

## Bullying and cyberbullying: Do personality profiles matter in adolescence?

Ainzara Favini<sup>a,\*</sup>, Maria Gerbino<sup>a</sup>, Concetta Pastorelli<sup>a</sup>, Antonio Zuffianò<sup>a</sup>, Carolina Lunetti<sup>a</sup>, Chiara Remondi<sup>a</sup>, Flavia Cirimele<sup>b</sup>, Maryluz Gomez Plata<sup>c</sup>, Anna Maria Giannini<sup>a</sup>

<sup>a</sup> Department of Psychology, Sapienza University of Rome, Via dei Marsi 78, Rome 00185, Italy

<sup>b</sup> Department of Cultures and Societies, University of Palermo, Italy

<sup>c</sup> Department of Psychology, Universidad del Magdalena, Santa Marta, Colombia

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### ABSTRACT

Bullying and cyberbullying represent pervasive issues in adolescence because they are very common situations with significant implications for concurrent and later adjustment. It is crucial to investigate the extent to which youths' personality characteristics may represent a vulnerability to becoming (cyber)bullies or (cyber)victims. However, research mostly has focused on associations with single personality dimensions rather than overall functioning patterns, studies on personality profiles in relation to bullying are limited and under-examined, and no evidence for cyberbullying is available. Within Latent Profile Analysis (i.e., LPA), the present study aimed to identify personality profiles in a sample of 426 Italian early adolescents ( $M_{age} = 12$ ; 51 % female), according to the Big Five Model (i.e., Extraversion-E, Agreeableness-A, Conscientiousness-C, Emotional Stability-ES, Openness-O), in connection with traditional bullying and cyberbullying roles (i.e., uninvolved, victims, bullies, bullies/victims). Three profiles emerged with specific associations with (cyber)bullying roles: (1) Resilient (with high scores in all traits) which tended to be uninvolved; (2) Undercontrolled (with low C, average-to-high E, and average-to-low ES, and O), which was more likely to be both bullies and victims, both offline and online; and (3) Overcontrolled (with very low E, average C, and average-to-low ES and O), which was more likely to be associated with traditional (but not online) victimization. The results fill a research gap, demonstrating that specific youths' personality configurations may be associated with different roles in traditional and online bullying.

### 1. Introduction

Bullying and cyberbullying represent one of the most common experiences that youths may have during their adolescence, as well established by the newest statistics: bullying may begin as early as in primary school (e.g., [48,71]), and involve many youths. Worldwide, 19 % of girls and boys aged 10–18 years are involved at any time in a victimization or bullying situation [15,22]. In Italy, 7 % of young girls and 5 % of young boys reported that they were involved in cyberbullying or cybervictimization [24]. Despite the relevance of this topic for understanding youths' adjustment over time, to our knowledge, the literature that analyzed personality determinants of bullying and cyberbullying mostly focused on single personality traits, previous studies that considered how specific overarching personality prototypes in relation to traditional offline bullying is very limited (e.g., [17]), and there are no previous studies that specifically addressed these relations regarding cyberbullying in early adolescence. Therefore, the general aim

of this work is to take a step forward in the field of studies that investigates how personality profiles can predict the vulnerability to incur bullying/victimization, as well as cyberbullying/cybervictimization behaviors, analyzing associations and predictions of personality profiles with specific distinct roles that youths have in online and offline bullying (i.e., victims or bullies; [15,34,37]).

#### 1.1. Bullying/Victimization and cyberbullying/cybervictimization: definitions and associations with psychological well-being in youth

The study of bullying and cyberbullying is extremely relevant in the field of personality and developmental psychology because these phenomena frequently occur in childhood and adolescence and can crucially affect concurrent and later maladjustment [11,34,72]. While research on traditional bullying and victimization has steadily increased over the past 40 years, cyberbullying and cybervictimization have only recently begun to attract research attention [15,34]. Traditional

\* Corresponding author.

E-mail address: [ainzara.favini@uniroma1.it](mailto:ainzara.favini@uniroma1.it) (A. Favini).

bullying can be defined as aggressive behavior by one or more individuals towards another individual (or group of individuals), which is manifested repeatedly over time, and with an unbalanced and asymmetrical relation among involved people [4,43]. Typical “bullying” actions include acts of physical aggression (i.e., hitting, kicking), verbal aggression (i.e., yelling, mocking, threatening), relational aggression (i.e., exclusion), and indirect aggression (i.e., spreading false information or rumors) [4,11]. Cyberbullying is mostly considered a specific form of traditional “offline” bullying that shares the intentionality to damage, offend, or threaten; the repetition of action; and the power imbalance between the perpetrator and the target of the actions [35,41,69]. In this sense, it can be defined as traditional bullying acts conducted via new communication technologies, including social networks, blogs, email, and picture messaging [35,41,69]. However, considering the specificity of the context in which this form of aggression is enacted, cyberbullying is uniquely characterized by an inability to detect whether the aggression was intentional or merely reactive to an internal emotional state, the potential anonymity of the bully (which can contribute to the bully perceiving themselves as more powerful and their actions as less detrimental), the potentially larger number of witnesses to the aggressive acts, and the uncontrollable context, which allows cyberbullying to be carried out more widely than traditional bullying [50].

