durchgeführt (N=50). Die Ergebnisse zeigten Unterschiede zwischen Teilnehmenden mit und ohne Behinderung hinsichtlich der Art der Bindung, die sie zu ihren Müttern entwickelt haben, und ihrer Erfahrungen als Opfer oder Täter von Mobbing in der Schule. Die Ergebnisse zeigen auch, dass es einen Zusammenhang zwischen mütterlicher Bindung und Mobbing-Verhalten in der Schule gibt und für bestimmte Behindertengruppen die Mutterfürsorge und/oder der Mutterschutz ein Vorhersagefaktor für dieses Verhalten sind.

Schlüsselwörter: Mobbing, mütterliche Bindung, Blindheit, Taubheit, motorische Behinderung

1. Introduction

In the era of the last decades, the phenomenon of bullying among school children has received considerable attention by psychology specialists and other researchers studying human behavior (Menesini, Modena, and Tani, 2009; O'Brennan, Bradshaw, and Sawyer, 2009; Olweus, 1993). The definition of bullying mentions that it is an intentional and often repetitive behavior aiming to harm and humiliate physically and socially a victim. Bullying has the form of systematic aggression and violence with demonstration of power, and has a significant negative effect on the victim (Olweus, 1993).

Bulling rates increase internationally (Espelage & Swearer, 2003; Smith & Brain, 2000), something that is also the case for Greece. Research regarding bulling incidents recorded in Greece, demonstrate an increasing frequency, similar to other European countries (Prapa, 2012; Sapouna, 2008). The percentage of bullies among students attending Greek public schools is 8.5%, victims are 7.4%, school children acting both as perpetrators and victims are 0.5%, while pupils with no interference account for 83.5%.

School bullying has been associated with attachment between children and their mother or/and father by a number of studies (Eliot & Cornell, 2009; Walden & Beran,

2010). The term attachment refers to "*the strong emotional bond that is being developed between the infant and his mother and father and / or other people in the immediate environment during the first year of life. This close relationship is characterized by mutual affection and the great desire of individuals to be together*" (Bowlby, 1958).

Bowlby has developed this theory in a trilogy under the title "Attachment and Loss" (Bowlby, 1969/1982, 1973, 1980) described that infants are born with a variety of attachment behaviors that seek to maintain to their later life as an intimacy to the faces mainly of the mother or the father.

The connection between the type of relationships developed between the parents and the child has been examined by previous research is a number of ways (Kerr and Stattin, 2000; Rubin, and Burgess, 2002; Steinberg et al., 1991). Attention has been given to the quality of these relationships, since the parental style is presented to have a significant effect. For example, authoritarian style, or overprotectiveness of the mother (Georgiou, 2008a; Georgiou, 2008b) can predict future child behavior.

This attachment has often been presented as a predictor of school bullying and victimization, showing also a significant correlation between parental attachment and school bullying and victimization. Research has, however, been conducted in relation to people without disabilities, while investigating the issue in people with disabilities, in particular children aged 10-21 years, is lacking. Therefore, the present research is attempting to highlight this almost unexamined area deploying a mixed sample of 170 children with and without disabilities in order to thoroughly investigate the relationship between attachment to the mother and possible victimization or bullying.

The thinking behind this approach is that disabled people is a considerable percentage of the total population, yet, research investigating this percentage is scarce. Disability in the present research is considered in terms of visual difficulties or blindness, acoustic problems and motor disabilities.

Visual disabilities include blindness and limited visual acuity. According to the tenth edition of the ICD (International Classification of Diseases) blind is considered every person with visual acuity less than 3/60 Additionally, a person with low vision is considered any person with visual acuity less than 6/18 but equal to or better than 3/60, while their field of vision is limited to 20 degrees centrally or less at the best eye with the best possible correction (WHO, 2012; Cattaneo & Vecchi, 2011).

Deafness is defined as "*a hearing impairment that is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification*" (IDEA, 2021).

According to the IDEA (Individuals with Disabilities Education Act), "*motor / orthopedic disability is any physical disability that adversely affects the educational process*." Definitions include amputations, cerebral palsy, polio, bone tuberculosis and a lack of a member of the body. In this respect, "*Disability is defined as any change in movement, either due to loss or restriction following injury, which may affect certain areas of one's daily life, such as self-care, learning, occupation, entertainment, social co-parenting and independence*" (Wilson-Jones et al., 2007).

2. Research question and objectives

Research outcomes have demonstrated that there is a relationship between parent-child attachment and social behavior of children, with regard to their engagement in bullying or a tendency to become victims of bullying behaviors (Eliot & Cornell, 2009; Walden & Beran, 2010). Most of the available literature has references to the link between insecure parental attachment and quality of social competence or relationships with other children (Schneider, Atkinson, & Tardiff, 2001). There is scarcity in the research conducted so far regarding the relationship between parent-child attachment and victimization or interference in bullying incidents for children with disabilities.

Therefore, the research question arising is whether there is a relationship between the maternal attachment of people with disabilities and their victimization. Specifically, the main purpose of this research is to investigate whether the maternal attachment of people with disabilities (blindness, deafness, motor disability) makes them bullies or victims of school bullying and to highlight the impact of specific demographic characteristics on the possible underlying relationship between maternal attachment and victimization for people with disabilities. Further, the objectives of the present research include the appraisal of a comparison between individuals with and without disabilities.

The research questions ensuing the above objectives are expressed as follows:

- Do pupils with disabilities (blindness, deafness, motor disability) act as school bullies and if so, do they express this bullying behavior more than non-disabled pupils?
- Are pupils with disabilities subject to school bullying and if so, do they receive more bullying attacks than pupils without disabilities?
- Are there statistically significant differences between the survey population groups in terms of whether they become bullies or victims of school bullying?
- Are there statistically significant differences between the sample groups in the survey regarding maternal attachment and more specifically in the care and protection by their mother?
- Are there statistically significant differences in the school bullying of people with and without disabilities and in their overall demographic characteristics?
- Are there statistically significant differences in the maternal attachment of people with and without disabilities, and more specifically in the care and protection of their mother in terms of their overall demographic characteristics?
- Is there a statistically significant correlation between the peer scale of the Peer Experience Questionnaire (PEQ) and the Parental Bonding Instrument (PBI) for both disabled and non-disabled people?
- What parameters of the Parental Bonding Instrument (PBI) predict bullying and victimization in the overall sample, both disabled and non-disabled, both as separate groups and as a single group?

3. Literature review

Due to the importance of school bullying phenomenon, a great deal of attention has been paid by the scientific community. There are numerous studies investigating parental attachment, in relation to school bullying, aggressive behavior and victimization. However, relevant research performed for disabled young people has not been detected. The literature has references to research made in Greece and internationally.

In the research work of Kokkinos (2013) mentioned that attachment type is associated with bullying and victimization, arguing that children with a strong bond with their mothers report less involvement in bullying incidents, while children with insecure bond come from families, where they experienced shame and rejection. In older research, Finnegan et al., 1998, have reported that children with insecure attachment are more prone to victimization.

Relevant finding is reported by Mitsopoulou & Giovazolias (2013), who have found that children who perceive reduced care and affection by their mothers are in risk of expressing bullying behaviors. They also reported that overprotection by parents and lack of children autonomy increases victimization risk. Similarly, Fosse & Holen (2002), Georgiou (2008a) and Ladd (1992), also, associated victimization with overprotection. Victimization and bullying are also predicted by restriction and not autonomous children as reported by Nation et al., (2008), as a result of a study in Italian teenagers.

Mother care is also negatively related with aggressive behaviors and bullying (Bowers et al., 1994; Georgiou, 2008a; Perren & Hornung, 2005; Stevens et al., 2002). Not far from these findings, Nikiforou, Georgiou & Stavrinides (2003), in research made in Cyprus, found that bad quality attachment with parents is a factor predicting victimization and bullying.

In Iran Mohebbi, Mirnasab & Wiener (2016), based on research on students aged between 15 and 19 years of age reported that offenders of school bullying had poorer parental protection than victims and uninvolved students. At the same direction Baldry & Farrington (2000) made research in Italy with 11–14-year-old children and concluded that poor care and increased protection predict bullying.

