The Role of Basic Psychological Needs in Bullying Victimization in the Family and at School

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Abstract

Bullying continuously attracts the interest of school communities, government policies and researchers. The present study enquires into the role of basic psychological needs in perpetrating and victimisation behaviour of children and youth in the social contexts of school and family in a cross-sectional research design. Specifically, this study focuses on the direct effects that basic psychological needs might have on bullying behaviour and bullying victimisation. It was found that basic psychological needs, forged in the relationships with family and school members, could predict bullying victimisation in each social context. Bullying perpetrations could be predicted only by bullying victimisation stemming from each social context, whereas bullying behaviours in school could also be directly predicted by the basic psychological needs developed in family. Furthermore, path models verified the multiple influences of family functioning on school relationships. Findings of the present study may contribute to designing effective school interventions and to reforming anti-bullying guidelines for teachers and parents with respect to the basic psychological needs of the children or adolescents who have been victimised.

Review of literature

Bullying is a specific phenomenon leading to victimisation, which has attracted the interest of school communities and researchers in the last decades due to its high prevalence all over the world, and the numerous detrimental, long-lasting effects it has on physical and mental well-being, on social relationships, and on the overall school functioning (e.g., OECD, 2017; Li, Chen, & Li, 2020; Reijntjes, Kamphuis, Prinzie, & Telch, 2010). According to the prevailing definition, school bullying refers to forms of repetitive harmful conduct aimed at a student's physical, emotional, social or other types of harm (Olweus, 2013; Gladden, Vivolo-Kantor, Hamburger, & Lumpkin, 2014). Thus, a student is exposed to unwanted aggressive behaviours, which are intended, repeated or highly likely to be repeated, while there is also an imbalance of power between the student who has been victimised and the perpetrator or group of perpetrators. Usually, students suffer this kind of aggressive behaviour in front of other people, known as bystanders, who play multiple key roles depending on their motivational sets (Gairín Sallán, Armengol Asparó, & Silva García, 2013; Olweus & Limber, 2010). Under these circumstances, it is difficult for the student subjected to victimisation to defend him/herself effectively, and thus, bullying victimisation is being established.

While this definition was firstly conceived for the school context, it was subsequently adopted by researchers who studied the family context. For example, Menesini, Camodeca, and Nocentini (2010) argued that many types of siblings' aggressive behaviours present conceptual similarities to core principles of bullying, namely, to form, intentionality, persistency, and imbalance of power. Wolke, Tippett, and Dantchev (2015) define sibling bullying in congruence with peer bullying, while they exclude occasional aggressive acts, sibling rivalry and extreme criminal acts. In this context, many negative parental behaviours can also be classified as bullying, as long as the criteria for this specific form of aggression are being met (e.g., deLara, 2020).

In the course of personal development, students who engage in bullying may interchangeably shift between several roles (Espelage, Rao, & Craven, 2012). However, changing roles depends a lot on several epidemiological (e.g., sex), psychological (e.g., externalizing behaviours), and contextual variables (e.g., cyber-bullying); therefore, the direction of these role shifts is hard to predict (Foshee et al., 2016; Eden, Heiman, & Olenik-Shemesh, 2014; Marsh, Morin, Parker, & Kaur, 2014, p. 99). Yet, most studies report a general tendency of "victims" becoming "bullies", termed "bully-victims" (Lazuras, Barkoukis, & Tsorbatzoudis, 2017; Montero-Carretero, Barbado, & Cervelló, 2020). It is worth noting that "victims", "bullies", "bully-victims" and "bystanders" present distinct psychological profiles (Seixas, Coelho, & Nicolas-Fischer, 2013).

A large body of literature shows how student's core psychological constructs are being affected by exposure to bullying behaviours (e.g., Leeuwis, Koot, Creemers, & Van Lier, 2015) and how these constructs influence new behaviours. For example, some empirical findings shed light on the victims' role by identifying alienation and avoidance behaviours, which actually weaken victims even further (Reijntjes et al., 2010; Smith, Talamelli, Cowie, Naylor, & Chauhan, 2004). Youths who have been subjected to victimisation and youths representing "bully-victims" are prone to internalization problems, cognitive appraisal issues, reactive aggression, deficient social competence, and low peer status (Hubbard et al., 2002). Most young people who have been the object of victimisation tend to internalize the problem of bullying by expressing guilt, embarrassment, anxiety, depression, self-harm, and somatization (Smith et al., 2004). To continue, young people who have been victimised may resort to non adaptive behaviours like struggling for security or attention at all costs (Fox & Boulton, 2005). Presumably, young people who have experienced victimisation have to cope with conflicts among their psychological needs, especially with those involving autonomy and relatedness, more so if they live in environments exhibiting lack of support, conditional