Research on bullying generally classifies the roles that youths may assume in these actions into four groups: youths who are not involved in bullying (i.e., uninvolved), youths who tend to be victimized (i.e., victims), youths who tend to bully others (i.e., bullies), and youths who tend to be bullies and victims at the same time (e.g., [17]). Similar roles may be identified for the online context: youths who are not involved in cyberbullying or cybervictimization phenomena (i.e., cyber-uninvolved), youths who tend to be victimized online, on social networks, or in private messages (i.e., cyber-victims), youths who tend to be aggressive, threat, or yell other people online (i.e., cyber-bullies), and youths who are pervasively involved in cyberbullying from both sides (i.e., cyber-bullies/cyber-victims; [15]). Despite this distinction, in youths’ everyday lives, these roles could co-exist and overlap in some way, such as, for example, someone who is victimized offline in their classroom, which vented online its frustration by cyberbullying someone else (e.g., [15]). Although the importance to consider that youths may assume different roles in different settings, to our knowledge, there have been no previous studies specifically focused on the potential overlaps between these two interconnected roles. Instead, most studies specifically focused on one single aspect of these phenomena, or focused on descriptive distinctions between them (e.g., [50,69]).

As previously anticipated, any involvement in traditional bullying and cyberbullying (especially during early developmental stages such as childhood and early adolescence), as either a bully or a victim, may have a strong and pervasive impact on concurrent and later maladjustment, by exacerbating or causing a variety of interpersonal, emotional, and behavioral difficulties, and thereby affecting mental health and successful development [15,34,71]. Online and offline bullies tend to manifest psychosomatic problems (e.g., sleep and/or gastrointestinal problems), emotional problems (e.g., anxiety, self-disruptive behavior, depressive symptoms), externalizing problems (e.g., delinquent behavior, conduct problems, substance use), and social and academic problems (e.g., social exclusion, withdrawal, problems in the school context, school dropout; [9,21,65]). Also, offline and online victims tend to manifest psychosomatic problems, as well as internalizing problems (e.g., depressive symptoms, self-esteem problems, anxiety, phobias, suicidal ideation), social problems (e.g., social exclusion, withdrawal, poor peer relationships, lack of social support), and academic problems (e.g., difficulty with homework, difficulty with classmates; [9,10,21,65]). Finally, the few studies that have considered youths who are both bullies and victims shown that they tend to manifest wider and more pervasive maladjustment in terms of emotional problems (e.g., emotion regulation issues), internalizing problems (e.g., depressive and anxiety symptoms, suicidal ideation, and attempts), externalizing problems (e.g.,

risky behaviors such as substance or alcohol use, vandalism, conduct problems, hyperactivity, and anti-social problems), psychosomatic disorders, and social problems (e.g., [10,36]). In comparison with offline bullies and victims, those online tend to demonstrate more internalizing problems, lower self-esteem, more behavioral problems, and more physical problems [21,65].

### 1.2. Personality characteristics, personality patterns, and their relation to youth adjustment

Personality characteristics can be defined as relatively stable patterns of individual differences that concern broader thoughts, emotions, moral beliefs and values, habits, and behaviors, which are differently elicited depending on the situation and individual perception [30]. The Big Five Model [19] represents the most widely accredited model of personality structure, organizing personality traits into five major domains: Extraversion (or Energy), Agreeableness, Conscientiousness, Neuroticism (or Emotional Stability), and Openness [12,31].

The study of how individual differences in personality influence developmental pathways throughout the lifespan is crucial for understanding why some people follow successful and adaptive trajectories while others experience negative events and maladaptive trajectories [13]. In this view, the environmental and social contexts significantly influence the relationship between personality and adjustment, especially in early development [13]. Thus, exposure to traditional or online bullying and cyberbullying can be a significant and critical environmental situation that may exacerbate or predict the development of emotional and behavioral problems [35,36]. These considerations tap into the field of developmental psychopathology, which underlines the crucial role of personality and environmental stimuli in predicting adjustment (i.e., mental health) over time [54]. In particular, the Vulnerability model, also known as the “predisposition” model, postulates that specific personality characteristics can increase or decrease individuals’ vulnerability to specific forms of psychopathologies, while also affecting the severity and the maintenance of symptoms [13,62]. According to this view, certain typological patterns of personality may predispose individuals to bullying behavior or victimization, online and/or offline [13,62].

