Bullying and victimization at school: The role of mothers

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Background. Social learning literature is used in order to describe the contextual parameters of peer aggression, and specifically bullying and victimization.

Aim. The aim of the present study was to examine the influence of maternal characteristics on their child's victimization or bullying experience at school.

Sample. The participants were 252 elementary school students (mean age 11.5 years) and their mothers.

Method. A theoretically driven model was developed and its ability to fit the data was tested. The main factors included in the model were the following: parental style as perceived by the child, self-reported parental involvement, the mother's emotional state and the degree of victimization experienced by the child at school.

Results. Through confirmatory factor analysis, it was shown that maternal responsiveness was positively related to the child's adjustment at school (i.e. achievement and social adaptation), while the same factor was negatively related to school aggression (bullying and disrupting behaviour). Overprotective mothering was associated with high degrees of victimization experienced by the child, whereas maternal depressiveness was related to both victimization and bullying behaviour on the part of the child.

Conclusions. Parents should be included in the design of intervention plans aiming at the elimination of bullying at school.

Bullying starts at home (Patterson, 1982, 1986). Children learn to be aggressive towards others, especially those who are less powerful than them, by watching the daily interactions of their family members. Parents who are stressed because of financial or other marital/personal problems tend to have poor communication with their children, to be hostile or distant and to use extreme practices in their attempt to enforce discipline. Research shows that parenting techniques, particularly harsh and inconsistent punishment, often lead to child aggression (Loeber & Stouthamer-Loeber, 1986). Victimization is also related to family characteristics. There is evidence

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suggesting that children who experience victimization problems are more likely than non-victimized peers to come from families with histories of child abuse, poor attachment and poorly managed conflict (Perry, Perry, & Kennedy, 1992).

Patterson, Reid, and Dishion (1992) go as far as to claim that members in certain families directly train children to perform antisocial activities by being non-contingent in their use of both positive reinforcement for prosocial behaviour and effective punishment for undesirable conduct. These researchers describe how parents and siblings actually reinforce negative behaviour by attending, laughing or approving this behaviour, while ignoring positive behaviour when it is exhibited. Analysing coercive chains between children, mothers and siblings, Loeber and Tengs (1986) concluded that aggressive children operate in a social environment that is characterized by frequent attacks by most family members. Mothers of aggressive children tended not to follow-up on their intervention when aggression continued; they were inconsistent in their intervention and less effective in curtailing conflict once it occurred.

Even though there are a few studies that link bullying with personality and neuropsychological disorders (Coolidge, DenBoer, & Segal, 2004), most researchers agree that this type of behaviour is mostly related with social variables, and specifically with the family background of the aggressor. Connolly and O'Moore (2003), for example, have identified factors such as the father's absence (physical or psychological), the presence of a depressive mother and incidents of domestic violence as factors enhancing bullying behaviour in children. Many researchers mention maternal behaviour and particularly overprotection as a correlate of victimization (Besag, 1989; Perren & Hornung, 2005). Victims perceive their family as controlling and their parents as overprotective (Stevens, De Bourdeaudhuij, & Van Oost, 2002). However, parental involvement that is not perceived by the child as overprotection is negatively related with bullying behaviour (Flouri & Buchanan, 2003).

Some authors suggest that the child's gender is a significant variable in determining involvement in victimization. Specifically, Finnegan, Hodges, and Perry (1998) suggest that parenting hinders the development of gender-linked competences and results in victimization. Their study showed that for boys, victimization was associated with perceived maternal overprotectiveness, while for girls, the same variable was associated with perceived maternal rejection. Similarly, Rigby (1993) showed that victimized girls reported a negative relationship with their mothers, perceiving them as more critical, bossy and sarcastic. Furthermore, the family encourages less autonomy in victimized girls than boys (Rican, Klicperova, & Koucka, 1993). In addition, Nigg and Hinshaw (1998) found that overt antisocial behaviours in boys were associated with maternal neuroticism.

Other studies have shown that delinquent behaviour is associated with parental rejection, weak parental supervision and inadequate involvement with the child (Cernkovich & Giordano, 1987). As Hagan and McCarthy (1997) comment, parents who pay attention to their children, supervise them closely and expect them to succeed are instrumental in reducing the aggressive behaviour both within the family and outside.

Regarding parental style (Baumrind, 1991), research shows that permissive parental behaviour (high responsiveness and low control) best predicts the experience of victimization by the child, while the authoritarian parental style (low responsiveness and high control) best predicts bullying behaviour (Baldry & Farrington, 2000; Kaufmann *et al.*, 2000). In contrast, Bowers, Smith, and Binney (1994) found victimized children to perceive their parents as overprotective. Children who bully their peers are more likely to come from families where parents use authoritarian, harsh and punitive

child rearing practices (Espelage, Bosworth, & Simon, 2000). Rigby (1993) found that children who perceived their parents as holding positive attitudes towards them were less likely to be involved in bullying. Bullies describe their family as less cohesive, more conflictual and less organized. In the contrary, children who perceived their parents as authoritative (i.e. setting limits but respecting their children's independence and being responsive to their needs) were less likely to engage in bullying behaviour (Rican *et al.*, 1993).