regard, excessive control and introjections (Fousiani, Dimitropoulou, Michaelides, & Van Petegem, 2016). A frustrated need for competence may also be a part of such conflicts, or at least restrain young people who have been subjected to victimisation from standing up to bullying. As a matter of fact, growing persons confronted with challenges like learning difficulties, weight stigma, neurodevelopmental disabilities, and low socioeconomic status, have increased probability of getting bullied (Andreou, Didaskalou, & Vlachou, 2013; Juvonen, Lessard, Schacter, & Suchilt, 2017; Tippett & Wolke, 2014; Törn et al., 2015).

That being so, children and adolescents regulate their behaviour each time in several ways, when involved in bullying victimisation. For instance, it has been observed that adolescents with autonomy-supportive parents, who satisfy their children's psychological needs, build and maintain good relations with people around them, and neither endanger their real self by engaging in cyber-bullying, nor sacrifice their own needs to gain approval (Fousiani et al., 2016; Lereya, Samara, & Wolke, 2013; Ryan, Deci, & Vasteenkiste, 2016). In a like manner, it has been established that teachers who establish an autonomy-oriented and a needs supportive classroom environment[1] can reduce incidents of bullying (Hein, Koka, & Hagger, 2015; Jang, Reeve, Song, & Cheon, 2020; Montero-Carretero et al., 2020).

These findings highlight the importance of the Basic Psychological Needs Theory (BPNT), which represents one of the six mini integral theories composing Self-Determination Theory (SDT, see Ryan & Deci, 2008). In accordance to SDT, humans have innate growth

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[1] An autonomy supportive style is rather a distinct notion from enhancing psychological needs (Montero-Carretero et al., 2020; Pomerantz, Sin-Sze, & Qin, 2019, p. 342), as it represents a more basic and wider set of supporting behaviours. Still, autonomy supportive and need-supportive strategies are actually interlinked in both the theoretical and the empirical framework of SDT (Jang & Reeve, 2021; Soenens, Vansteenkiste, Van Petegem, Beyers, & Ryan, 2018; Stroet, Opdenakker, & Minnaert, 2020). To our knowledge, there are no studies comparing autonomy supportive with need-supportive practices in relation to bullying/victimization.

forces, which are manifested through a complex and self-organized conglomerate of psychological entities. Basic Psychological Needs (PBNs) comprise an overarching function, as they tend to unify all the psychological entities proposed by SDT (e.g., Brenning, Soenens, Vansteenkiste, De Clercq, & Antrop, 2021; Soenens et al. 2018; Vansteenkiste, Ryan & Soenens, 2020). Currently, BPNT recognizes three basic human psychological needs, namely autonomy (the need to feel a causal agent who acts in accordance to his/her integrated self), competence (the need to experience mastery in whatever he/she does), and relatedness (the need to bond with other humans in a mutual way). In particular, the satisfaction of these innate human needs by socials contexts is considered necessary for personal growth, well-being and integrity (Ryan & Deci, 2017).

While focusing on the relationships between BPNs and bullying, BPNT predicts that engaging in bullying is connected to thwarted relationships and frustrated BPNs (Legate, DeHaan, Weinstein, & Ryan, 2013). Thus, forms of aggression, bullying, stigmatization, rejection, and victimisation may constitute antecedents as well as consequences of thwarted BPNs (Menéndez Santurio, Fernández-Río, Cecchini Estrada, & González-Víllora, 2020; Ryan & Deci, 2017). That is, human psychological needs are not only experiential nutrients for growth, wellness, and integrity, but they also involve dynamic and striving functions, significantly affecting behaviour (Chen et al., 2015). In particular, frustrated BPNs are connected to dysfunctional behavioural patterns (Costa, Ntoumanis, & Bartholomew, 2015), which is expected in bullying behaviour and bullying victimisation. More specifically, defensiveness in conjunction with introjects and sensitivities may lead to lack of clear action plans against bullying (Ryan et al., 2016). An emerging body of longitudinal research delivers further evidence about the direct effects of BPNs on prosocial and antisocial behaviours (e.g., Tian, Zhang, & Huebner, 2018). Though, at the present time, most of the research conducted on the striving functions of the BPNs refers to their mediation between

bullying and other factors, such as empathy, trait self-determination, and teaching or parenting styles (e.g., Fousiani et al., 2016; Hein et al., 2015; Montero-Carretero et al., 2020). Besides, most studies assess broad internalizing and externalizing behaviours, rather than examining the specific behaviours around bullying (e.g., Brenning et al., 2020).