Within personality research, a large body of studies has investigated how personality traits can be organized into a limited number of profiles (Yin et al., 2012) This classification could be useful for understanding broader personality functioning, analyzing specific associations between each typological pattern of functioning and indicators of adjustment or maladjustment, according to a person-oriented approach [13,29]. Several scholars claimed the benefits of this approach, rather than considering a standard variable-centered one, for several reasons. To one, examining overarching personality configurations provides a more comprehensive theoretical interpretation of personality structures within sub-groups of people, as well as their distinctive associations with adaptive patterns over time (e.g., [13,23]). Second, a person-oriented consideration of individual functioning is also more economic than considering single associations between each personality trait and each adjustment indicator [6]. Considering patterns of personality indicators can also better account for individual functioning in terms of specific behaviors: for example, high levels of extraversion within an adaptive functioning predispose to open communication with others and assertive behaviors, while within a maladaptive functioning, high extraversion may reflect dominant and manipulative behaviors (e.g., [54]). Studies identified in adolescence a personality structure characterized by three or four typological profiles [3,17,54]. The three profiles structure represents the most corroborated by research, especially in children and adults, namely RUO structure, and conceived the presence of the following patterns [3,54]: The Resilient (characterized by high scores on each personality trait), an adjusted profile demonstrates adaptive psychological, emotional, self-regulative, and social characteristics; the Overcontrolled (characterized by low Extraversion and

Openness, average to low Agreeableness, and high Conscientiousness and Neuroticism), an “introverted” profile, with specific impairment in the social and relational domain, and hyper self-regulation of both emotions and behaviors, that predisposes to a specific vulnerability to internalizing problems; and the Undercontrolled (characterized by low Conscientiousness and high Neuroticism and Extraversion), a typical reckless and impulsive profile, with specific impairment in the domain of self-regulation, with high levels of activity, that predisposes especially to anti-social and risky behaviors, as well as externalizing problems. Differently, the four-profiles structure emerged especially in adolescence in the last years, and the identified four profiles partially overlap with the RUO structure [67]. This latter structure confirmed the presence of a Resilient and an Undercontrolled profile, but has identified two alternative types [17]: a Moderate (characterized by average scores on each personality trait), a “normative” profile, demonstrating adequate social skills, effective self-regulation, and an overall positive emotional experience; and a Vulnerable (characterized by low to very low scores on each personality trait), a pervasively maladjusted profile, with impairments in social, emotional and self-regulation domains, which is associated with a variety of internalizing and aggression problems.

### 1.3. Personality characteristics and patterns, and their relations to bullying/victimization and cyberbullying/cybervictimization

A growing body of research has emphasized the importance of individual factors in influencing youth susceptibility to bullying and/or cyberbullying, including differences in personality functioning (e.g., [17,60,69]). Therefore, studies have investigated the associations between Big Five personality traits and bullying or cyberbullying, analyzing the possible predictive value of specific personality traits [38, 45,49]. However, to date, most studies—especially those exploring cyberbullying and cybervictimization—have focused on the prevalence of these phenomena or their associations with single predictors or outcomes. In contrast, research investigating the relationship between individual personality patterns and bullying and cyberbullying from a person-oriented perspective is scarce [17,54].

Most studies in this area have generally explored traditional bullying and victimization, underlining that several personality traits represent protective and risk factors [38,61]. In particular, bullies tend to show low Agreeableness and high Neuroticism [33,49,61], low Openness [38], and low Conscientiousness [63,70], in accordance with their tendency to be less supportive, more manipulative, more impulsive, less empathetic, and more tolerant of violence [61,63]. Several scholars have also demonstrated a positive relationship between high Extraversion and peer aggression [38,63], especially as manifested in the high reactivity demonstrated by bullies; however, this trend has not emerged in all studies [25,28]. On the other hand, victims tend to show high Neuroticism [27,33], in some cases high Openness [38,56], and low Extraversion [25,28], in line with their tendency to be less assertive, more submissive, and more reserved. Moreover, several studies have demonstrated that, beyond their relation to bullying behaviors, low Agreeableness and low Conscientiousness may also predispose individuals to be victimized, as these traits generally manifest in lower confidence in social situations, greater introversion, and more hesitation [38,61]. In particular, the combination of high Neuroticism and low Conscientiousness may increase the likelihood of victimization [38]. Similarly, the combination of low Extraversion and high Neuroticism is coherent with the pattern of introversion, low social acceptance, and low social support that generally characterizes victims [61]. In summary, previous research has underlined that high Neuroticism is a key factor for both bullying and victimization [27,28] because it is associated with loneliness, which may predispose individuals both to withdraw (increasing their susceptibility to victimization) and to externalize their frustration (through acting out with aggression; [56]).