Regarding bullying against disabled children, Andreou, Didaskalou & Vlachou (2013) have mentioned that Greek disabled students who attend special classes, exhibit increased frequency of bullying and victimization. Research by Didaskalou, Andreou & Vlachou (2009) has also come to this conclusion, reporting that students of the last classed of primary school attending introductory integration classes are often victims and bullies. Rose et al., (2011) found that students with disabilities have a higher risk of victimization and bullying than people without disabilities, which is also reported by Mc Laughlin et al. (2010). Pinquart & Pfeiffer (2011) reported increased victimization to students with visual disabilities, which is also mentioned by Dane-Staples, et al., (2013), who argued that students with visual difficulties are often offenders and victims.

Speaking about parental attachment for disabled children, research has shown that mothers and fathers of children with disabilities develop with their children insecure

types of attachment compared to persons without disabilities (Hoffman et al., 2009; Howe, 2006; Lopez, 2014). In this respect, with reference to mothers of children with optical difficulties, or blind, Ardito et al., (2004), reported that they are overprotective and Behl et al. (1996) mentioned that they interfere to a great extent in the child's life. Comparable results are mentioned by Pipp-Siegal & Bringen (1998) for mothers of children with acoustic problems. Research has shown that deaf children with hearing parents were more likely to develop unsafe attachment types with their parents (Maher, 1989; Hadadian, 1995; Thomson, Kennedy, & Kuebli, 2011).

With regard to motor disabilities, they have found to be related with close attachment with mothers, by some researchers (Clements & Barnett, 2002; Wasserman et al., 1985; Sarris, 2020), but as a predictive factor of poor-quality relationships and parental attachment by others (Capuzzi, 1989; Cox & Lambrenos, 1992).

4. Material and Method

Research questions are approached through a quantitative survey, using a structured questionnaire. In order to assure the correctness of questionnaire completion, participants were given appropriate guidelines by the researcher. In addition, they were informed for the purposes and the objectives of the research, as well as those answers are confidential, their participation is volunteering, and that they can quit the survey at any stage.

4.1 Procedure

A representative sample was selected to ensure unbiased results, by simple random sampling from individuals with some kind of disability (visual, acoustic and physically disabled), as well as individuals without disabilities. Questionnaires were given manually or were mailed to the 3 groups of people with disabilities (blindness, deafness and motor disability) and the control group (without disabilities). The questionnaires were collected in 2021 and were distributed in many regions of Greece and most of its districts. A total of 240 questionnaires were distributed to the survey sample groups and 202 were returned. However, 32 questionnaires were excluded from research, since they were incompletely/ incorrectly completed. This resulted in a sample of 170 questionnaires (70,8% response rate).

4.2 Materials

The survey questionnaire contains three parts. The first part collects demographic information using close ended questions (gender, age, type of disability of the respondents if any -blindness, deafness, motor disability, no disability-, place of origin, existence of siblings, total number of persons residing in the family home, the educational level of the mother and father, the occupation of the mother and father and the marital status of the mother and father). The second part (questions 13 to 16) investigate whether the researcher has become a bully or a victim of school violence, and how he or she

perceives the term violence. The fourth part (questions 18-21) relate to the relationship of the respondent with his/her parents. The fifth part is the (Peer Experiences Questionnaire –PEQ) by Vernberg, Jacobs & Hershberger (1999), translated and adjusted to Greek by Giovazolias, Kourkouras & Mitsopoulou (2010). This instrument was designed to detect victimization experiences and bullying behaviors toward others. At the same time, it has the potential to explore attitudes and perceptions of aggression. The questionnaire includes three sub-scales: The first (self-victimization) explores children's exposure to bullying behaviors (9 questions), the second (victimization of the other) investigates bullying behaviors towards other children (9 questions) and the third (attitudes-perceptions of aggression) explores attitudes and perceptions about aggressive behaviors (13 questions). Answers are given in a five-point Likert scale (1 = Never, 2 = Once or twice, 3 = Few times, 4 = About once a week, 5 = Few times a week). Reliability of the scale is at a good level (Cronbach alpha is ,82 for self-victimization sub-scale, ,85 for victimization of the other sub-scale and ,86 for the total scale.

The last part of the questionnaire consists of the Parental Bonding Instrument (PBI). PBI was developed by Parker, Tupling & Brown (1979), as a constant measure of the emotional bond between parent and child. The PBI was adapted to the Greek language using the translation-re-translation method by a professional and was tested on 15 individuals, with no problem in understanding or further needs. the questionnaire questions. The scale has good internal validity, Cronbach's alpha for PBI was estimated to ,76. PBI consists of 25 questions answered in a four-point scale (very often, quite often, rarely, almost never), where participants try to remember their entire childhood and evaluate their father and mother behavior separately, for two types of measurement: care and protection.

The estimated Cronbach's alpha per scale and disability group varies from ,748 to ,971, the coefficient values per scale and disability group are presented in the appendix, Table 1.

4.3 Participants

The study sample (N=170, 77 male and 93 female) is composed by three experimental groups of individuals with disabilities, namely 36 persons with blindness (21.2%), 38 persons with deafness (22.4%) and 50 persons with motor disability (29.4%). The control group consists of 46 persons without any disability (27.1%).

The age of the participants ranges from 10 to 21 years, (groups 10-12 years, 13-15, 16-18 and 19-21) with the largest group being the young adolescents 19-21 accounting for the 36,5% of the sample. The distribution of the age, by disability type is presented in Table 1.

With regard to the residence type, 31,4% of the sample are living in the countryside, while 68,6% are living in cities/towns.

Table 1: Distribution (frequencies and percentages) of age by disability group

Disability	Age									
	10-12		13-15		16-18		19-21		Total	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Blind	14	38,9	6	16,7	6	16,7	10	27,8	36	21,2
Deaf	10	26,3	3	7,9	15	39,5	10	26,3	38	22,4
Motor disability	12	24,0	7	14,0	5	10,0	26	52,0	50	29,4
Control (no-disability)	3	6,5	11	23,9	16	34,8	16	34,8	46	27,1
Total	39	22,9	27	15,9	42	24,7	62	36,5	170	100

The educational level of the participants' mother indicates that almost four out of ten mothers have higher education (4,7% college and 34,1% university), 14,7% primary education, 11,8% secondary, 1,8% did not go to school and 1,8% did not reply. The respective distribution of father educational level shows that it is almost at the same levels: 4,1% college and 34,3% university, 18,9% primary education, 9,5% secondary, 2,4% did not go to school and 4,1% did not reply.

The distribution as per the existence (or not) of siblings is presented in Table 2, showing that most of the sample individuals have brothers/sisters.

Table 2: Distribution (frequencies and percentages) of siblings' existence by disability group

Disability	Siblings					
	Yes		No		Total	
	f	%	*f*	%	*f*	%
Blind	26	72,2	10	27,8	36	21,3
Deaf	28	75,7	9	24,3	37	21,9
Motor disability	35	70,0	15	30,0	50	29,6
Control (no-disability)	44	95,7	2	4,3	46	27,2
Total	133	78,7	36	21,3	169	100

Similarly, the distribution of the number of family members living in the same house is presented in Table 3, showing that the majority of the sample lives in a family with three or four members.

Table 3: Distribution (frequencies and percentages) of family members by disability group

Disability	Age											
	3		4		5		6		7+		Total	
	f	%	f	%	f	%	f	%	f	%		
Blind	16	45,7	12	34,3	5	14,3	0	0,0	2	5,7	35	21,5
Deaf	14	36,8	11	28,9	11	28,9	1	2,6	1	2,6	38	23,3
Motor disability	24	53,3	14	31,1	4	8,9	2	4,4	1	2,2	45	27,6
Control (no-disability)	7	15,6	24	53,3	7	15,6	7	15,6	0	0,0	45	27,6
Total	61	37,4	61	37,4	27	16,6	10	6,1	4	2,5	163	100

Referring to the occupation of the mother, 31 (18,2%) are employees of the public sector, 39 (22,9%) are employees of the private sector, 2 (1,2%) are bank employees, 1 is working for the army (0,6%), 8 have their own businesses (4,7%), 25 (14,7%) are retired, 53 (31,2%)

are unemployed and 2 (1,2%) receive a disability allowance. As far as the marital status of the mother is concerned, 148 of them (87,6%) are married, 12 are divorced (7,1%), 2 are separated (1,2%) 2 are re-married (1,2%) and 5 (3,0%) are not in life.