Several models have been proposed over the years describing the family parameters of bullying and victimization. Most of them include various indications of maternal characteristics, emotional and behavioural, since the child's mother, as the principal caretaker, is usually the person who has potent influencing power. An early attempt to identify intra-familial factors that contribute to the development of an aggressive reaction pattern in children was that of Sears and his colleagues (1957). They emphasized three such factors: mother's negativism (absence of warmth, hostility, rejection, coldness and indifference); permissiveness for aggression and use of physical punishment. Olweus (1980) added a fourth one – child's temperament – and used the same factors in a path analysis design. He found that a considerable amount of variance in the habitual level of aggression expressed by the participants could be explained by the factors included in the model. Mother's negativism and permissiveness for aggression had the greatest causal effects. He concluded 'that a young boy who gets too little love and interest from his mother and too much freedom and lack of clear limits with regard to aggressive behaviour is particularly likely to develop into an aggressive adolescent' (p. 657).

Craig, Peters, and Konarski (1998) developed and tested a model describing the effects of structural and functional family characteristics on bullying and victimization experiences. The factors included in the model were the following: family demographics (parents' education and income); family functioning (positive and hostile interaction, consistency and punitive practices); externalizing behaviour problems (physical aggression, indirect aggression, property offences and prosocial behaviour); internalizing behaviour problems (emotional difficulties); bullying and victimization experiences. The modelling procedure and analysis through the LISREL software showed that the model could describe well the contributions of family demographics and family socialization to externalizing and internalizing behaviours. More specifically, the results were that parenting and family management practices interact with individual behavioural attributes and contribute indirectly to bullying and victimization.

In a recent study, Snyder, Cramer, Afrank, and Patterson (2005) tested a model of the early development of child conduct problems that incorporates the reciprocal effects of child behaviour on parenting practice and of parenting on child behaviour. In other words, using a mediator model they assessed the degree to which parent discipline tactics predicted growth in child conduct problems during early years, while simultaneously accounting for the relation of child behaviour to parental practices. They concluded 'that discipline encounters are really co-constructed by the parent and the child rather than imposed on the child in a 'top-down' fashion by the parent' (p. 39).

To summarize, parental practices at home have been shown to be the correlates of child bullying and victimization experiences at school. Such practices include: harsh and inconsistent punishment; too little or too much involvement (overprotection); responsiveness (reverse relationship) and permissiveness for aggression. Maternal attitudes and behaviour have been particularly examined because of the mother's special role in her children's life. Some association seems to exist between maternal

responsiveness, involvement and depressiveness on one hand, and child bullying and victimization on the other.

The present study

The present study deals with a real problem that troubles the contemporary family and school. Victimization is a disturbing social phenomenon with serious short- and long-term effects. It often leads to emotional stress, depression, low self-esteem and even suicidal attempts (Munn, 1993; West & Salmon, 2000). Further, it has been found that both bullies and victims have significantly higher risk of engaging in criminal or self-distractive activity as adults (Baldry & Farrington, 2000; Haynie *et al.*, 2001; Perren & Hornung, 2005). In several studies, children who bullied exhibited greater emotional inhibition and attributed significantly more negative statements to themselves than children who did not bully. Bullies also demonstrated an ambivalent relationship with their parents and their siblings (Connolly & O'Moore, 2003). The scariest reports are perhaps those claiming that bullying and victimization can be transmitted across generations through the social learning process (Farrington, 1993), thus producing a vicious circle that is difficult to break.

The aim of the study was to test a theoretically driven model describing the family parameters of bullying and victimization. The model includes both observed (measured) variables and latent factors. These factors were selected from those identified in the social influence literature as correlates of bullying and victimization. The main ones are the following:

(1) *Maternal responsiveness:* Earlier research has shown that responding to the child's needs, having a warm accepting relationship, being available to discuss the child's problems and helping with difficulties is negatively related to aggressive behaviour (Cernkovich & Giordano, 1987; Hagan & McCarthy, 1997; Rigby, 1993). Olweus (1980) used the opposite construct in his model and called it 'mother negativism' (p. 647).

(2) *Maternal overprotectiveness:* There is evidence in the literature that parental involvement, which is perceived by the child as overprotection, may block the child's initiative and limit her ability to defend herself or deal effectively with victimization attacks by other children (Besag, 1989; Perren & Hornung, 2005; Stevens *et al.*, 2002). However, the temporal relationship between overprotective mothering and victimization needs some clarification because the reverse direction of influence may also be true. In other words, mothers may become more fearful of letting their child play with others, worry more about their child's safety and worry more about their child in general as a result of perceiving that their child is being targeted for victimization. In other words, the question is: does an overprotective mother make her child a possible victim, or a potentially victimized child turns his mother into an overly protective person?