With respect to online bullying and its association with personality traits, research has shown that the strongest predictor of

cybervictimization is high Neuroticism [4,14,45,52,69]. Online bullies also tend to demonstrate high Agreeableness, in alignment with their greater engagement in online social networking rather than offline interactions [4,14,45], and low Openness [4,14,20]. Mixed results have been found with respect to Conscientiousness and Extraversion. Regarding Conscientiousness, several studies have shown that low scores on this trait predict cybervictimization, in line with cyber-victims’ tendency to engage in potentially risky online interactions [45,52]; however, other researchers have found that Conscientiousness predicts only traditional victimization, rather than also cybervictimization [56]. Regarding Extraversion, some studies have shown that low levels of this trait are associated with cybervictimization [57], while other studies have found the opposite trend [45,52]; furthermore, several studies have found that Extraversion is associated only with cyberbullying and not with cybervictimization [20,56]. Considering online bullies, in fact, research has demonstrated that higher Extraversion is associated with cyberbullying [63] and that these bullies tend to have high Neuroticism and low Conscientiousness [14,57] and, in some cases, also low Agreeableness [45,63]. Thus, considering online bullying and victimization, Neuroticism seems to represent the greatest risk factor [56,57], while Openness seems to represent the weakest predictor [45].

Despite the attested utility of adopting a person-centered classification of personality functioning, studies investigating the associations between personality profiles and bullying have been extremely limited, and most have focused only on traditional bullying [17,54]. Moreover, to our knowledge, no study has considered links between personality profiles and cyberbullying. To date, only one study that found four adolescents’ profiles has considered their associations with traditional bullying and victimization roles [17]. Findings showed that the Resilient type tends to be uninvolved in traditional bullying or victimization, the Moderate type does not show any significant association with bullying or victimization, and the Undercontrolled and Vulnerable types tend to be bullies/victims [17]. The relationship between the Undercontrolled and bullying and peer aggression has been previously confirmed by other research [54], which has also underlined that victims tend to show a pattern similar to that of the Undercontrolled type, with high Neuroticism and low Conscientiousness and Agreeableness [17].

### 1.4. The present study

The present study aimed to contribute to the literature on the associations between personality profiles and online and offline bullying and/or victimization.

**H1.** First, we identified personality profiles in a sample of Italian early adolescents, based on the Big Five Model (i.e., Extraversion, Agreeableness, Conscientiousness, Emotional Stability, Openness; [12]), within the Latent Profile Analysis (LPA) framework [42]. Previous research on adolescence has agreed on the identification of a structure based on three or four profiles [67], so accordingly, we expected to replicate a similar classification.

Once personality profiles were identified, we aimed to analyze whether specific roles in traditional bullying and cyberbullying were significantly associated with specific personality patterns [17,54]. For this purpose, we referred to the most widely accepted classification of bullying and cyberbullying roles, organizing the youth into four groups [15,48]: youths who were uninvolved, bullies, victims, and bullies/victims. To our knowledge, previous research that considers these groups in the relation between personality profiles and traditional bullying is scarce, and no prior research has considered these associations in cyberbullying.

**H2.** According to the literature [17,54], we expected that individuals with a well-adjusted profile (i.e., characterized by average to high scores on each personality trait) would be more likely to be uninvolved in traditional or online bullying and victimization. Similarly, individuals

with profiles showing specific impairment in self-regulation of behaviors and negative emotions (i.e., low Conscientiousness and Emotional Stability) would be more likely to engage in traditional and online bullying, and individuals with profiles characterized by impairment in sociality and openness toward others and new situations (i.e., low Openness, Agreeableness, and Extraversion) would be more likely to be victimized online and/or offline.

Lastly, to obtain a more fine-grained picture of the specific vulnerabilities that each of the emerged maladaptive profiles may have in relation to traditional or online bullying and victimization, we analyzed how each of the maladaptive personality profiles was associated with a higher or lower risk of being in each of the role-based groups (i.e., offline, or online bully/victim, offline or online victim, offline or online bully). In doing so, we compared each group with the uninvolved group as the reference for the phenomena, and each maladapted personality profile with the adaptive profile as a reference for personality functioning [17].

**H3.** We hypothesized that pervasively maladaptive profiles, with poor self-regulation, difficulty dealing with negative emotions, and poor relational skills, would be more at risk than adaptive patterns of being in the bullies/victims group, both online and offline; on the contrary, profiles showing impaired emotionality and relations would be more at risk than an adaptive pattern of being in the victims group [17].

## 2. Materials and methods

### 2.1. Participants and procedure

All participants were early adolescents who attended public junior high school in the metropolitan area of Rome, which matched the socioeconomic condition of the nation [24]. The starting sample was composed of 475 early adolescents aged 11–15 years, and outliers were preliminarily imputed following the recommendations of Spurk et al. [59], using the Mahalanobis distance. Accordingly, 49 outliers were excluded, resulting in a final sample of 426 early adolescents ( $M_{age} = 12$ ;  $SD = 0.79$ ; 51 % girls). Of these youths, most had one or more siblings (i.e., 87 % of the sample; 63 % had one sibling, 18 % had two siblings, and 4 % had three siblings), while 13 % were only children. Most of the youths lived with married or cohabiting parents (91 % of the sample; 88 % married and 3 % cohabiting), while a small percentage had divorced or separated parents (9 % of the sample; 5 % separated and 4 % divorced). Parents were 43 years old, on average (respectively,  $M_{father} = 45$ ;  $SD_{father} = 4.94$ ;  $M_{mother} = 42$ ;  $SD_{mother} = 4.60$ ). Approximately half of the parents had an upper secondary degree (46 %), while 27 % had a bachelor's or master's degree, 20 % had completed secondary education, and 7 % had been educated up to a primary level.