In this outline, BPNT maintains that people who have been subjected to victimisation may have experienced significant need frustration prior to bullying emergence, which rendered them susceptible to victimisation, as they prefer to be alienated and defensive in their daily social interactions (Hodgins et al., 2010). This assumption originates from a BPNT's point of view, namely that humans indeed strive for needs satisfaction, but they may develop maladaptive motivational sets after experiencing continuous needs frustration (Ryan & Deci, 2017). In sum, BPNs demonstrate several consequences at the cognitive, affective and behavioural levels, as they interact decisively with other psychological constructs (Montero-Carretero et al., 2020). Hence, BPNs can be viewed as precursors of self-determined motivations.

In terms of the BPNT, human innate needs are interconnected across contexts (Ryan & Deci, 2017), in the present case, across home and school. However, a direct proof for the association between BPNs in school and at home is missing, since empirical research on BPNs in different life domains regarding the same persons (within subject designs) are infrequent (Tian et al., 2018). Several studies deliver evidence about negative parental styles being related to needs frustration, which in turn is connected to school adaptation problems and to a diminished psychosocial functioning (Ahmad, Vansteenkiste, & Soenens, 2013; Filippello, Sorrenti, Buzzai, & Costa, 2015; Moltafet, Firoozabadi, & Pour-Raisi, 2018; Rohinsa, Cahyadi, Djunaidi, & Zulrizka Iskandar, 2020). Even so, caution is required about establishing causal links between early BPNs frustration and subsequent functioning, because

students may profit from other life domains too, such as the school environment (Pomerantz et al., 2019, p. 344-345).

As to the role of home, high prevalence rates of sibling bullying support the idea that perpetration and victimisation begin in family life (Wolke et al., 2015). Findings suggest that siblings engaged in persistent conflicts and bullying victimisation are at increased risk of becoming peer victims (Faith, Elledge, Newgent, & Cavell, 2015; Foody, Samara, & O'Higgins, 2020). As a matter of fact, bullying victimisation in more than one field has been observed to have multiple implications for a vast array of mental and social health indicators, both for children and adolescents (e.g., Wolke et al., 2015). Additionally, early suboptimal family functioning and need-thwarting parenting styles relate to the emergence of both internalizing and externalizing problems (Fousiani et al., 2016; Rigby, 2013; Vansteenkiste et al., 2020). In particular, needs frustration at home lead to anger, hostility, aggression and antisocial behaviours in preadolescents (Kader & Roman, 2018). Later on, intimidating behaviours in school may increase when parents are unwilling to show any interest in their child's school and social life (e.g., Fosco, Stormshak, Dishion, & Winter, 2012; Papanikolaou, Chatzikosma, & Koutra, 2011). Taken altogether, family seems to be a key regulator for engaging in school bullying, as it poses the social context where early models of close relationships are formed (La Guardia, Ryan, Couchman, & Deci, 2000; Tsamparli & Halios, 2019).

The present study

According to the literature gaps pinpointed, the main objective of the present empirical effort is to investigate the relationships of BPNs, bullying and bullying victimisation in two contexts, namely in school and at home, using a theory-driven Structural Equation Model

(SEM). More specifically, BPNs are examined as perceived in relationships with specific groups of persons, because bullying is conceived as a phenomenon that affects relationships (see also Rodkin, Espelage, & Hanish, 2015).

According to the literature review, four hypotheses were formulated. The first one is that bullying victimisation may lead to bullying behaviour in each context (see paths 9 and 10 in Figure 1, which depicts the proposed SEM). Secondly, BPNs demonstrate a direct negative effect on both bullying and victimisation behaviours within each context (paths 1, 2, 6 and 7). Thirdly, relationships at home, which in our study comprise BPNs, bullying behaviours and bullying victimisation among family/home members, are expected to predict the correspondingly assessed relationships at school (paths 5, 8 and 11). Finally, further cross-contextual influences are possible, while extending to the family's dominant role. In this case, BPNs at home may negatively influence bullying behaviours and bullying victimisation in school (paths 3 and 4).