(3) *Maternal depressiveness:* Prior research (Connolly & O'Moore, 2003; Nigg & Hinshaw, 1998) has shown that the emotional state of the mother and especially her chronic depression may be associated with her children's bullying behaviour. An explanation of this may be that a depressed parent is likely to use inconsistent discipline practices and at times harsh punishment, both of which are linked to bullying behaviour (Craig *et al.*, 1998; Loeber & Stouthamer-Loeber, 1986).

Owing to her condition, she may also be unable to intervene and effectively terminate her child's aggressive behaviour, a situation that may lead in her becoming the victim of bullying by her own child. The aggressive child is often both the victim of her parent's chaotic behaviour and an architect of a coercive family system, where mothers are the 'unacknowledged victims' (Patterson, 1980).

In addition to the above family-related factors, the following ones that refer to individual attributes were included in the model: child school achievement; child social adjustment; level of exhibited aggression and bullying and victimization experiences at school.

Method

Participants

The participants of the present study were 252 Greek Cypriot children attending the 4th, 5th or 6th grade of elementary school (mean age 11.5 years) and their mothers. About half of the children (136) were female. Ten schools (four urban and six rural) were randomly selected from the list of public elementary schools of an educational district in Cyprus. All the students attending the above grades in the selected schools were included in the sample. In terms of family socio-economic background, the sample is representative of the population of Greek Cypriot 10–12-year-old children. This claim is based on the fact that about 15% of the participants came from low SES families (i.e. neither parent had a high school diploma and the family income was below average). About 25% of the participants came from high SES families (i.e. at least the main income provider had a university degree and a professional job, while the family income was above average). Finally, the rest of the sample (about 60%) came from average SES families. This categorization approximates national demographics.

Instruments

Four scales were used for collecting the data of this study: two were completed by the children participants and two by their mothers. The first one was the Revised Bullying and Victimization Questionnaire (BVQ; Olweus, 1996). It is a 28-item self-report measure that covers the seven areas of victimization. In other words, having been called bad names, having belongings taken without permission, having lies told about them, having nasty tricks played on them, having being threatened or blackmailed, having been hit or beaten up and having been systematically excluded from groups. Four items for each area were included in the scale: two were phrased for victimization and two for bullying. The instrument was translated from English to Greek and then back to English by two independent groups of translators. Minor adjustments were made to the translation to correct the few identified discrepancies. The participating children were asked to state whether they suffered each of the above experiences and whether they committed the same acts on other children during the past 4 months, i.e. from the beginning of the current school year, since the data were collected in December. The answers were given on a five-point Likert-type scale (4, absolutely true; 3, somewhat true; 2, ambivalent; 1, slightly true; 0, not true at all). This scale was preferred over other instruments that measure victimization and bullying experiences at school, such as the one developed by Kokkinos and Panayiotou (2004) following Neary and Joseph's (1994) self-disclosure approach, because it is more widely used and can produce clear factors, as Woodsa and Wolke (2004) point out. Furthermore, its format is more versatile than

the forced-choice format used by other scales. Using a sample of 12-year-old Greek Cypriot students, Kyriakides, Kaloyirou, and Lindsay (2006) examined the psychometric properties and the international usefulness of the BVQ and concluded that their study 'has provided support for the validity and reliability of the [scale] using Rasch modelling' (p. 797).

The second scale filled out by the children participants was the Miller, Diiorio, and Dudley (2002) questionnaire measuring parenting style (PSQ). It is a 26-item self-report scale based on Baumrind's (1991) theory. It gives scores in two dimensions, parental responsiveness and permissiveness as perceived by the child. The four parental styles (authoritarian, authoritative, permissive and neglectful) come out as combinations of low and high scores in the above two dimensions. The scale is intended for school aged children that are at least 8 years old. Examples of items included in the scale are: 'I can depend on my mother when I have a problem' and 'My mother allows me to go anywhere I want (cinema, café) with my friends'.

The third scale – the Parental Involvement Scale (PIS) – was based on a self-report inventory originally developed by Campbell and Mandel (1990) and adapted to the Greek language and culture by Flouris (1991). It was completed by mothers. The version of the questionnaire that was used in the present study was the same as the one used in earlier studies (Georgiou, 1997, 1999) and includes a total of 30 items. Some of these items refer to activities that parents do at home in relation to their child and some to activities that parents do at their child's school. The first category is further divided into three subcategories. The first one includes activities that are related to the child's homework (e.g. 'I examine my child after he/she finishes his/her homework', 'I go over the corrected tests or papers he/she brings home from school'). The second subcategory includes monitoring activities (e.g. 'I check the programmes my child watches on TV'). Finally, the third subcategory includes statements aiming at identifying overprotecting tendencies (e.g. 'I am reluctant to let my child play with other children because I am afraid (s)he may be hurt', 'I worry when my child is not with me'). The second part of the PIS includes items such as 'I visit my child's school to talk to teachers' and 'I attend events organized by my child's school'. These items measure the parent's involvement in schooling. The scale produces factors with reliable Cronbach alpha levels (.70–.90). The mothers who participated in the study were asked to mark their response on a five-point Likert-type scale that included the following alternatives: 4, always; 3, often; 2, ambivalent; 1, only sometimes; 0, never.