The project was approved by the local Institutional Review Board of the Sapienza University of Rome. Parental informed consent and the assent of the youths were obtained for each participant, prior to the data collection. Paper-pen questionnaires were administered by trained researchers in the classrooms during school hours. Each youth completed the survey autonomously, in order to guarantee confidentiality and privacy to each student, due to the sensitivity of some questions. Trained researchers provided support for any questions about the survey items.

### 2.2. Measures

#### 2.2.1. Socio-Demographic characteristics

The early adolescents' gender was coded as 1 for male and 2 for female.

#### 2.2.2. Personality traits

To assess the early adolescents' personality traits, we used the 30-item short form of the Big Five Questionnaire for Children (BFQ-C; [7]). Overall, this instrument is suitable for collecting information about

the personality traits of the Big Five Model in children and pre-adolescents aged 9–13 years. Each trait is assessed using six items, which are rated on a 5-point Likert scale ranging from 1 (*very false for me*) to 5 (*very true for me*). The psychometric properties of the instrument have been firmly established (e.g., [8]). In the present study, reliability was good (alphas ranging from 0.68 for Agreeableness to 0.82 for Openness). For more information, see Table A1 in the Supplementary Materials.

#### 2.2.3. Bullying/victimization and cyberbullying/cybervictimization

To measure bullying and victimization, we used the Florence Bullying and Victimization Scale [46]. Overall, this instrument is suitable for early and middle adolescents for collecting information on whether respondents have been recently bullied (i.e., since the beginning of the school year), and the specific type of bullying or victimization in which they have been involved. For the present study, we considered the dichotomous item "Have you ever been bullied since the beginning of the school year?" as a measure of victimization, and the dichotomous item "Since the beginning of the school year, have you participated in bullying others?" as a measure of bullying behavior. The measure was introduced by a short definition of bullying, as follows: "we say a boy or a girl is being bullied, or picked on, when another boy or girl or a group of peers say nasty and unpleasant things to him or her. It is also bullying when a young boy or girl is ignored or left alone, has rumors spread around, is hit, kicked, pushed, or threatened. These things can happen frequently, and it is difficult for the young person to defend himself or herself. It is not bullying when two boys or girls of about the same strength have an odd fight or quarrel" ([36], pp. 119–120). For cyberbullying and cybervictimization, we used the Florence Cyberbullying/Cybervictimization Scale [46]. Overall, this instrument is suitable for collecting information on whether respondents have been previously involved in cyberbullying and cybervictimization, and the specific behaviors or situations in which respondents have been involved. For the present study, we considered the dichotomous item "Have you ever been cyberbullied since the beginning of the school year?" as a measure of cybervictimization, and the dichotomous item "Have you ever cyberbullied someone since the beginning of the school year?" as a measure of cyberbullying behavior. This measure was introduced by a short definition of cyberbullying, as follows: "Cyberbullying is a new form of bullying, which involves the use of text messages, photos and videos, phone calls, and emails to attack another student" ([47], p. 113). For both online and offline bullying roles, we defined a series of dummy variables, based on each participant's response to the dichotomous items that we used. For example, the offline uninvolved group was calculated considering those who responded "no" to both items related to bullying, the offline bullies/victims group included those who responded "yes" to both items, the offline victims included those who responded "yes" to the item assessing whether the student has ever been bullied and "no" to the item assessing whether the student has ever bullied someone, and the offline bullies included those who responded "no" to the item assessing whether the student has ever been bullied, and "yes" to the item assessing whether the student has bullied someone. The same procedure was adopted for online cyberbullying/cybervictimization groups. The psychometric properties of the instrument have been previously established and its validity for early adolescent populations was demonstrated (e.g., [47]).

### 2.3. Statistical approach

To identify profiles based on the five personality traits, we tested a series of LPAs within Mplus 7.11 [40,42]. We considered factor scores for each personality trait to better refine the identification of latent classes [39]. In addition, we considered the positive pole of Neuroticism (i.e., Emotional Stability), to improve the meaningfulness of the identified solutions [6]. Therefore, we tested the 2- to the 6- class models, and compared the models according to the following criteria: (a)

information criterion indices, such as the Akaike information criterion (AIC; [2]) and the Bayesian information criterion (BIC; [55]), considering lower values indicative of better model fit; (b) several likelihood ratio tests, including the Bootstrap Likelihood Ratio Test (BLRT; [32]), the Lo-Mendel-Rubin Likelihood Ratio Test (LMR; [64]), and the Adjusted Lo-Mendel-Rubin Likelihood Ratio Test (Adj. LMR; [26]), with significant *p*-levels indicating that the compared model showed better fit than a model with a *k* – 1 classes; (c) Entropy levels (minimum 0.60; [5, 51]), with higher levels indicating better model fit; (d) the percentage of representability of each class, which should be higher than 5 % [58]; and (e) the theoretical interpretability of each profile [66].