5. Results

The results of the study present the answers to the research questions. A number of tests have been conducted, according to the type of research question and the normality of the distributions (parametric or non-parametric tests, accordingly). For all statistical tests the significance level is set to 95% (a=,05).

5.1 Results by type of disability

In order to investigate whether the existence and the type of disability are correlated with bullying behavior of the participants a χ^2 (chi square) test was conducted. The test results revealed that bullying practices differ significantly according to disability type $\chi^2(3) =8,482$, $n=170$, $p=,039$). In Table 4, it can be observed that less participants with motor disability than expected have expressed bullying behavior, while, more participants than expected with blindness or deafness have expressed bullying behavior.

Table 4: Bullying by disability group cross-tabulation

Disability	Have ever expressed bullying at school?				Total	
	Yes		No			
	Count	Expected Count	Count	Expected Count	Count	Expected Count
Control (no-disability)	11	10,8	35	35,2	46	46
Blind	12	8,5	24	27,5	36	36
Deaf	12	8,9	26	29,1	38	38
Motor disability	5	11,8	45	38,2	50	50
Total	40	40	130	130	170	170

Further, according to the type of disability, a Kruskal Wallis Test was conducted in order to determine if there are significant differences among disability groups for the hours per day that the mother devotes to the child. The results showed that there are significant differences ($\chi^2(3)= 1,841$, $p<,001$), which are shown in Table 5, with mothers of the control group demonstrating significantly lower mean ranks. In the same table it can be observed that there are significant differences among disability groups for the answers to the question "My mother seemed emotionally indifferent to me" ($\chi^2(3)=9,022$, $p=,029$), with the control group showing higher ranks and the blind group lower.

Table 5: Kruskal Wallis mean rank per disability type, for maternal relationship questions

Questions	No disability	Blind	Deaf	Motor disability	$\chi 2$
	Mean rank	Mean rank	Mean rank	Mean rank	df=3
18. How many hours a day does your mother devote to you (for play, for walking, for reading, etc.)?	54,72	93,41	91,05	88,01	21,841***
42. My mother seemed emotionally indifferent to me.	97,17	72,79	83,88	83,69	9,022*
Notes: Kruskal Wallis Test, Grouping Variable: Disability type, * p<,05, **p<,01, *** p<,001					

All the questions related to bullying (either as a victim or a bully) that showed significant differences among disability groups are presented in Table 6. For questions 21, 22, 24, 25, 26, 28 and 29 referring to victimization of the respondent, the group with blind participants demonstrate the highest ranks. Similarly, the same group has the highest ranks for questions 30, 35, 37 and 38, that represent bullying behaviors by the participants. For questions 23 and 27 which express deliberate ignorance to the victim, the group with motor disability has the highest ranks (Table 6).

Table 6: Kruskal Wallis mean rank per disability type, for bullying questions

Questions	No disability	Blind	Deaf	Motor disability	χ^2
	Mean rank	Mean rank	Mean rank	Mean rank	df=3
21. One student teased me very badly.	59,22	99,54	94,64	92,62	19,639***
22. One student said she would hit me or hurt me.	66,79	100,85	85,97	91,3	12,433**
23. A student deliberately ignored me to hurt my feelings.	59,62	94,89	91,82	95,54	17,859***
24. One student lied to me not to like the other students.	69,64	97,5	91,89	86,59	8,158*
25. A student beat, kicked or pushed me in a malicious manner.	64,13	108,99	85,29	88,41	19,646***
26. A student grabbed me, held me or touched me in a way I didn't like.	68,07	109,89	83,97	85,14	16,091**
27. Some students just let me out of things because of bad intentions.	69,68	94,51	82,42	95,9	8,999*
28. A student chased me as if he really wanted to hurt me.	70,22	100,97	86,78	87,45	9,926*
29. Some students rallied against me and treated me badly.	64,94	98,25	85,03	93,49	13,848**

30. I teased or fooled a student in a very bad way.	83,27	103,88	97,25	65,39	22,327***
35. I grabbed, held, or touched another student in a way he/she did not like	79,67	103,53	93,37	71,9	17,433**
37. I chased a student trying to hurt him / her.	81,46	94,49	91,91	77,88	11,211*
38. Some students and I got together and treated badly other students.	80,89	102,39	92,88	71,97	20,526***
Notes: Kruskal Wallis Test, Grouping Variable: Disability type, * p<,05, **p<,01, *** p<,001					

5.2 PBI Results

PBI consists of two scales, care and protection, which lead to 4 different types of attachment depending on the high or low rating. High or low care-protection is determined by some cut-off scores that define each scale separately. In this report we are focused on the care and protection by mothers, which is considered high if the final sum is equal to or greater than 27,0, while protection is set at 13,5 (the corresponding scores for fathers, which is beyond the scope of the present work are 24,0 and 12,5).

According to the results (Table 7), maternal care is higher in people without disabilities, for whom the mean of this sub-scale is 27,59 (*SD*=5,30), followed by people with a motor disability with a mean of 27,16 (*SD*=8,59), followed by deaf people with a mean of 26,92 (*SD*=6,03) and finally, people with blindness with an average of 26,46 (*SD*= 8,04).

Maternal protection is higher in people with motor disabilities, for whom the mean of this subscale is 14,86 (*SD*=9,71), followed by the ones with blindness with a mean of 14,20 (*SD*= 10,02), then deaf people with a mean of 13,13 (*SD*=7,66) and finally people without disabilities with a mean of 12,43 (*SD*=6,13).

Summing up, it has resulted that participants without disabilities receive high care (*M*=27,59> 27) and low protection (*M*=12,43 <13,5) by their mother. Individuals, with blindness, receive low care from their mother (*M*=26,46 <27) and high protection (*M*=14, 20> 13,5). People with deafness receive low care by their mother (*M*=26,92 <27) as well as low protection (*M*=13,13 <13,5). Finally, people with motor disabilities are cared for by their mother (M=27.16> 27) and also have high protection (M=14,86> 13,5).

Table 7: Mother care and Mother Protection descriptive by disability type

Disability type	**Mother care**		**Mother protection**	
	M	**SD**	**M**	**SD**
Blind	26,46	8,04	14,2	10,02
Deaf	26,92	6,03	13,13	7,66
Motor disability	27,16	8,59	14,86	9,71
Control (no-disability)	27,59	5,3	12,43	6,13

For the two subscales of the Peer Experiences Questionnaire (PEQ):

The highest mean in the sub-scale 'self-victimization of school bullying' is in blind people (*M*= 22,31, *SD*= 9,70), followed by people with a motor disability (*M*=20,60, *SD*=9,68), followed by deaf people (*M*=19,50, *SD*=8,64) and finally people without disability (*M*=14,75 *SD*=5,12).

The highest average in the sub-scale 'others victimization - school bullying' is in the blind group (*M*= 14,06, *SD*= 6,34), followed by those with deafness (*M*=13,37, *SD*=8,53), followed by people without disability (*M*=11,50, *SD*=4,29) and finally, people with a motor disability (*M*=10,80, *SD*=4,24) (Table 8).

Table 8: Mother care and Mother Protection descriptives by disability type

Disability type	**Victim**		**Bully**	
	M	**SD**	**M**	**SD**
Blind	22,31	9,7	14,06	6,34
Deaf	19,5	8,64	13,37	6,53
Motor disability	20,6	9,68	10,8	4,24
Control (no-disability)	14,75	5,12	11,5	4,29

5.2.1 Effects of personal characteristics on PEQ and PBI scores

One way ANOVA was conducted in order to investigate if personal characteristics of the control group have an effect on PBI scores referring to mother care and protection. The results revealed that mother education has a significant effect to mother care score (*F*=3,569, *p*=,012). The means show that children of high school graduate mothers demonstrate a lower average score (*M*=10,38), followed by children with mothers who are university graduates (*M*=18,62) than the ones whose mothers have graduated from primary school (*M*=29,70) or Senior High School (*M*=29,21) (Table 2 of the appendix).