[Insert fig 1 here]

Method

Participants

For the purpose of the present study, a large and diverse, sample was incorporated, which included upper elementary (fifth and sixth grade), junior high school (first to third grade) and senior high school (first grade) students, covering modal ages from 11 to 16 years. However, an effort has been made to develop a well-balanced sample with regard to the characteristics of the region. A non random sampling method, that is convenience sampling, was used by

approaching school units. Participants were students from the prefecture of Thessaloniki, a region of about 1,110,000 residents. The major part of the population is allocated into city clusters. The European Union classifies it as an intermediate region; yet, under the new typology it is classified as more urban, compared to the old typology (Regional statistics team, 2013). To calculate the sample size over an a priori chi-square based power analysis concerning goodness of fit, the 3.1.9.7 edition of the G*Power software was used (Faul, Erdfelder, Lang, & Buchner, 2007). Upon a .01 α error probability, a power of .95, a medium effect size (.03) and 21 degrees of freedom (see measures section) the required total sample size resulted in 439 participants (cf. Yang & Kim, 2017). Actually, more students than the suggested number were recruited, due to the anticipated non-response. Eventually, five hundred and thirty two students of mean age 13.18 (SD = 1.88) participated in the present study, more specifically, 265 boys and 267 girls. Most students (58.3%) live in the city centre and city clusters, while the rest of them (41.7%) in rural areas of varying density. Data were collected at the beginning of the school year, namely three months after it had started.

Measures

Demographic characteristics. Sex, age, and schools' geographical region, i.e., the origin of schools (urban or rural), were recorded for each student. In addition, data were collected on the student population of each education district and school, separately for each sex and education level. Specifically, each district's student population represents the sum of students of each education district and education level. These data were used to calculate inverse probability of selection, which was to be used to support path analyses and balance unequal probabilities of student selection.

Basic Psychological Needs in Relationships. The tool used to assess students' BPNs was the "Basic Psychological Needs in Relationships" questionnaire (La Guardia et al., 2000), which focuses on close social relations and refers to the satisfaction and frustration of the needs for autonomy, competence, and relatedness. With regard to school, the introductory sentence "When I am with my teachers and classmates ..." was used to underline student relationships in the classroom and the organized school activities; with respect to family, the sentence "When I'm with my family members ..." was introduced putting an emphasis on family life. Students responded on a 7-point questionnaire scale. The questionnaire was translated and back-translated (e.g., Fountoulakis et al., 2006). Wording was simplified; the expression "closeness and intimacy" was rendered into "emotional warmth", while the word "distance" was interpreted as "coldness". An example question for assessing relatedness satisfaction was: "When I'm with ..., I feel loved and cared about." An example item of competence satisfaction was: "When I'm with ..., I feel very capable and effective.", whereas an example question of autonomy satisfaction was: "When I'm with ..., I feel free to be who I am." Basic psychological needs have been successfully tested in Greek before (e.g., Mouratidis, Barkoukis, & Tsorbatzoudis, 2015). Each of the two BPNs in Relationships questionnaires comprises nine items. While assessing the two life domains the items are 18 in total. There are three items for each BPN. Three items, one per PBN for each context, measure needs frustration and need recoding before computing the scale average. High values represent high satisfaction combined with low frustration. BPNs in Relationships were then calculated for each context representing the average of all three BPNs. Basic psychometric properties are reported in the results section. The presentation of any invariance result goes beyond the scope of the present paper.

Bullying behaviour and bullying victimisation. For the purposes of the present study, behaviours around bullying and victimisation were assessed by means of four general single-