Once personality profiles were identified, we compared the prevalence of each profile across the four bullying/victimization groups (i.e., uninvolved, bullies, victims, bullies/victims), and the four cyberbullying/cybervictimization groups (i.e., uninvolved, cyber-bullies, cyber-victims, cyber-bullies/cyber-victims), using two different *n* (Class1, Class2, Class3, ... etc., using the nominal variable that represented, for each individual, the categorical membership of their higher posterior probability of belonging to one of the *n* Classes) X 4 (four groups of bullying and cyberbullying) contingency tables with the chi-square test, and examining the adjusted standardized residuals to determine significant differences. We considered statistically significant residuals higher than |1.9|, which represents the critical value deviated from the random distribution [1].

Lastly, to clarify the likelihood that individuals with each of the identified maladaptive profiles would assume each of the bullying roles (i.e., perpetrators, bullies, bullies/victims for traditional bullying; cyber-bullies, cyber-victims, cyber-bullies/cyber-victims for cyberbullying), we ran a series of multinomial logistic regression models (MNLRs) considering the nominal categorical variable representing profile membership as a predictor of higher or lower risk of being in one of the three risky groups, operationalized in a nominal grouping variable, controlling for gender. We used a maximum likelihood with robust standard error (MLR) estimation to consider the multivariate normal distributions of the data. For the comparisons, we considered the adaptive profile and the two uninvolved groups as reference groups.

### 3. Results

Table A1 in Appendix A reports the descriptive statistics, reliability levels, and correlations among all study variables.

**Table 1**  
Model fit statistics for the latent profile analyses of the big five traits.

| Model     | –2 LL      | BIC       | AIC       | BLRT <i>p</i> | LMR <i>p</i> | Adj. LMR <i>p</i> | Entropy | Classes               |      |          |
|-----------|------------|-----------|-----------|---------------|--------------|-------------------|---------|-----------------------|------|----------|
|           |            |           |           |               |              |                   |         | <i>n</i> <sup>o</sup> | %    | <i>N</i> |
| 2 classes | –2.679.916 | 5.456.703 | 5.391.832 | < 0.0001      | < 0.0001     | < 0.0001          | .645    | 1                     | 57 % | 243      |
|           |            |           |           |               |              |                   |         | 2                     | 43 % | 183      |
| 3 classes | –2.645.063 | 5.423.325 | 5.334.127 | < 0.0001      | < 0.001      | < 0.001           | .675    | 1                     | 25 % | 105      |
|           |            |           |           |               |              |                   |         | 2                     | 35 % | 151      |
|           |            |           |           |               |              |                   |         | 3                     | 40 % | 170      |
| 4 classes | –2.632.936 | 5.435.395 | 5.321.871 | < 0.0001      | n.s.         | n.s.              | .681    | 1                     | 14 % | 59       |
|           |            |           |           |               |              |                   |         | 2                     | 34 % | 146      |
|           |            |           |           |               |              |                   |         | 3                     | 15 % | 65       |
|           |            |           |           |               |              |                   |         | 4                     | 37 % | 156      |
| 5 classes | –2.623.683 | 5.453.217 | 5.315.366 | n.s.          | n.s.         | n.s.              | .693    | 1                     | 8 %  | 36       |
|           |            |           |           |               |              |                   |         | 2                     | 11 % | 48       |
|           |            |           |           |               |              |                   |         | 3                     | 21 % | 88       |
|           |            |           |           |               |              |                   |         | 4                     | 27 % | 115      |
|           |            |           |           |               |              |                   |         | 5                     | 33 % | 139      |
| 6 classes | –2.617.666 | 5.477.510 | 5.315.332 | n.s.          | n.s.         | n.s.              | .687    | 1                     | 2 %  | 7        |
|           |            |           |           |               |              |                   |         | 2                     | 14 % | 61       |
|           |            |           |           |               |              |                   |         | 3                     | 13 % | 56       |
|           |            |           |           |               |              |                   |         | 4                     | 20 % | 87       |
|           |            |           |           |               |              |                   |         | 5                     | 21 % | 90       |
|           |            |           |           |               |              |                   |         | 6                     | 30 % | 125      |

Note. AIC = Akaike information criterion; BIC = Bayesian information criterion; BLRT = bootstrap likelihood ratio test; LMR = Lo-Mendel-Rubin likelihood ratio test; Adj. LMR = adjusted Lo-Mendel-Rubin likelihood ratio test. Significance values (*p* < .05).