ANOVA analysis for the group without disabilities regarding PEQ scores revealed that gender has a significant effect on bullying behavior (*F*=6,855, *p*=,021), with boys having a significantly higher score (*M*=29.06) than girls (*M*=19.93). Also, mother education significantly differentiates victimization score (*F*=2,042, *p*=,046), with participants with mothers having a college degree demonstrating the lowest bullying score (*M*=7,50), participants with mothers who are primary school graduates (*M*=14,40), then senior high school (*M*=17,38), then university (*M*=26.40) and the highest PEQ bullying scores by participants whose mothers are high school graduates (*M*=34.88) (Table 3 in the appendix).

Regarding PBI for the participants with blindness, the existence of siblings has a marginally significant effect on mother care score (*F*=2,721, *p*=,048), with children with siblings having a higher mother care (*M*=20,16) than the ones without (*M*=12,60) (Table 4 in the appendix). The analysis for PEQ of participants with blindness, as far as mother is concerned, revealed that the existence of siblings also has a significant effect on mother care score (*F*=10,202, *p*=,033), with blind participants with brothers or sisters being more (*M*=19,13) bullies than the ones without (*M*=18,61). Additionally, mother profession has a significant effect on bullying behavior of participants with blindness score (*F*=,892, *p*=,010), with those with mothers working as a private employee (*M*=27,42) having the

highest score and the ones who have unemployed mothers having the lowest (*M*=6,50) score (Table 5 of the appendix).

Similar analysis for the deaf group showed that mother education is the only significant characteristic for PBI scores about mother care and protection (*F*=3,935, *p*=,005). Participants with University graduate mothers have the highest Mother care value (*M*=31,50), while the ones with mothers without education score least (*M*=20,00) (table 6 in the appendix).

PEQ scores for the same group of deaf participants show that the number of people living in the same house is a factor that has a significant effect on victimization (*F*= 3,425, p=,019), with participants with 6 family members demonstrating the highest score (*M*=45,00) and with >=7 members showing the lowest (*M*=6,50). Mother profession has a significant effect (*F*=1,283, *p*=,010) on the bullying behavior of deaf participants, with those who have unemployed mothers having the lowest (*M*=6,50), while the ones with mothers being public employees (*M*=27,42), receiving a disability allowance (*M*=26,50) or being private employee (*M*=24,17) have the highest (Table 7 in the appendix).

The analysis for the group with motor disabilities showed place of residence has significant impact on mother protection (F=,073, *p*=,021) with the participants living in urban areas having more maternal protection (*M*=26,26) than the ones in rural (*M*=20,10). In addition, mother educational level significantly impacts mother protection (*F*= 3,363, *p*=,008), with the mothers who are college graduates (*M*=5,66) and the ones that have no education (*M*=7,00) demonstrating the least protection for the motor disabled, while primary school (*M*=12,14) and high school graduates (*M*=21,28) demonstrating the highest (Table 8 in the appendix).

The corresponding PEQ scores for participants with motor disabilities show that their age is a significant factor both for their role as victims (*F*=2,323, *p*=,031) and as bullies (*F*=1,580, *p*=,032). Younger participants have the highest (*M*=36,08) score on the victim scale and the oldest have the highest score in the bully scale (*M*=29,83), showing that younger children are often the victims and older are the ones acting with violence (Table 9 in the appendix).

5.3.2 Comparison of PBI (maternal) and PEQ scales as per the personal characteristics of the participants

The performed Kruskal Wallis test examining if there are significant differences among disability groups for maternal care, maternal protection, victim and bully scales, revealed significant differences only for the last two. As far as victimization is concerned (χ^2(3)=17,177, *p*=,001), blind participants had the highest score among the four groups (mean rank=102,29) and participants without disability scored least (mean rank = 59,81). For bullying the team with the highest score is also the one with blindness (mean rank = 105,26), followed by the one with deafness (mean rank = 9317), and the least score is by the motor disabled (mean rank = 66,18) (Table 9).

Table 9: Kruskal Wallis Test results for differences in scales scores among disability groups

Scale	Mean Rank				χ^2	*p*
	No Disability	Blind	Deaf	Motor		
Mother care	82,70	82,13	79,41	88,37	0,822	,844
Mother protection	74,46	82,83	82,05	89,5	2,278	,517
Victim	59,81	102,29	89,21	89,84	17,177	,001
Bully	82,43	105,26	93,17	66,18	15,572	,001
Note: a. Kruskal Wallis Test, *df*=3						
b. Grouping Variable: Disability group						

As far as the gender of the respondent is concerned, the Mann – Whitney Test among the 4 subscales according to the gender did not yield any statistically significant differences. It can therefore be concluded that mother's care, mother's protection, how often individuals become a bully and how often they become a victim are not affected by gender (Table 10).

Table 10: Mann-Whitney U Test results for differences in scales scores between males and females

Scale	Mean Rank		Mann-Whitney U	Wilcoxon W	Z	p
	boy	girl				
Mother care	81,73	85,03	3290,5	6293,5	-,441	,659
Mother protection	82,32	82,65	3308	6009	-,045	,964
Victim	91,53	78,7	2962	7240	-1,705	,088
Bully	89,99	80,83	3158	7436	-1,252	,211
Note: a. Mann-Whitney U Test						
b. Grouping Variable: gender						

The Kruskal Wallis Test (Table 11) among the 4 subscales and the age of the respondents did not yield statistically significant effects on maternal care, maternal care, and how often a respondent became a victim of school violence, indicating that for these sub-scales the age factor has no significant effect.

However, the Kruskal Wallis Test (Table 11) among the 4 subscales and the age of the respondents, yielded a statistically significant effect (χ^2 (3)=20,967, p=,000) of age on how often one becomes a victim of school bullying. From Table 11 it can be observed that the most frequent victims of school violence are those aged 10-12 (mean rank = 115,17), followed by those aged 13-15 (mean rank = 80,42), followed by those aged 16-18. (mean rank = 77,30) and finally come the 19-21 age group (mean rank = 71,68). This means that the younger a person is, the more often he or she becomes a victim of school bullying.

A far as the place of residence is concerned the Mann - Whitney Test (Table 12) for the 4 subscales did not yield statistically significant differences between participants living in the countryside and ones living in urban areas for maternal care and how often the respondent becomes. a bully at school.

Table 11: Kruskal Wallis Test results for differences in scales scores as per age groups

Scale	Mean Rank				χ^2	p
	10-12	13-15	16-18	19-21		
Mother care	91,65	80,46	81,17	81,47	1,383	,710
Mother protection	65,03	86,63	87,65	88,39	6,738	,081
Victim	115,17	80,42	77,3	71,68	20,967	,000
Bully	73,62	82,3	91,96	88,44	3,513	,319
Note: a. Kruskal Wallis Test, *df*=3						
b. Grouping Variable: age						

On the other hand, the Mann – Whitney Test (Table 12) revealed a significant effect of the respondents' place of residence on mother protection (χ^2(3)=2284,500, *p*=,041) with the most protected by their mother being those who came from the village (mean rank = 93,.21) and less the ones living in the city (mean rank = 76.90). Additionally, the place of residence showed a significant effect (χ^2(3)=10,014, *p*= ,002) on the frequency respondents are victims of school bullying with higher scores from those who come from the city (mean rank = 91,84) and lower from those who come from the village (mean rank = 66,18).

Table 12: Mann-Whitney U Test results for differences in scales scores between village and town/city residents

Scale	Mean Rank		Mann-Whitney U	Wilcoxon W	Z	p
	Village	Town/city				
Mother care	78,86	84,96	2748,5	4179,5	-,768	,443
Mother protection	93,21	76,9	2284,5	8612,5	-2,048	,041
Victim	66,18	91,84	2049	3375	-3,164	,002
Bully	93,48	80,36	2571,5	9241,5	-1,678	,093
Note: a. Mann-Whitney U Test						
b. Grouping Variable: residence						

The Mann – Whitney Test (Table 13) for the 4 subscales as per the existence or not of siblings did not yield statistically significant results for maternal care, maternal protection, and how often one becomes a bully of school violence. The scale affected by the existence of siblings is the frequency that one becomes a victim of school violence (χ^2(3)=1540,500, p=,001). The results show that the most frequent victims of school bullying are those with siblings (mean rank = 10186,50), while those without siblings (mean rank = 6841,50) have lower score.