Finally, participating mothers were asked to fill out the Major Depression Inventory (Psychiatric Research Unit, WHO Collaborating Center for Mental Health, Frederiksborg General Hospital). This is a short 10-item scale that measures emotional state and identifies depressive individuals. Examples of items are the following: 'I feel that life is not worth living', 'I feel that I have no energy or strength'. The answers were given on a five-point Likert-type scale (4, absolutely true; 3, somewhat true; 2, ambivalent; 1, slightly true; 0, not true at all). The maximum possible score (showing high depression) is 40 and the minimum is zero.

All participants (mothers and children) filled out a demographics form that included information about the child's school achievement, social adjustment and behaviour at school. The child's school achievement was operationally defined as the average score in language and mathematics in the latest progress report given by the child's teacher. Social adjustment at school was operationally defined as the extent to which the child had a friendship network and was accepted by peers at school. Finally, behaviour at school was defined as the frequency and seriousness of offends for which the child was

punished by the school principal during the current school year. Both mothers and children reported their perceived scores for these three attributes for cross-check purposes.

Procedure

Following the sampling procedure described earlier, the children in the selected grades of each school were asked to complete the two scales (BVQ and PSQ) in class. They were also instructed to take the other two scales (MDI and PIS) home and ask their mother to complete them. A letter explaining the purpose of the study accompanied the scales. Parents were ensured that their anonymity would not be violated. Parents who had more than one child were instructed to think of their child who had brought the questionnaire home when answering it. The completed questionnaires were returned the following day in a provided sealed envelope for purposes of confidentiality. A code was placed on the envelopes enabling the researcher to match the answers of each dyad. The principal of each school had undertaken to send back the completed questionnaires to the researcher by post. The rate of return was 78.2%, which is considered to be acceptable. No miss matching occurred between mother and child data. Only protocols containing the answers of both the child and his/her mother were used in the analysis.

Statistical analysis

The collected data for the three scales (BVQ, PSQ and PIS) were factor analysed separately in order to produce more valid and internally consistent categories of responses regarding bullying and victimization at school, maternal involvement and parental style. The fourth scale (MDI) was used only for obtaining a depression score for mothers. In all three cases, the *varimax* rotation method was used for the factor analysis. Subsequently, a confirmatory factor analysis was performed in order to test the fitness of the hypothesized model consisting of the factors revealed by the exploratory factor analysis, as well as the relations between these factors. Specific relations between factors were tested via MANOVA.

Exploratory factor analysis

The bullying and victimization questionnaire (BVQ)
Three factors were extracted accounting for 45.9% of the total variance. The criterion for factor selection was that their eigenvalue should be over 1.00. Questionnaire items with loadings that exceeded a limit of .40 were thought of adequately defining each factor. The extracted factors are the following:

(1) *Victimization I:* This factor, explaining 32.1% of the total variance, included physical and verbal attacks suffered at school.
(2) *Bullying:* This factor (accounting for 7.4% of the variance) included items that described activities committed by the child against other children at school.
(3) *Victimization II (social exclusion):* This factor, explaining 6.3% of the total variance, groups together victimization experiences at school that refer to social exclusion.

Details of all the extracted bullying and victimization factors (i.e. eigenvalue, examples of items that make up each factor, etc.) appear in Table 1.

Table 1. Bullying and victimization factors as revealed by the exploratory factor analysis

B and V factors (Cronbach alpha in parentheses)	Factor eigenvalue	Percentage of explained variance (%)	Examples of items that make up the factor (loading in parentheses)
Factor 1. Victimization I (.83)	6.4	32.1	V9: One or more classmates take or break my things without my permission (.57)
			V10: One or more of my classmates lie about me to the teachers (.57)
			V13: One or more of my classmates call me bad names (.62)
			V18: One or more of my classmates push me around (.67)
Factor 2. Bullying (.81)	1.5	7.4	V21: I have beaten up kids to scare them off (.68)
			V22: I have taken things that belong to other children without their permission, just for fun (.58)
			V27: I make fun of kids I don't like (.74)
			V29: I push around smaller kids in the yard (.66)
Factor 3. Victimization II – social exclusion (.51)	1.2	6.3	V2: I usually play alone during breaks (.59)
			V8: I am often excluded from games (.54)
			V20: I don't want to go to school because some kids make me feel bad there (.51)

The parental style questionnaire (PSQ)
In line with the underlying theory (Baumrind, 1991), two factors were extracted, accounting for 30.3% of the total variance. One of the factors grouped together items that refer to mother's responsiveness to her child's needs and another to her permissiveness (absence of control). As in the other cases, to be extracted, a factor should have an eigenvalue over 1.00. Technical details of this computation, including factor eigenvalue, reliabilities and example of items included in each one, appear in Table 2.