### 3.1. Personality profiles

Within the LPA framework, we compared the 2- to 6-class models based on the criteria detailed in the “Statistical Approach” section, as shown in Table 1.

We rejected the 6-class solution because in this model emerged a class representing less than 5 % of the sample, the entropy level was lower than the entropy level of the 5-class solution, and the three likelihood ratio tests (LRTs) were not significant. For the same reason, we rejected the 5-class solution, because, despite showing the highest entropy level, the non-significance of the three LRTs indicated that this model did not show an improvement over the model with *k* – 1 class. Subsequently, we compared the 4- and 3-class models, but we discarded the 4-class solution because, despite the higher entropy level, two of the three Likelihood tests were not significant (i.e., the LMR and the Adj. LMR), and the characteristics of the four profiles did not theoretically match the previous findings.

Thus, we selected the 3-class solution as the model with the best fit and clearest theoretical interpretation (see Fig. 1). The 3-class model identified the following profiles: (1) a Resilient profile (40 % of the total sample), characterized by average to high levels of Extraversion, Agreeableness, Conscientiousness, and Openness, and above average Emotional Stability; (2) an Overcontrolled profile (25 % of the total sample; the least prevalent), characterized by very low Extraversion, average to low Agreeableness and Openness, and average Conscientiousness and Emotional Stability; and (3) an Undercontrolled profile (35 % of the total sample), characterized by low Conscientiousness, average to high Extraversion, and average to low Agreeableness, Emotional Stability, and Openness. With respect to the distribution of gender across profiles, the adjusted standardized residuals (chi-sq. = 15.780; *p* < .000) indicated in the Undercontrolled profile there were more boys (i.e., 43 % of early adolescent boys demonstrated this profile; adj. res. = 3.4), while in the Resilient profiles there were more girls (i.e., 49 % of early adolescent girls demonstrated this profile; adj. res. = 3.7). No significant differences in the distribution of gender were found for the Overcontrolled profile, which was equally represented by young boys and young girls (i.e., 51 % and 49 % of early adolescent boys and girls, respectively).

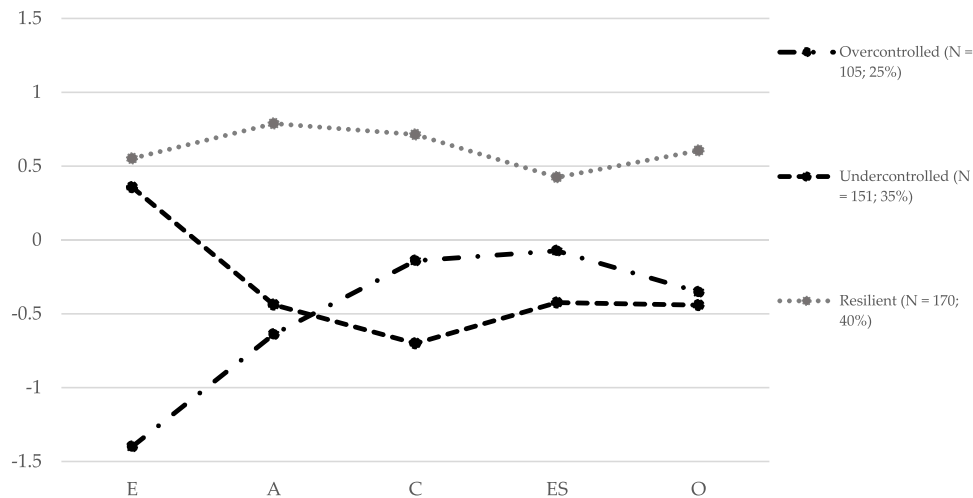


Fig. 1. Graphical representation of the personality profiles.

Note. E = Extraversion; A = Agreeableness; C = Conscientiousness; ES = Emotional Stability; O = Openness.

3.2. Personality profiles and associations with bullying/victimization and cyberbullying/cybervictimization

Table 2 reports the contingency table for the three personality profiles with respect to the four traditional bullying groups and the four cyberbullying groups.

With respect to the traditional bullying groups (Chi-sq. = 231.258;  $p < .005$ ), the Resilient profile was more likely to be uninvolved (adj. res. = 4) and less likely to be in the victims or bullies/victims' groups (respectively, adj. res. = -2.7 and adj. res. = -2.7). The Overcontrolled profile was more likely to be in the victims' group (adj. res. = 2.4) and less likely to be in the uninvolved group (adj. res. = -2.5). Lastly, the Undercontrolled profile was more likely to be in the bullies/victims' group (adj. res. = 2.6), and less likely to be in the uninvolved group (adj. res. = -1.9).

As regards the cyberbullying (chi-sq. = 13.368;  $p < .05$ ), the Resilient profile was more likely to be in the uninvolved (adj. res. = 2.6) and less likely to be in the cyber-bullies/cyber-victims' groups (adj. res. = -2.8). In contrast, the Undercontrolled profile was more likely to be in the cyber-bullies/cyber-victims' group (adj. res. = 3.2) and less likely to be in the uninvolved (adj. res. = -2.6), whereas the Overcontrolled profile did not show any significant association with any group.