Table 13: Mann-Whitney U Test results for differences in scales scores between participants with and without siblings

Scale	Mean Rank		Mann-Whitney U	Wilcoxon W	Z	p
	siblings (yes)	siblings (no)				
Mother care	84,82	76,26	2039	2669	-0,943	0,346
Mother protection	80,22	88,5	2012,5	10268,5	-0,920	0,357
Victim	77,76	106,71	1540,5	10186,5	-3,187	0,001
Bully	83,76	87,33	2228,5	11139,5	-0,399	0,690
Note: a. Mann-Whitney U Test						
b. Grouping Variable: existence of siblings						

Mother profession did not reveal significant differentiations for any of the four studied scales, so does mother profession and marital status (p>0,05 in all cases).

5.3.3 Correlation among scales

A spearman's rho nonparametric test was conducted in order to investigate if there is significant correlation between pairs of scales (mother care, mother protection, victim and bully), for each disability group and finally, for the total sample.

For the group without disabilities (Table 14), there is a statistically significant moderate negative correlation (r_s=-,494, p=,001) between maternal care and maternal protection, which means that the greater the maternal care, the less, but moderately protective is the mother.

There is a statistically significant small negative correlation (r_s=-0,331, p=,032) between maternal care and how often the respondent is a victim of school bullying, which means that as maternal care grows, children tend to be less, to a small extent, bullying victims.

Additionally, there is a statistically significant moderate negative correlation (r_s=-,421, p=,007) between maternal protection and how often the respondent is a victim of school bullying, which means that as maternal protection grows, children tend to be less, to a small extent, bullying victims.

Finally, there is a statistically significant moderate positive correlation (r_s=,541, p=,000) between how often one of the respondents is a school victim and how often he or she practices bullying, which means that the more often a student suffers from bullying as a victim, the more he/she is engaged in school bullying, as a bully.

Table 14: Spearman's rho results for correlation among the scales for the group without disabilities

	Spearman's rho			
	Mother care	**Mother protection**	**Victim**	**Bully**
Mother care	1			
Mother protection	-,494**	1		
Victim	-,331*	,421**	1	
Bully	-,268	,103	,541***	1
* p<,05, **p<,01, *** p<,001				

Table 15: Spearman's rho results for correlation among the scales for the blind group

	Spearman's rho			
	Mother care	**Mother protection**	**Victim**	**Bully**
Mother care	1			
Mother protection	-,505**	1		
Victim	-0,168	-0,039	1	
Bully	-0,16	0,323	0,289	1
* p<,05, **p<,01, *** p<,001				

With regard to the group of participants with blindness (Table 15), there is a statistically significant moderate negative correlation (r_s=-,505, p=,002) between maternal care and maternal protection, which means that the greater the maternal care for the blind, the less protective is the mother.

With regard to the group of participants with deafness (Table 16), there is a statistically significant moderate to high negative correlation (r_s=-,636, p=,000) between maternal care and maternal protection, which means that the greater the maternal care for the deaf, the less, protective is the mother.

Table 16: Spearman's rho results for correlation among the scales for the deaf group

	Spearman's rho			
	Mother care	**Mother protection**	**Victim**	**Bully**
Mother care	1			
Mother protection	-,636**	1		
Victim	-,197	,005	1	
Bully	-,164	,184	,15	1
* p<,05, **p<,01, *** p<,001				

With regard to the group of participants with motor disability (Table 17), there is a statistically significant moderate negative correlation (r_s=-,585, p=,000) between maternal care and maternal protection, which means that the greater the maternal care for the motor disabled, the less, protective is the mother.

Additionally, there is a statistically significant small negative correlation (r_s =-,333, p=,021) between maternal care and bullying behavior of the participant.

Table 17: Spearman's rho results for correlation among the scales for the motor disabled group

	Spearman's rho			
	Mother care	**Mother protection**	**Victim**	**Bully**
Mother care	1			
Mother protection	-,585**	1		
Victim	-0,076	-0,136	1	
Bully	-,333*	0,181	0,004	1
* p<,05, **p<,01, *** p<,001				

Examining the sample as a total, there are more significant correlations between pairs of scales (Table 18). Specifically, there is a statistically significant moderate negative correlation (r_s = -,546, p=,000) between maternal care and maternal protection, which means that the greater the maternal care, the less, protective the mother tends to be.

Additionally, there is a statistically significant weak negative correlation (r_s=-,234, p=0,003) between maternal care and bullying behavior of the participant. Mother protection is also significantly, but positively correlated with bullying behavior (r_s=-0,210, p=0,007), meaning that more protection of the mother relates to more often violent behavior. Last, victim role has a significant, positive and weak correlation with bullying role (r_s =,211, p=,006), which is interpreted that victims also tend to act as bullies.

Table 18: Spearman's rho results for correlation among the scales for the total sample

	Spearman's rho			
	Mother care	**Mother protection**	**Victim**	**Bully**
Mother care	1			
Mother protection	-,546***	1		
Victim	-0,152	0,039	1	
Bully	-,234**	,210**	,211**	1
* p<,05, **p<,01, *** p<,001				

5.4 Regression analysis

A series of multiple linear regression analyses were performed, in order to detect which are the variables predicting victimization, or violent behavior. The procedure was conducted separately for the control group of respondents without disability and the experimental group with some kind of disability.

5.4.1 Victimization

First, victimization was considered as the dependent variable. The model that resulted has a good fit (F=4,220, p=,007) , with R^2=,332 and adjusted R^2=,253, meaning that 33% of victimization variance is predicted by the independent variables. Among the four independent variables the significant predicting variable is Mother protection (β=,502, t=3,414, p=,002). According to the model, an increase of 1 unit in the scale of mother care, keeping the rest of the variables constant, will increase victimization by 0,50 units (Table 19).

Table 19: Multiple linear regression analysis of victimization from mother care and protection for the participants without disability (N= 46)

Predicting variables	**B**	**SE B**	**beta**
Mother care	,133	,189	,137
Mother protection	,502	,147	,612**
Note: * p<,05, **p<,01, *** p<,001			
Dependent Variable: Victimization, R^2=,332, Adjusted R^2=,253, F= 4,220 p= ,007			

The multiple linear regression model, for the disabled group, with victimization as the dependent variable had a fit significantly different than zero (F=5,454, p=,000), with R^2=,163 and adjusted R^2=,133, meaning that 13% of victimization variance is predicted by the independent variables. Both Mother care (β=-,347, t=-2,495, p=,014) and Mother protection (β=-,303, t=-2,593, p=,011) are significant predictors (Table 20). All the predictors are negative, meaning that an increase in the predictors means decrease of victimization. Specifically, an increase of one unit in the scale of mother care, keeping the rest of the variables constant, will decrease victimization by 0,35 units and an increase of one unit in the scale of mother protection, keeping the rest of the variables constant, will decrease victimization by 0,30 units. It is clear from the results, that increased care for the non-disabled control group increases their tendency to be bullying victims, while for the disabled group increased care and protection decreases their victimization.

Table 20: Multiple linear regression analysis of victimization from mother care and protection for the participants with disability (N= 124)

Predicting variables	**B**	**SE B**	**beta**
Mother care	-,347	,139	-,289*
Mother protection	-,303	,117	-,302*
Note: * p<,05, **p<,01, *** p<,001			
Dependent Variable: Victimization, R2=,163, Adjusted R2=,133, F= 5,454 p= ,000			

5.4.2 Bullying

The second part of the regression analysis aims to the prediction of bullying behavior by the independent variables, of mother care and protection. This is done for the sample as a whole and separately for the control group and the experimental group (non-disabled and disabled).

The multiple linear regression model (F=2,142, p=,078), R^2=,053 and adjusted R^2=,028) for the whole sample, did not reveal any significant predictors.

However, when control group is examined, the results show that mother protection is a significant positive predictor (β=,328, t=2,384, p=,023), in a model that predicts 18% of the total bullying behavior (F=1,927, p=,127), R^2=,176 and adjusted R^2=,085). This means that if mother protection is increased by one unit of the PBI scale, for the non-disabled participants, their bullying behavior in the PEQ scale is also increased by 0,33 units, if all other factors are kept constant (Table 21).