The Parental Involvement Scale (PIS): Three parental involvement factors were extracted, accounting for 32.0% of the total variance. These factors were the following:

(1) *Monitoring:* This factor, which explains 14.6% of the variance, refers to the parental behaviour that has to do with controlling the child's non-academic life. Examples of items that were grouped into this factor are the following: 'I control my child's TV watching time' and 'I want to know who my child's friends are'.
(2) *Involved in schooling and helping with homework:* This factor, which explains 10.8% of the variance, consists of items that asked the respondents to say how

Table 2. Parental style factors as revealed by the exploratory factor analysis

Parental style factors (Cronbach alpha in parentheses)	Factor eigenvalue	Percentage of explained variance (%)	Examples of items that make up the factor (loading in parentheses)
Factor 1. Responsiveness (.78)	3.7	18.5	V1: My mother helps me face difficulties (.67)
			V5: My mother allows time to talk to me (.68)
			V6: I feel that my mother understands me (.64)
			V10: I can depend on my mother when I have a problem (.63)
Factor 2. Permissiveness (.68)	2.3	11.8	V13: My mother allows me to be out with friends as late as I want without supervision by adults (.58)
			V14: My mother allows me to dress any way I want (.74)
			V18: My mother allows me to talk on the phone for as long as I want to (.66)
			V19: My mother allows me to go anywhere I want (cinema, café) with my friends (.68)

often they check their children's workbooks, examine their children after they finish their homework, sit with them while doing their homework and help them when needed. In other words, how often and to what extent they behave as if they were the child's teachers at home. This factor also includes items that refer to the contact parents maintain with the child's school (i.e. visiting to talk to teachers, attending events organized by the school and volunteering for various school activities).

(3) *Anxious overprotecting:* This factor groups together items that reveal parent's anxiousness and overprotecting tendencies. It explains 6.6% of the variance. Examples of items that were grouped into this factor are the following: 'I call many time when my child is not home (on a camp, vacations, etc.)'; 'I am reluctant to let my child play with other children because I am afraid (s)he may be hurt' and 'I worry when my child is not with me'.

Additional details (eigenvalue, reliability index and loadings) for each of the above factors appear in Table 3.

Modelling procedure

In this study, we posited an *a priori* (initial) structure and tested the ability of a solution based on this structure to fit the data. The *a priori* model consists of nine first-order factors each of which is constructed by two or three composite variables. The composite variables were built by adding together questionnaire items that loaded effectively on each factor in the exploratory factor analysis procedure (Table 4). These factors represent the three maternal types (responsive, depressive and overprotective),

Table 3. Parental involvement factors as revealed by the exploratory factor analysis

Involvement factors (Cronbach alpha in parentheses)	Factor eigenvalue	Percentage of explained variance (%)	Examples of items that make up the factor (loading in parentheses)
Factor 1. Monitoring (.76)	4.4	14.6	V12: I check the programmes my child watches on TV (.54) V13: I look after my child's appearance (dress, haircut and tidiness) (.57) V14: I care for his/her diet (.67)
Factor 2. Being involved in schooling and helping with homework (.79)	3.2	10.8	V1: I help my child with homework (.84) V3: I examine my child after she finishes her homework (.85) V4: I follow closely his/her schoolwork and progress (.77) V8: I visit my child's school to talk to teachers (.86)
Factor 3. Anxious overprotecting (.78)	1.9	6.6	V19: I call many time when my child is not home (on a camp, vacations, etc.) (.66) V23: I am reluctant to let my child play with other children because I am afraid (s)he may be hurt (.63) V28: I worry when my child is not with me (.71) V30: Other people think that I am overprotecting my child (.56)

child school achievement and social adjustment, and child behaviour (aggression, bullying, victimization and experience of social exclusion). The model includes also two second-order factors (child adaptation and aggression). It should be noted that certain subscales were not included in the proposed model either because the extracted factors did not correlate to other constructs (e.g. permissiveness) or because prior research did not support their inclusion (e.g. monitoring, involvement in schooling).

Results

Confirmatory factor analysis

A theoretical model was constructed in order to describe the simultaneous interrelations existing among several relevant factors and variables identified by prior research. The influences between the factors and variables included in the model appear in Figure 1. The ability of the structure to fit the data was tested by means of the EQS software and the modelling procedure followed the currently accepted practice. Three fit indices were computed: the chi-squared to its degree of freedom ratio (χ^2/df); the comparative fit index (CFI) and the root mean square error of approximation (RMSEA). These three indices recognized that the following needed to hold true in order to support model fit: the observed values for χ^2/df should be less than 2.0; the values for