item measures in total covering a) victimisation through family members or relatives who consistently live at home and are considered family (How often did a family/home member harassed you over the past two months?, Dantchev & Wolke, 2019), b) victimisation through classmates or peers (How often did a kid or a group of kids harassed you over the past two months?, Kyriakides, Kaloyirou, & Lindsay, 2006), c) bullying towards family/home members (How often did you harass a family/home member over the past two months?, Dantchev & Wolke, 2019), and d) bullying towards classmates or peers (How often did you – alone or with others– harass a kid or a group of kids over the past two months?, Kyriakides et al., 2006). There was no limitation to the items formulation, concerning location or means – i.e., in person or by electronic means– of bullying victimisation (Lazuras et al., 2017). The students answered by describing their experience during the last two months in a 5-point frequency scale (1 = *never*, 2 = *only once or twice*, 3 = *2 or 3 times a month*, 4 = *once a week*, and 5 = *several times a week*). We opted for general single-items to measure bullying victimisation and perpetration, because they are suitable for assessing the frequency of occurrence (Bear, Mantz, Glutting, Yang, & Boyer, 2015), b) they have viable psychometric properties, e.g., good concurrent validity and strong correlations with peer ratings (Shaw, Dooley, Cross, Zubrick, & Waters, 2013; Olweus, 2013), c) they can reduce age and sex biases observed in the various forms of bullying (Olweus, 2010) and d) Greek students are familiar with bullying issues due to actions of the Ministry of Education (Artinopoulou, et al., 2016; see also procedure section). However, it is important to underscore that using single-items in bullying research is connected to both advantages and disadvantages (for an extensive discussion see Catone et al., 2019).

Procedure

After the purpose of the questionnaire was explained to the students, reference was made to the definition of bullying and the forms of bullying victimisation (Vaillancourt et al., 2010). Then, the concept of the dominant verb used in Greek was highlighted (cf. Kyriakides et al., 2006). It is the verb "*enohlo*" (back translation in English: harass), which, in this context, means "I deliberately make someone feel uncomfortable or uneasy, i.e., I cause feelings of distress, discomfort, sadness, or discontentment". Students were given the opportunity to ask for clarifications on this subject.

Ethics

The study was conducted in agreement with the ethical standards of research with human subjects of the University of Macedonia. The research protocol was approved by the school district authority and informed consent was obtained from the parents of each subject, after the purpose of the protocol was explained to them. In any case, schools and students were free to decide, if they will participate or not.

Statistical analyses

In addition to basic analyses, such as descriptive statistics and correlations (SPSS, cf. IBM Corp., 2011), the structural validity of the questionnaires was checked by means of Confirmatory Factor Analyses (LISREL, Jöreskog & Sörbom, 2017). First, all ordinal and continuous variables were normalized. Then, those cases considered as multivariate outliers (N = 32) in any of the measurements were removed from the original sample of the 564 children and adolescents. Factor values, which are latent variables, were calculated through

LISREL software (LISREL returns Z-standardized values according to the confirmed structural models). For example, the sum of the basic psychological needs in each domain was calculated after it was posed as a second order factor. Subsequent path analytical models were tested on the basis of these calculated factors. In LISREL analyses, Robust Maximum Likelihood (RML) Method and completely standardized solutions were used (Jöreskog, Olsson, & Wallentin, 2016). RML method represents an attempt to handle multivariate non-normality. Complex Survey Design, i.e., weighting values with the inverse probability of student selection, was needed only as an auxiliary method to confirm factor models in the district subgroups of the sample. The criteria for evaluating fit indices were derived from Schermelleh-Engel, Moosbrugger, and Müller (2003).

Results

As far as the quality of instruments is concerned, data showed a good fit to the Basic Psychological Needs in Relationships model, both for the family (χ^2 (19) = 25.491, p = .145, χ^2/df = 1.365, *NFI* = .983, *NNFI* = .992, *CFI* = .996, *SRMR* = .024, *RMSEA* = .025, *CI* 90% = .0, .049) and for the school domains (χ^2 (21) = 32.432, p = .053, χ^2/df = 1.544, *NFI* = .979, *NNFI* = .987, *CFI* = .993, *SRMR* = .023, *RMSEA* = .032, *CI* 90% = .0, .058). In both family and school, the multivariate normality of the data could not be secured (χ^2 = 4313.009, p < .001 and χ^2 = 511.046, p < .001). Factor loadings varied from .34 to .83 for the family domain and from .32 to .86 for the school domain. Low factor loadings belonged to the frustration items. In both analyzed domains, cross-correlations among the primary items were weak to moderate; LISREL did not make any suggestions for adding error covariance among variables, implying independence of errors. Internal consistencies were good (Cronbach's Alpha was .80 for the family context and .83 for the school context).