Table 21: Multiple linear regression analysis of bullying behavior from mother care and protection for the participants without disability (N=46)

Predicting variables	**B**	**SE B**	**beta**
Mother care	,151	,169	,183
Mother protection	,328	,138	,453*
Note: * p<,05, **p<,01, *** p<,001			
Dependent Variable: Victimization, R2=,176, Adjusted R2=,085, F= 1,927 p= ,127			

The analysis for the experimental group (with disabilities) showed that mother care is the significant negative predictive variable predictor (β=-,198, t=- 2,086, p=,039) for bullying behavior in a model that predicts 8% of the total bullying behavior (F=2,358, p=,058), R^2=,078 and adjusted R^2=,045). This means that if mother care is increased by one unit of the PBI scale, for the disabled participants, their bullying behavior in the PEQ scale is decreased by 0,08 units, if all other factors are kept constant (Table 22).

Table 22: Multiple linear regression analysis of bullying behavior from mother care and protection for the participants without disability (N=46)

Predicting variables	**B**	**SE B**	**beta**
Mother care	-,198	,095	-,251*
Mother protection	-,076	,078	-,119
Note: * p<,05, **p<,01, *** p<,001			
Dependent Variable: Victimization, R^2=,078, Adjusted R^2=,045, F= 2,358 p=,058			

6. Discussion

The aim of the research was to investigate how maternal attachment of young people with some kind of disability (blindness, deafness, motor disability) entail them to victimization or bullying behavior and to examine the effect of demographic characteristics on this respect. Further it was aimed to conduct a comparison with a control group without disability.

The results have shown that people with blindness or deafness have acted as bullies more often, while people with motor disabilities less. With regard to victimization, the disabled groups suffer more than the non-disables ones, as it was expected, with the blind group being the ones that suffer victimization the most. This last finding doesn't seem strange at all, as their victimization is mainly due to the victims' disability. On the other hand, it sounds rather interesting and unexpected to find that people with blindness and deafness are more likely to exercise school bullying than those without a disability. It is also not unreasonable to frequently victimize people with a motor disability, due to the fact that their disability is more obvious than blindness and deafness. In this respect, one would expect to find this group in the first place for bullying victimization, though the results have shown that blind and deaf students are more often victimized. These results are in line with previous research, indicating that people with visual disabilities are often victimized and they exercise bullying (Buultjens et al., 2002; Rosenblum, 2000; Roy & Spinks, 2005). It should be mentioned, however, that these research papers, according to Pinquart & Pfeiffer (2011) do not attempt a comparison with a non-disabled group. Research has also shown that individuals with visual problems are simultaneously victims and offenders. Similar findings showing victimization of individuals with visual problems have also been reported by Horwood et, al. (2005) and Nordhagen et al. (2005), while different outcomes are reported by Pinquart & Pfeiffer (2011) who indicated that individuals with problems have no more possibilities of being offenders.

Speaking about acoustic disabilities, research as diverse results. Wauters & Knoors, (2008), as well as Kouwenberg et al., (2012) mention that individuals with acoustic problems have high victimization rates, while Kent (2003) had not found high victimization probability.

Our finding that people with acoustic disorders are more often been victimized is also in line with Pinquart & Pfeiffer (2015), who reported that deaf students are victimized more often than non-disable students. On the other hand, a number of other research as indicated that children and teenagers with acoustic disorders do not face more victimization than typical peers (Kent, 2003; Percy-Smith et al., 2008; Wauters & Knoors, 2008; Bauman & Pero, 2011; Theunissen et al., 2014).

Kinetic disorders, have been reported in the past as characteristics that are subject to school bullying (Lindsay & McPherson, 2012; Wilde & Haslam, 1996; Yude et al., 1998). In the present research, it has been found that this group is less victimized than people

with visual and acoustic disorders, but more than the typical, group, which is in line with previous research.

Maternal care is higher in people without disabilities, followed by people with a motor disability, then by deaf people and finally, people with deafness. Maternal protection is higher in people with motor disabilities, followed by protection to blinded individuals, then deaf people and, finally, non-disabled people.

As the Parental Bonding Instrument (PBI) referring to mother care and protection (for the scope of the present research, it is not intended to study father care and protection) it is concluded that individuals with disabilities receive high levels of care by their mother and low protection, which according to the PBI, is considered the optimal bonding relationship between mother and child. Individuals, with blindness, receive low care from their mother and high protection which is interpreted as an affectionless bonding relationship developed between the mother and the child. This is considered a problematic relationship as the child does not experience the love and warmth of the parent, but rather, is constantly under control. Ardito, et al., (2004) found that mothers of people with blindness were overprotective, a finding that is consistent with the present study. The above researchers justified their overprotection as having no necessary adverse effect, which is not the case with the present study as this overprotection is associated with a lack of child care. This may be due to the child's disability, as the mother overprotects him/but may have not yet accepted the disability.

People with deafness receive low care as well as low protection by their mother. This is interpreted that no form of bonding between deaf children and their mother has been established (absent bonding) and the children feel that their mother is absent. The above finding is partially supported by the research by Meadow-Orlans & Steinberg (1993) who found that parents of deaf children who did not have hearing loss did not express warmth to their children and did not provide them with the necessary care. Different results are, however, reported by Pipp-Siegal & Bringen (1998), who found that mothers of deaf children are overprotective and controlling.

Finally, people with motor disabilities receive high levels of care from their mother and also high protection, which is considered a fairly good attachment if the child experiences love and affection and can thus justify affectionate bonding. Wasserman et al., (1985) found that mothers of people with motor disabilities are closer to their children and are trying to understand their abilities than mothers of children without disabilities, a finding similar to that of the present study.

Regarding the effect of the personal characteristics of the participants, it was found that in many cases they are significant. Specifically, it was found that boys express more frequently than girls' aggressive behavior. Similar findings are reported by previous research (Olweus, 1993; Whitney & Smith, 1993; Pateraki & Houndoumadi, 2001; Sapouna, 2008; Nansel et al. 2003; Crick & Nelson, 2002; Kokkinos, 2007; Kokkinos & Kipritsi, 2012). Differences between boys and girls in school bullying, as confirmed by many studies, are related to the stereotypically different upbringing of boys and girls in terms of masculinity and violence. Other reasons may be that boys are more aggressive

in nature than girls (Rigby, 2008) and that they are physically superior to girls (Larke & Beran, 2006), or that society exhibits acceptance to aggression by boys, but not to the same extent by girls (Salmivalli et al., 2000).

Referring to the age, younger children are often victims, while older ones are more often offenders of school bullying.

Mother education is a significant factor affecting care and victimization, with children of primary school graduates experiencing more care than children of senior high school and university graduates and children with mothers that are high school graduates less than all the groups. For the non-disabled, children of high school mothers are the most venerable to school bullying, while at the other end are children with college graduate mothers. For the deaf children, the educational level of their mother has an effect on the care given, as children of university graduates receive more care by their mothers.

Mother profession is in some cases indicative of the bullying behavior of deaf children, as children of civil servants are more often offenders and children of unemployed children are least. The above finding may be due to the fact that non-working mothers had more time to talk to their children about bullying and its consequences, so the children avoid this behavior.

Another interesting finding is that mother of children with motor disabilities that live in rural areas are more protective than mothers living in urban areas, something that may be due to more conservative attitudes about children protection and control in villages. In addition, children with motor disability without brothers or sisters are more often victims of school bullying. This may be due to the fact that they have no support from siblings. Also, basic education mothers of children with mobility problems tend to be overprotective.