Table 4. Observed and latent variables used in the confirmatory factor analysis

Latent variable (factor)	Composite (observed) variable (loading in parenthesis)	Questionnaire items that makeup the composite variables
	RES1 (.87)	PSQ items 4,5,6
Responsiveness	RES2 (.79)	PSQ items 1,10
	RES3 (.76)	PSQ items 2,8,9
	OPR1 (.72)	PIS items 18,19,28
Overprotectiveness	OPR2 (.79)	PIS items 21,22,30
	OPR3 (.53)	PIS items 20,23,26
	DEP1 (.87)	MDI items 1,2
Depressiveness	DEP2 (.79)	MDI items 3,4
	DEP3 (.76)	MDI items 7,8
Bullying	BUL1 (.89)	BVQ items 9,15
	BUL2 (.65)	BVQ items 10,18
	VIC1 (.48)	BVQ items 2,3
Victimization	VIC2 (.72)	BVQ items 7,20
	VIC3 (.54)	BVQ items 5,12
Adjustment	ADJ1 (.48)	DEM * items 1,2
	ADJ2 (.72)	DEM items 5,6
Aggression	AGR2 (.79)	DEM items 10,11
	AGR3 (.72)	DEM items 15,17

Note (*): DEM = taken from demographics information. All other acronyms refer to scales used in the study.

CFI should be higher than .9 (close to one) and the RMSEA values should be close to zero (Marcoulides & Schumacker, 1996).

Figure 1 makes easy the conceptualization of how maternal responsiveness leads to child adaptation at school (FC = .57) and at the same time 'protects' the child from exhibiting aggression (FC = −.18) and experiencing social exclusion (FC = −.14). In addition, it shows how maternal depressiveness is statistically related to both child victimization (FC = .33) and bullying experiences at school (FC = .30). Finally, it shows the positive relationship between maternal overprotection and child victimization (FC = .33).

The confirmatory factor analysis has found that the constructed model as a whole could accurately describe the above interrelations. The parameter estimates were reasonable in that all factor loadings were large and statistically significant ($p < .001$). All indicators load strongly and distinctly on each of the latent constructs and the goodness of fit index was very good in relation to typical standards ($\chi^2 = 138.38$ with 74 degrees of freedom, $p < .001$). In fact, the comparative fit index (CFI) of .99 indicates an excellent fit (Jaccard & Wan, 1996). The ratio of chi-squared to its degrees of freedom was also acceptable ($\chi^2/df = 1.87$). The root mean square error of the tested model was .06.

Specific relationships and differences
In addition to testing the theoretical model described above, this study also examined the differences between mothering categories and children's bulling experiences at school. This was done through multiple analysis of variance (MANOVA) in which peer
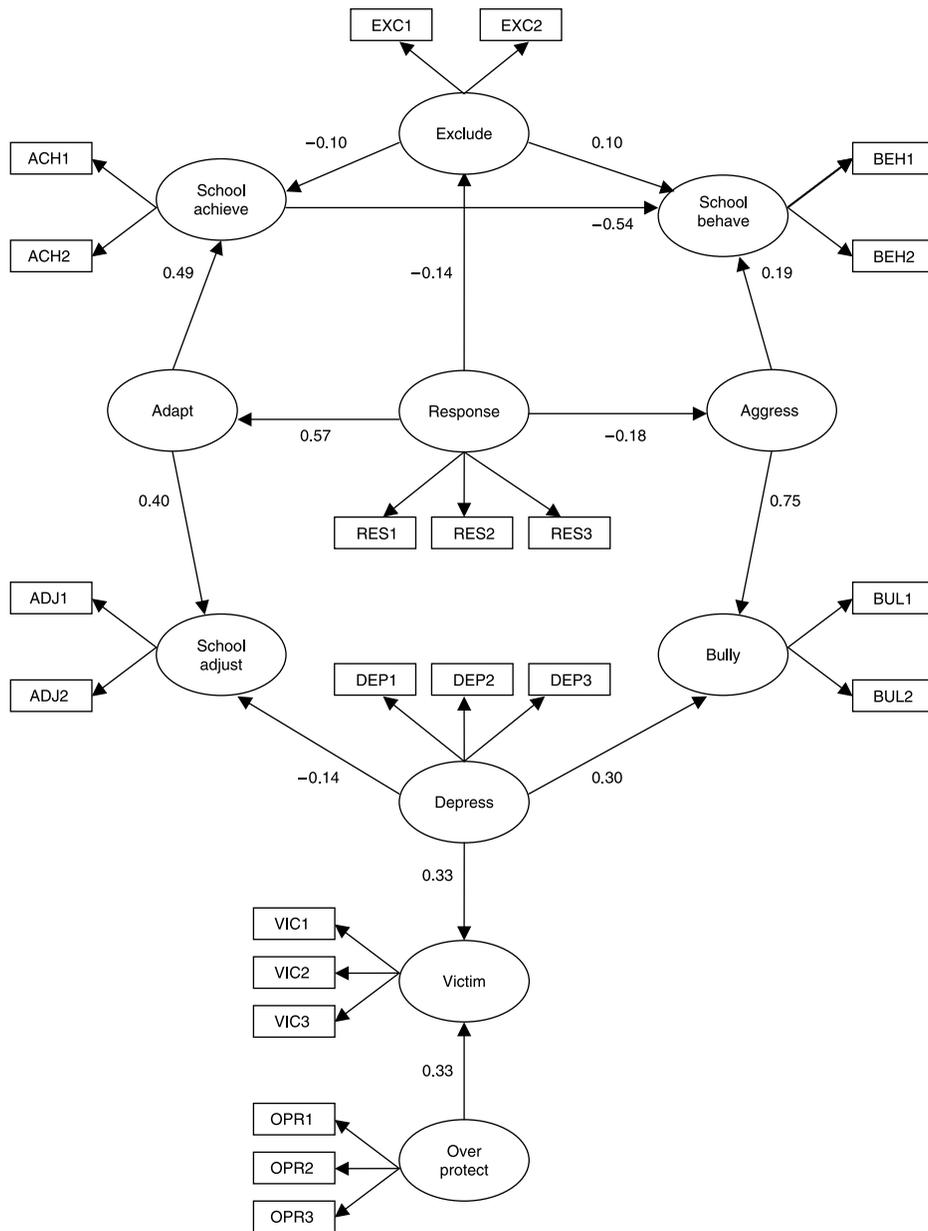
Fit indices: CFI=0.99, x²/*df*=1.87, RMSEA=0.06