According to all chi-square tests performed, students were quite evenly distributed in the sample with regard to sex, age group, and school's region. Table 1 illustrates the bivariate correlations among the Z-standardized values of the variables used in the path model. A moderate positive statistically significant correlation occurred between the two BPNs in Relationships stemming from school and home. The same phenomenon was observed in the correlation between bullying behaviour and bullying victimisation within the home context. A low positive statistically significant correlation was found between bullying behaviour across the two investigated contexts. Most of the rest correlations, although statistically significant, were classified as negligible.

[Insert fig 2 here]

Figure 2 depicts the modified path model, which held a good data fit (χ^2 (7) = 7.169, p = .421, χ^2/df = 1.024, NFI = .985, $NNFI$ = .999, CFI = 1.000, $SRMR$ = .028, $RMSEA$ = .007, CI 90% = .0, .054). All parameters, as well as direct and indirect paths, were statistically significant at the .01 level. That said, statistically significant indirect paths were revealed that signify an influence of BPNs at home on bullying at home and victimisation in school. The multivariate normality of the data could not be secured (χ^2 = 899.007, p < .001). The modified model contained fewer paths than the proposed model; absent paths were not statistically significant and thus they did not participate in the statistical analysis. Still, the confirmed model provides sufficient evidence for the influence of the family domain, which was reflected in the case of the BPNs in Relationships, bullying behaviour, and bulling victimisation. In addition, it was found that bullying victimisation is a precursor for bullying behaviour within each social context. BPNs in Relationships were able to directly predict

bullying victimisation, but not bullying behaviour. Solely, BPNs in family relationships showed a statistically significant path to perpetrator behaviours in school.

Discussion

The present study focused on the perpetration and victimisation parts of bullying and tried to elucidate how the striving functions of BPNs in Relationships work within this phenomenon in two distinct social contexts concurrently, namely, in school and at home. Certain gaps in the literature were addressed via the objectives of the present study. The first and the second hypotheses relied on a solid literature basis and have been frequently examined in previous studies. The third and the fourth hypotheses were not extensively examined in the past.

The first hypothesis (bullying victimisation may lead to bullying behaviour) was confirmed for both contexts (Duggins, Kuperminc, Henrich, Smalls-Glover, & Perilla, 2016; Montero-Carretero et al., 2020). There is previous evidence suggesting that domestic victimisation may open the way to intimidating behaviours within the family (Desir & Karatekin, 2018). Thus, according to these findings families screened positively for domestic violence should receive early secondary prevention initiatives. However, in the present study it was not possible to assess if bullying and victimisation stemmed from adults or siblings. For the first hypothesis, there was no previous indication for meaningful paths between bullying victimisation from one context to bullying behaviour of another context, nor did the data support such a path. In the same way, bullying behaviour from one context could not influence bullying victimisation in another context.

The second hypothesis (BPNs have a direct effect on both perpetration and victimisation behaviours in each context) was partially confirmed for both contexts, that is,

only the paths from BPNs to bullying victimisation were verified. So, the BPNs' immediate striving functions (Tian et al., 2018) could be validated only for the victimisation part. Additionally, BPNs' in relationships at home affected perpetration behaviours at home only indirectly. As a consequence, results support prior research establishing the importance of BPNs in forging daily relationships (e.g., Jang et al., 2020; Montero-Carretero et al., 2020). In fact, human beings are proactive, meaning that they build anticipatory beliefs, while they process new social experiences (Ryan & Deci, 2017). More specifically, thwarted BPNs can reduce the possibility of children and adolescents to adaptively cope with bullying. However, statistical results, i.e., small loadings, illustrated the need of a further psychological construct, which a) would be influenced by the BPNs and b) could reveal the proximate causes of bullying victimisation. BPNs could not prognosticate perpetrating behaviours in a direct way within each context. According to BPNT (Ryan & Deci, 2017) aggressive reactions may be generated due to frustrated BPNs. A possible reason for not establishing this link is that in our study BPNs in Relationships encapsulated satisfaction and frustration in one measure. Moreover, the analogy of satisfaction and frustration items was three to one. Another plausible explanation may be that perpetrating behaviour is controlled by personality factors too (Del Rey et al., 2015).