Finding for the control group (without disabilities) indicate that (a) the greater the care of the mother, the smaller, her protection. (b) as the care of the mother grows, the less victimized is the child, which is considered reasonable as the more love the child receives from. His/her mother and their parents in general the more secure he/she feels and cannot easily be victimized by school bullying. Similar finding is reported by Baumrind, (1991) and Ladd & Ladd (1998), while different results were reported by Finnegan et al. (1998), who indicated that victims are related with excessive care. Also, Kim, (2005) mentioned that children neglected by their parents are more likely to be victimized. Similarly, Shin, et al., (2016) argued that parental attachment is negatively correlated to victimization, while poor parental attachment and poor care can be associated with bullying and victimization Shin, et al., (2014). Baldry & Farrington (2000) also argued that poor care predicts bullying and Mitsopoulou & Giovazolias (2013) reported that children who perceived weak care are more likely to act as bullies. There are more studies pointing to the association of negligence and poor care with bullying (Bowers et al., 1994; Georgiou, 2008a; Georgiou, 2000; Perren & Hornung, 2005; Stevens et al., 2002). On the other hand, research has shown that overprotection may lead to high

probability of victimization (Besag, 1989; Bowers et al., 1994; Stevens et al., 2002; Perren & Hornung, 2005).

For the groups of blind and deaf participants, as well as those with motor disabilities, it was found that as mother care grows, mother protection is being reduced. For the group with motor disorders, it was also found that increased mother care is linked to lower bullying behavior.

Regression analysis revealed that for children without disability, mother protection significantly positively predicts victimization, and for non-disabled children mother care and protection significantly negatively predicts victimization. It can, therefore, be argued that in the present research it has been found that increased care for the non-disabled control group increases their tendency to be bullying victims, while for the disabled group increased care and protection decreases their victimization.

With regard to bullying behavior, for the non-disabled children, mother protection positively predicts bullying, while for the non-disabled mother care negatively predicts it.

7. Recommendation for further research

The present research has explored the maternal attachment in relation to school bullying and victimization of disabled young individuals at the age of ten to twenty-one. Father care and protection is beyond the scope of this attempt. Future research can explore this aspect, in a direction to integrate the findings, giving a global paternal view.

Conflict of Interest Statement

The authors declare that they have no conflict of interest related to the study or preparation of the manuscript.

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Appendix

Table 1: Cronbach alpha reliability coefficient per scale and disability group

Disability group	Scales	Cronbach a	Items
Without disability	Victim	,851	9
	Bully	,927	9
	Mother Care	,748	12
	Mother Protection	,782	13
Blind	Victim	,971	9
	Bully	,937	9
	Mother Care	,892	12
	Mother Protection	,919	13
Deaf	Victim	,938	9
	Bully	,934	9
	Mother Care	,777	12
	Mother Protection	,850	13
Motor disability	Victim	,903	9
	Bully	,947	9
	Mother Care	,909	12
	Mother Protection	,907	13

Table 2: Means for PBI (mother) scores per personal characteristics for the group without disabilities

Personal Characteristics		PBI					
		Mother Care			Mother Protection		
		M	F	p	M	F	p
Gender	Male	21,36	7,071	,624	19,53	,498	,437
	Female	23,29			22,59		
Age	10-12	34,00	1,707	,119	17,75	,395	,659
	13-15	16,45			23,18		
	16-18	21,07			23,34		
	19-21	26,56			18,38		
Residence	Village	19,94	1,669	,225	21,57	,194	,743
	Town/city	24,61			20,34		
Siblings	Yes	22,60	,012	,722	21,01	7,690	,208
	No	18,00			41,50		
Number of people living together	3	18,50	1,170	,286	23,70	1,664	,208
	4	19,72			22,84		
	5	28,21			12,29		
	6	26,29			22,00		
	≥7	-			-		
Mother Education	Primary	29,70	3,569	,012	20,40	3,022	,079
	High School	10,38			35,00		
	Senior High School	29,21			15,08		
	College	-			17,00		
	University	18,62			24,15		
	No education	-			-		
	No reply	-			-		
Mother Profession	Employee (public)	23,15	,201	,984	11,90	,528	,754
	Employee (private)	22,18			14,25		
	Employee (bank)	27,00			8,00		
	Military/defense	-			-		
	Businesswoman	24,83			10,66		
	Retired	21,00			12,50		
	Unemployed	22,83			11,00		
	Disability allowance	-			-		
	Other	11,50			-		
Mother Marital Status	Married	22,19	,031	,720	21,27	,015	,659
	Divorced	19,50			24,50		
	Separated	-					
	Re-married	-					
	Not in life	-					

Table 3: Means for PEQ scores per personal characteristics for the group without disabilities

Personal Characteristics		PEQ					
		Victims			Bullies		
		M	F	p	M	F	p
Gender	Male	23,06	,737	,818	29,06	6,855	,021
	Female	22,15			19,93		
Age	10-12	11,00	2,279	,094	12,67	1,841	,324
	13-15	13,90			23,59		
	16-18	17,26			27,03		
	19-21	13,62			21,94		
Residence	Village	20,00	,299	,283	24,88	,007	,291
	Town/city	24,10			20,86		
Siblings	Yes	22,12	,027	,365	23,05	,003	,268
	No	30,50			33,50		
Number of people living together	3	24,14	,470	,483	24,43	,749	,831
	4	21,74			21,85		
	5	15,75			26,57		
	6	26,07			21,93		
	≥7	-			-		
Mother Education	Primary	14,40	2,042	,046	16,00	1,353	,055
	High School	34,88			28,63		
	Senior High School	17,38			17,36		
	College	7,50			8,50		
	University	26,40			29,24		
	No education	-			-		
	No reply	17,00			21,00		
Mother Profession	Employee (public)	21,32	,691	,580	23,18	,807	,397
	Employee (private)	22,69			24,53		
	Employee (bank)	3,00			8,50		
	Military/defense	-			00,00		
	Businesswoman	21,67			12,67		
	Retired	29,83			29,83		
	Unemployed	22,00			23,10		
	Disability allowance	-			00,00		
	Other	37,00			42,00		
Mother Marital Status	Married	22,48	,779	,363	23,74	,789	,146
	Divorced	15,67			12,67		
	Separated	-					
	Re-married	-					
	Not in life	-					

Table 4: Means for PBI (mother) scores per personal characteristics for the group with blindness

Personal Characteristics		PBI					
		Mother Care			Mother Protection		
		M	F	p	M	F	p
Gender	Male	17,85	0,38	0,903	13,72	,129	0,722
	Female	18,29			15,00		
Age	10-12	17,35	1,160	0,764	11,78	,956	0,426
	13-15	15,75			19,50		
	16-18	17,00			16,60		
	19-21	20,80			13,20		
Residence	Village	22,95	2,697	0,070	15,30	,165	0,688
	Town/city	16,02			13,76		
Siblings	Yes	20,16	2,721	0,048	16,70	,669	0,234
	No	12,60			21,25		
Number of people living together	3	14,60	1,080	0,097	15,06	,430	0,733
	4	17,83			14,66		
	5	19,20			15,40		
	6	-			-		
	≥7	33,00			6,50		
Mother Education	Primary	21,71	1,073	0,318	12,14	1,755	0,164
	High School	28,50			4,66		
	Senior High School	14,73			19,00		
	College	-			-		
	University	18,13			12,50		
	No education	12,00			20,00		
	No reply	-			-		
Mother Profession	Employee (public)	28,50	,745	0,597	13,16	,158	0,976
	Employee (private)	23,40			17,20		
	Employee (bank)	-			-		
	Military/defense	-			-		
	Businesswoman	31,33			12,33		
	Retired	26,57			14,28		
	Unemployed	24,84			13,53		
	Disability allowance	-			-		
	Other	35,00			19,00		
Mother Marital Status	Married	18,00	,676	,417	18,00	,177	,677
	Divorced	-			-		
	Separated	-			-		
	Re-married	-			-		
	Not in life	-			-		

Table 5: Means for PEQ scores per personal characteristics for the group with blindness