Figure 1. Tested model showing the family parameters of bullying at school.

violence experiences were used as dependent variables, while mothering type and child gender were used as independent ones. For the purposes of this analysis, two groups of mothers were created, the depressive and the non-depressive. Depressive mothers were operationally defined as those who scored higher than one standard deviation above the mean of the total distribution of scores on the MDI. Similarly, two groups were created for overprotectiveness. It was found that depressive mothers ($N = 43$) had children

who were victimized at school significantly more than non-depressive mothers ($F(206, 1) = 6.36$, $p < .01$). They also had children who bullied other children significantly more than non-depressive mothers ($F(206, 1) = 4.51$, $p < .05$). Over-protective mothers ($N = 51$) had children who were victimized at school significantly more than the rest ($F(206, 1) = 6.31$, $p < .01$).

The only significant interaction effect ($F = 4.08$, $p < .05$) was for bullying behaviour. Boys of depressed mothers had the highest score (2.58) and girls the lowest (1.33), while boys of non-depressed mothers had a score of 1.54 and girls a score of 1.81.

Discussion

A responsive mother is available to talk to her children and help them deal with problems arising in everyday life. She is accepting, dependable and perceived by her child as supportive. As can be seen in Figure 1, having a responsive but not over-protective mother has positive effects on her child. The most obvious of these effects is better adaptation at school, including achievement and social adjustment. Maternal responsiveness seems to shield the child against isolation and exclusion from peer groups. Social exclusion at school is less likely to occur if the child is accepted and cared for at home. Further, a child who is socially accepted and included in class or school activities is less likely to exhibit aggressive behaviour. One possible explanation may be that maternal responsiveness to children's needs helps children feel more secure and increase their self-esteem. Moreover, this set of parental behaviours model warmth, empathy, kindness and compassion, which children may emulate in their peer relations. Children who display these attributes are, by definition, less aggressive. These children are more accepted by peers and as a result are less likely to experience social exclusion. This finding is in line with earlier reports claiming that responsive parenting is positively related to child social adaptation and negatively related to aggressive behaviour (Cernkovich & Giordano, 1987; Craig *et al.*, 1998; Hagan & McCarthy, 1997; Olweus, 1980). As Flouri and Buchanan (2003) have argued, parental involvement that is not perceived by the child as overprotection is negatively related with bullying behaviour.

However, when parental involvement crosses the fine line that separates it from overprotection, problems begin to emerge. The results of this study offer support to earlier findings that overprotective mothering is associated with higher risk for child victimization at school (Bowers *et al.*, 1994; Perren & Hornung, 2005; Stevens *et al.*, 2002). Highly anxious and extremely protective mothers turn their child into a passive and submissive individual who is unable to control his or her own affairs. Therefore, the child becomes an easy target for bullies. It should be stressed, though, that in some cases the context in which the family lives might require higher parental vigilance. In other words, in places where there are physical dangers (i.e. heavy traffic, open drains) or high crime rates 'good' parents may indeed be reluctant to let their children play outside without adult supervision. In other words, the amount of protectiveness required to promote optimal child development may vary with the characteristics of children's home and neighbourhood environments. Nonetheless, both the MANOVA results and the SEM analysis results of this study confirm prior findings (Besag, 1989) that too much maternal protection at home is a correlate of victimization at school. Even though statistically the direction of influence is set (i.e. the reverse effect destroys the fit of the model), logically there is still the question of whether it is the maternal overprotection that turns the child into a potential victim of bullying at school or whether the child's fragility and worries over possible victimization make the mother overly protective.