Regarding the third hypothesis, BPNs in relationships, bullying behaviours, and bullying victimisation among home members had strong influences on the equivalent relationship variables at school (e.g., Wolke et al., 2015). In the case of BPNs, family shapes early patterns of internalizing prosocial and other positive values, as well as of adopting mutuality in satisfying psychological needs, while children adopt such patterns in other life domains (Ryan & Deci, 2017, pp. 414). As far as victimisation is concerned, exposure to parents' violence is held responsible for the connection between family and school, signifying that early poor relationship and behavioural models can make kids vulnerable to

peer bullying (Espelage, Low, & De La Rue, 2012). In the case of perpetration, exposure to violence by any family member underlines that early socialization processes at home may determine intimidation in the school domain (Low & Espelage, 2013). Briefly, the results are conforming to studies suggesting that family may be predominant over other social contexts in shaping basic relationship styles even in late childhood and early adolescence (Rigby, 2013; Tsamparli & Halios, 2019).

As to the fourth hypothesis (further specific cross-contextual influences are possible), only a significant path from BPNs in home relationships to bullying behaviours at school was proved, showing that accumulated family conflicts combined with frustrated psychological needs at home may lead to aggressive behaviour at school (Kader & Roman, 2018; Menéndez Santurio et al., 2020). The fact that BPNs at home could not directly predict school victimisation denotes that in this particular case the influence of the family fades out due to the role of BPNs at school (cf. Chen, Wang, Chen, & Huang, 2021; Duggins et al., 2016). According to these findings, although the context of home is very influential, there is also some distinctiveness between the two social contexts studied.

The present study has some limitations regarding the exclusive use of self-report questionnaires, its cross-sectional design, and its monocultural nature. Likewise, only single-items for assessing bullying and victimisation were used in this study, while multi-item scales could have provided greater measurement quality. In future research, it is imperative that a longitudinal research design be used, in order to establish the dynamic impact of basic psychological needs on bullying behaviours and bullying victimisation. In addition, it will be useful to assess children's pre-existing conditions like learning difficulties, disabilities, and mental health risks. Also, improved scales for assessing basic psychological needs in relationships may be used. Although the basic psychometric properties of the questionnaires were good for the modal ages from 11 to 16 years, the implementation of full questionnaires,

as well as the use of peer, sibling and other people's reports, may increase the psychometric properties of the models.

Moreover, future research may include further measures of both aggression and victimisation types (e.g., Hubbard et al., 2002; Seixas et al., 2013) in order to elucidate the complex and reciprocal nature of daily relationships between people who bully others and people who have been subjected to victimisation. In this line, variables directly reflecting daily social interactions and/or expectations, such as information processing patterns and help-seeking (e.g., Matuschka et al., 2021; Ziv, Leibovich, & Shechtman, 2013), could be appropriate for addressing the question of proximate causation.

Educational implications

Significant and theory-conform paths –both direct and indirect– found in the present study emphasize that BPNs satisfaction/frustration play an important role in the phenomenon of bullying. Furthermore, they indicate that nurturing BPNs in close relationships formed in school and at home is indispensible for diminishing bullying victimisation. Hence, psychological support delivered to students struggling with victimisation should be improved, for both the school and the family contexts, by challenging frustration and promoting satisfaction with reference to BPNs. Youths who have suffered bullying should be supported not only in the area of their basic psychological needs, but also in further elements of Self-Determination Theory, such as goal contents, self-regulations, introjects, and integrative processing of past identities (Goodboy, Martin, & Goldman, 2015; Ryan & Deci, 2017). To conclude, findings of the present study may significantly contribute to designing effective school prevention and intervention efforts. More specifically, intervention programs exceeding the school context, thus involving families too, are expected to be quite effective

(Della Cioppa, O'Neil, & Craig, 2015; Lester et al., 2017; Pennell, Campbell, & Tangen, 2020). At this point, it is necessary to highlight that our approach focuses on supporting the psychological growth and flourishing of the youths who have been victimised. Thus, besides telling an adult and receiving protection (Cantone et al., 2015), youths who have been the object of victimisation are in need of psychological support and counselling (Vansteenkiste et al., 2020). In accordance with these arguments, anti-bullying guidelines for teachers and parents need to be reformed correspondingly. A final course of action could be that school counsellors and teachers are trained accordingly.