Personal Characteristics		PEQ					
		Victims			Bullies		
		M	F	p	M	F	p
Gender	Male	20,64	1,788	0,627	21,14	,002	0,477
	Female	18,83			18,54		
Age	10-12	24,70	5,872	0,147	15,05	1,511	0,134
	13-15	20,00			27,17		
	16-18	18,20			20,80		
	19-21	16,10			19,70		
Residence	Village	18,67	8,838	0,986	24,39	1,329	0,796
	Town/city	19,76			17,98		
Siblings	Yes	18,63	,205	0,059	19,13	10,202	0,033
	No	20,17			18,61		
Number of people living together	3	21,00	,376	0,767	20,50	2,299	0,019
	4	17,36			18,14		
	5	18,09			18,68		
	6	45,00			34,00		
	≥7	6,50			15,00		
Mother Education	Primary	16,83	3,677	0,613	23,25	,218	0,615
	High School	23,66			16,50		
	Senior High School	19,08			18,88		
	College	14,50			14,00		
	University	20,50			20,19		
	No education	29,00			37,00		
	No reply	18,00			21,50		
Mother Profession	Employee (public)	20,00	1,659	0,308	27,42	,892	0,010
	Employee (private)	16,75			24,17		
	Employee (bank)	-			-		
	Military/defense	-			-		
	Businesswoman	7,00			20,75		
	Retired	24,00			20,78		
	Unemployed	23,75			6,50		
	Disability allowance	15,25			26,50		
	Other	14,00			19,60		
Mother Marital Status	Married	20,16	2,115	0,569	18,33	4,743	0,404
	Divorced	18,67			26,50		
	Separated	4,50			31,50		
	Re-married	17,75			21,75		
	Not in life	-			-		

Table 6: Means for PBI scores per personal characteristics for the group with deafness

Personal Characteristics		PBI					
		Mother Care			Mother Protection		
		M	F	p	M	F	p
Gender	Male	18,32	,073	0,616	14,21	,437	0,513
	Female	20,19			12,50		
Age	10-12	27,90	,183	0,907	9,10	1,375	0,267
	13-15	25,66			13,66		
	16-18	27,06			14,13		
	19-21	26,10			15,50		
Residence	Village	26,33	,109	0,743	15,66	1,304	0,261
	Town/city	27,10			12,34		
Siblings	Yes	26,96	,064	0,801	13,57	,507	0,481
	No	27,55			11,44		
Number of people living together	3	24,42	,375	0,825	12,78	,514	0,726
	4	26,54			15,54		
	5	28,00			12,00		
	6	22,00			7,00		
	≥7	31,00			10,00		
Mother Education	Primary	26,00	3,935	0,005	23,67	1,407	0,260
	High School	20,50			24,50		
	Senior High School	28,50			17,71		
	College	28,00			16,50		
	University	31,50			13,75		
	No education	20,00			26,50		
	No reply	18,00			37,00		
Mother Profession	Employee (public)	23,42	1,051	0,211	12,66	,316	0,923
	Employee (private)	18,58			12,50		
	Employee (bank)	00,00			00,00		
	Military/defense	00,00			00,00		
	Businesswoman	34,75			13,00		
	Retired	15,22			12,33		
	Unemployed	21,13			11,62		
	Disability allowance	24,75			16,50		
	Other	12,80			17,00		
Mother Marital Status	Married	27,12	,090	0,965	13,28	,315	0,814
	Divorced	25,33			10,66		
	Separated	27,00			19,00		
	Re-married	26,00			11,50		
	Not in life	-			-		

Table 7: Means for PEQ scores per personal characteristics for the group with deafness

Personal Characteristics		PEQ					
		Victims			Bullies		
		M	F	p	M	F	p
Gender	Male	20,64	,870	0,627	21,14	,306	0,477
	Female	18,83			18,54		
Age	10-12	24,70	1,988	0,134	15,05	1,301	0,335
	13-15	20,00			27,17		
	16-18	18,20			20,80		
	19-21	16,10			19,70		
Residence	Village	18,67	,299	0,796	24,39	,633	0,122
	Town/city	19,76			17,98		
Siblings	Yes	18,63	,186	0,709	19,13	,200	0,899
	No	20,17			18,61		
Number of people living together	3	21,00	3,425	0,019	20,50	,733	0,680
	4	17,36			18,14		
	5	18,09			18,68		
	6	45,00			34,00		
	≥7	6,50			15,00		
Mother Education	Primary	16,83	,748	0,615	23,25	1,574	0,557
	High School	23,66			16,50		
	Senior High School	19,08			18,88		
	College	14,50			14,00		
	University	20,50			20,19		
	No education	29,00			37,00		
	No reply	18,00			21,50		
Mother Profession	Employee (public)	20,00	,888	0,308	27,42	1,283	0,010
	Employee (private)	16,75			24,17		
	Employee (bank)	00,00			-		
	Military/defense	00,00			-		
	Businesswoman	7,00			20,75		
	Retired	24,00			20,78		
	Unemployed	23,75			6,50		
	Disability allowance	15,25			26,50		
	Other	14,00			19,60		
Mother Marital Status	Married	20,16	,335	0,569	18,33	2,236	0,404
	Divorced	18,67			26,50		
	Separated	4,50			31,50		
	Re-married	17,75			21,75		
	Not in life	-			-		

Table 8: Means for PBI scores per personal characteristics for the group with motor disabilities

Personal Characteristics		PBI					
		Mother Care			Mother Protection		
		M	F	p	M	F	p
Gender	Male	24,98	,023	0,992	15,18	,044	0,835
	Female	25,02			14,59		
Age	10-12	27,46	1,480	0,082	18,92	1,169	0,320
	13-15	34,21			23,36		
	16-18	29,90			26,40		
	19-21	20,26			28,10		
Residence	Village	20,10	,073	0,021	34,30	5,699	0,055
	Town/city	26,26			22,62		
Siblings	Yes	24,74	,348	0,844	14,94	,008	0,939
	No	25,60			14,66		
Number of people living together	3	21,65	,866	0,792	22,04	1,428	0,260
	4	23,77			22,04		
	5	27,50			15,75		
	6	14,25			39,50		
	≥7	23,00			32,50		
Mother Education	Primary	17,57	,816	0,447	23,14	3,363	0,008
	High School	25,64			21,28		
	Senior High School	24,46			15,50		
	College	28,17			5,66		
	University	29,50			10,00		
	No education	6,00			7,00		
	No reply	17,50			16,00		
Mother Profession	Employee (public)	25,75	,932	0,577	11,75	,993	0,443
	Employee (private)	28,25			16,70		
	Employee (bank)	35,00			1,00		
	Military/defense	44,00			3,00		
	Businesswoman	-			-		
	Retired	25,42			13,00		
	Unemployed	21,12			17,00		
	Disability allowance	-			-		
	Other	30,75			14,00		
Mother Marital Status	Married	24,32	,715	0,500	24,32	,335	0,724
	Divorced	32,20			32,20		
	Separated	11,00			11,00		
	Re-married	-			-		
	Not in life	25,80			25,80		

Table 9: Means for PEQ scores per personal characteristics for the group with motor disabilities

Personal Characteristics		PEQ					
		Victims			Bullies		
		M	F	p	M	F	p
Gender	Male	26,52	,052	0,659	24,70	,028	0,886
	Female	24,70			25,24		
Age	10-12	36,08	2,323	0,031	17,73	1,580	0,032
	13-15	20,71			23,93		
	16-18	18,70			17,40		
	19-21	23,21			29,83		
Residence	Village	20,25	1,205	0,202	26,65	,108	0,653
	Town/city	26,81			24,58		
Siblings	Yes	22,29	4,304	0,017	26,10	,687	0,349
	No	33,00			22,25		
Number of people living together	3	26,35	1,964	0,077	21,80	,305	0,594
	4	15,07			22,25		
	5	29,25			30,63		
	6	29,50			20,75		
	≥7	15,50			13,00		
Mother Education	Primary	29,64	,729	0,481	31,79	2,303	0,616
	High School	23,79			25,21		
	Senior High School	26,82			23,27		
	College	28,67			27,67		
	University	25,44			22,85		
	No education	3,50			14,00		
	No reply	3,50			38,00		
Mother Profession	Employee (public)	22,25	1,120	0,367	23,06	,203	0,652
	Employee (private)	17,18			26,18		
	Employee (bank)	18,00			38,00		
	Military/defense	26,00			14,00		
	Businesswoman	00,00			00,00		
	Retired	14,66			23,00		
	Unemployed	23,66			24,33		
	Disability allowance	00,00			00,00		
	Other	17,00			38,00		
Mother Marital Status	Married	27,54	,963	0,290	25,08	,409	0,429
	Divorced	17,58			20,83		
	Separated	11,00			44,00		
	Re-married	00,00			00,00		
	Not in life	22,40			25,60		