The finding that depressed mothers tend to have aggressive children is not new in the relevant literature (Connolly & O'Moore, 2003). This is especially true for boys, as Nigg and Hinshaw (1998) have pointed out. The present study confirms this finding. A possible explanation of this gender-specific outcome may be that boys, who are socialized to be more physical in their behaviour than girls, need more consistent monitoring, which they do not have if their mother or other main guardian suffers from depression. A depressive mother could activate the bullying behaviour of her children because her unstable mood can often lead to harsh and irrational punishment. Interestingly, she could also promote victimization tendencies, since she is unable to help the child face bullying attacks by other children. Furthermore, her neurotic daily behaviour at home contributes to the low self-esteem that the child gradually develops, which in-turn makes it vulnerable to victimization (Besag, 1989; Olweus, 1980). Again, the direction of influence remains questionable. Who is the victim? Is it the child of a depressed mother, or the mother of an aggressive child? As Patterson (1980) points out, difficult and temperamental children may elicit more punitive responses from parents, especially parents who have emotional problems of their own. Such interactions can escalate into episodes of physical punishment of the child. This in-turn may cause increased aggression by the child towards the depressed mother who ends up being even more depressed and helpless, unable to control her child's behaviour.

The present study supports some earlier findings regarding the relationship between bullying, victimization and school achievement, while contradicting some others. Specifically, no relation was found between the degree of experienced victimization and school achievement. This is in line with the reservations expressed by Toblin, Schwartz, Gorman, and Abou-Ezzeddine (2005) regarding this issue and it questions Baldry and Farrington's (2000) results. However, in contrast to Woodsa and Wolke (2004), this study has found that bullying behaviour and school achievement are negatively related at a statistically significant level. A possible explanation of this may be that victimization experiences at school, especially mild ones as the case in the present study, may hurt the child emotionally, but do not block the child from studying, and therefore, his or her performance in class is not seriously damaged. Actually, high achievement could be a reason for setting a child apart and target him or her for victimization. The inconclusiveness and the confusion in the relevant literature regarding the relation between school achievement and victimization may be related to the researchers' failure to specify the child's role in the coercive chains. It has been shown, for example, that bullies and aggressive victims (bully-victims) have low achievement, while passive victims have high achievement (Austin & Joseph, 1996; Patterson, 1986; Wolke, Woods, Bloomfield, & Karstadt, 2000).

This study adds to the literature on the family parameters of bullying and victimization experiences at school by proposing a theoretical model that encompasses several types of maternal behaviour, and by empirically testing the robustness of this model. The assessment of fitness of the hypothesized *a priori* model to the data was based on confirmatory factor analysis, which is part of a more general class of approaches called structural equation modelling. Confirmatory factor analysis is used to test measurement models in which observed variables define latent constructs or latent variables (McDonald, 1985). Overall, the result of the present analysis is that the tested model had an excellent fit. This indicates that:

(a)   The factor loadings reflect the relations between the particular indicators and the corresponding latent constructs; and

(b)   The hypothesized data-based model can adequately explain the structure of maternal behaviour and child bullying and victimization experience at school.

The above model could be useful to educators, school psychologists and social workers dealing with aggressive behaviour among peers. These practitioners could improve the effectiveness of their intervention strategies by including parents in the whole effort. Parents need to be educated and informed about bullying and victimization problems. They need to know the signs of these problems and learn ways of communicating with their children about related difficulties that they may be experiencing at school (Craig *et al.*, 1998; Patterson, 1980). They also need to be trained on how to terminate aggressive episodes between children at home (Loeber & Tengs, 1986). In addition to being recipients of training, parents could also be partners in the whole effort of eliminating bullying at school since the phenomenon has its roots at home.
 Two notes for caution are due at this point:

(1)   Only a small percentage of the participants could be characterized as bullies or victims according to the criteria specified in the literature (Besag, 1989; Olweus, 1993). Most of them belong to the general population of typical students who have been confronted with mild forms of aggression at school. Therefore, different interrelations among the relevant factors could have been found if the sample consisted only of extreme cases. The aim of this study was not to examine the behaviour of a clinical subgroup of students who engage in serious aggressive acts. Rather, this study addressed the phenomenon of school aggression as a continuum, not as a bipolar construct (aggressive–non-aggressive).
(2)   Correlation does not imply causation. Even though a structural equation modelling procedure allows the researcher to determine the direction of the existing influence between two factors, it is still incorrect to talk about cause and effect relationships. In other words, we cannot claim that a depressive mother, for example, is the reason why her child suffers victimization or exhibits bullying behaviour at school. Rather, we could say that the existence of a depressive mother at home and the daily interaction with her unstable mood is one of the factors that increase her child's chances of experiencing aggression, either as a bully or as a victim.

The current trend is to conceptualize parenting as a joint accomplishment between parents and their children (Snyder *et al.*, 2005). Children are active contributors to interactions with their parents. Even though parents have the power to enforce compliance in children, differences in children's behaviour can lead to differences in parental responses (Bell & Harper, 1977). However, it is difficult to capture in empirical research the means by which parents and children co-construct their relationship (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000). More longitudinal studies are needed in order to clarify the possible cause-and-effect relationships existing between these factors.

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