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Figure 1

Proposed path model
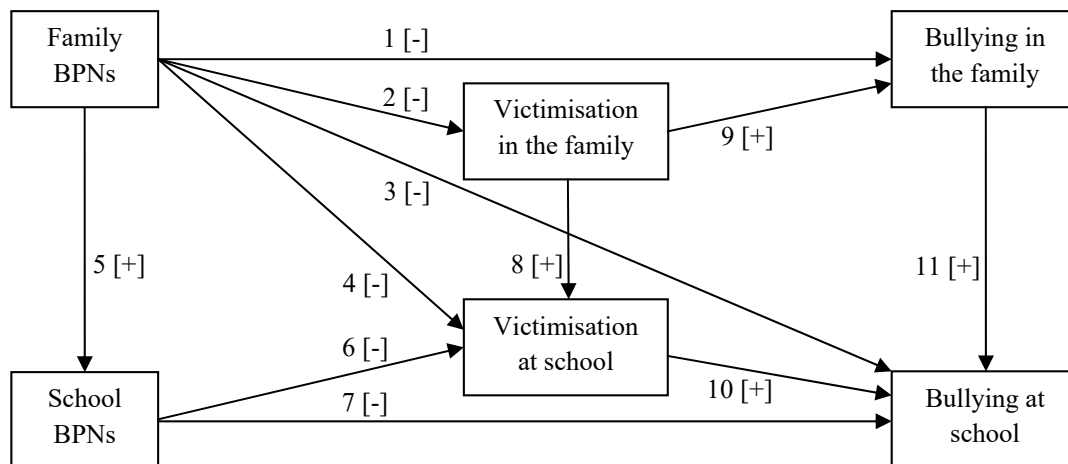
Note. Paths are numbered; signs in brackets show positive [+] or negative [-] expected influences.

Table 1

Descriptive statistics and Z-Order correlations among the variables used in the path model

	Mean	SD	Family BPNs	School BPNs	Victimisation in the family	Victimisation at school	Bullying in the family
Family BPNs	6.35	.71					
School BPNs	5.20	1.03	.50**				
Victimisation in the family	1.63	1.01	-.11**	-.06			
Victimisation at school	2.31	1.11	-.17**	-.26**	.14**		
Bullying in the family	1.52	.73	-.13**	-.09*	.54**	.15**	
Bullying at school	1.34	.56	-.18**	-.14**	.20**	.19**	.34**

Note. SD: Standard Deviation, Family/School BPNs: BPNs in Relationships in the family and at school respectively, Victimisation in/at family/school: Bullying victimisation in the family and at school respectively, Bullying in/at family/school: Bullying behaviour in the family and at school respectively, *: statistically significant at the 0.05 level, **: statistically significant at the 0.01 level.

Figure 2

Modified path model

Family BPNs → Victimisation in the family: -.11
Family BPNs → School BPNs: .50
Family BPNs → Bullying at school: -.12
Victimisation in the family → Bullying in the family: .54
Victimisation in the family → Victimisation at school: .13
Bullying in the family → Bullying at school: .31
School BPNs → Victimisation at school: -.25
Victimisation at school → Bullying at school: .12
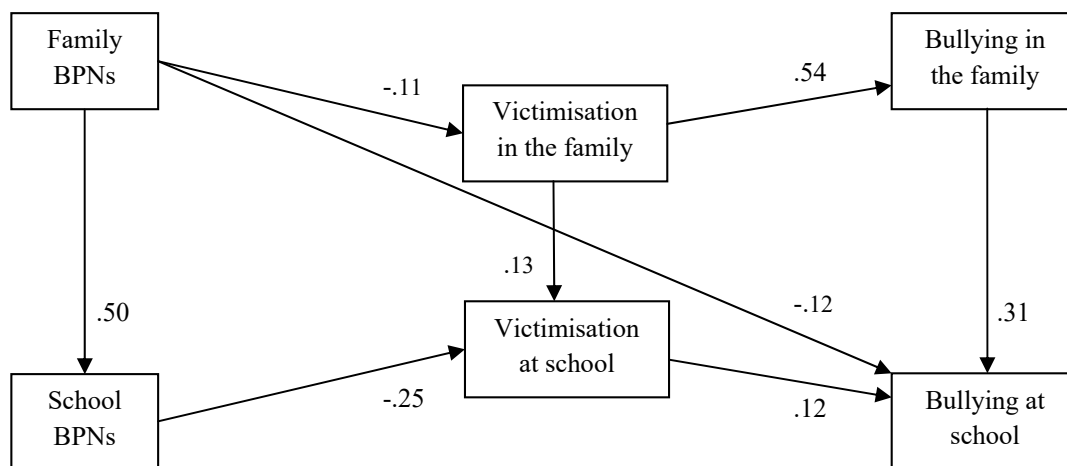
Note. Only statistically significant paths are shown.