For both the traditional bullying groups and the cyberbullying groups, we first tested Multinomial Logistic Regression models (MNL), in which we considered only the effect of gender as a covariate. We did not control for age because this background variable did not show any significant association with most of the groups considered (see Table A1 and Supplementary Materials). Subsequently, we added the prediction of personality profiles to the model, as reported by De Bolle and Tackett

Table 2

Contingency table of the three personality profiles with respect to the four traditional bullying groups and the four cyberbullying groups.

| Personality profile | Bullying   |         |         |                 | Cyberbullying |               |               |                             |      |
|---------------------|------------|---------|---------|-----------------|---------------|---------------|---------------|-----------------------------|------|
|                     | Uninvolved | Bullies | Victims | Bullies/Victims | Uninvolved    | Cyber-bullies | Cyber-victims | Cyber-bullies/cyber-victims |      |
| Resilient           | Obs.       | 87      | 3       | 75              | 3             | 99            | 10            | 27                          | 30   |
|                     | Exp.       | 66.9    | 3.6     | 88.4            | 9.2           | 86            | 9.5           | 28.5                        | 42   |
|                     | Adj. res.  | 4       | -0.4    | -2.7            | -2.7          | 2.6           | .2            | -0.4                        | -2.8 |
| Overcontrolled      | Obs.       | 31      | 2       | 66              | 6             | 54            | 5             | 21                          | 25   |
|                     | Exp.       | 41.8    | 2.2     | 55.2            | 5.7           | 54.4          | 6.0           | 18                          | 26.6 |
|                     | Adj. res.  | -2.5    | -0.2    | 2.4             | .1            | -0.1          | -0.5          | .9                          | -0.4 |
| Undercontrolled     | Obs.       | 50      | 4       | 81              | 14            | 64            | 9             | 24                          | 51   |
|                     | Exp.       | 59.3    | 3.2     | 78.4            | 8.1           | 76.6          | 8.5           | 25.4                        | 37.4 |
|                     | Adj. res.  | -1.9    | .6      | .5              | 2.6           | -2.6          | .2            | -0.4                        | 3.2  |

Note. Obs. = observed frequency; exp. = expected frequency by chance; adj. res. = standardized adjusted residual. Bold refers to statistically significant coefficients ( $p < .05$ ).

[17].

Boys were less at risk than girls to be in the bullies/victims' group ( $\text{exp } \beta = -0.578$ ;  $p = .004$ ; odds = 0.594), and girls were less at risk than boys to be in the victim' group ( $\text{exp } \beta = 0.008$ ;  $p < .001$ ; odds = 0.561). No significant effects were found for cyberbullying groups. When we added personality profiles as predictors, the decrease in  $BIC_s$  ( $866.063 > 818.893$ ) indicated a model improvement. The results showed that Overcontrolled youths were 5.193 times more likely ( $p = .027$ ) than Resilient youths to be at risk of being bullies/victims, and Undercontrolled youths were 7.488 times more likely ( $p = .002$ ) than Resilient youths to be at risk of being bullies/victims. In addition, Overcontrolled youths were 2.286 times more likely ( $p = .003$ ) than Resilient youths to be at risk of being victims, and Undercontrolled youths were 1.716 times more likely ( $p = .031$ ) than Resilient youths to be at risk of being victims. In the model considering cyberbullying groups, when we added the personality profiles as predictors, we again found a decrease in  $BIC_s$  ( $1096.880 > 1023.488$ ), indicating a model improvement. The results of the model showed that Undercontrolled youths were 2.494 times more likely ( $p = .002$ ) than Resilient youths to be at risk of being cyber-bullies/cyber-victims. To validate our results, in the Appendix results within the variable-centered approach are provided.

4. Discussion

The present study contributes to the literature on how different configurations of personality patterns could be differently associated with youths' susceptibility to bullying and victimization, expanding previous research [17,54]. Moreover, the work was the first to address these associations with respect to cyberbullying and cybervictimization,

in addition to traditional bullying and victimization, emphasizing the importance of considering how specific patterns of personality functioning may be associated with different levels of involvement in these types of aggressive behaviors [14,45], and thereby supporting the vulnerability model [62]. In fact, our findings highlighted specific relations between personality profiles and different roles that youths may assume in traditional and online bullying, attesting to the relevance of these phenomena for adolescents [33,47,48].

#### 4.1. Personality profiles of early adolescents

In line with a body of previous studies conducted with early adolescents that identified a three-profile structure [54,68], we confirmed the presence of these three patterns (i.e., Resilient, Undercontrolled, Overcontrolled) in our sample. Resilient early adolescents (i.e., 40 % of the total sample) showed high scores on all the personality traits considered. This profile captured an adjusted personality functioning, characterized by optimal relational skills, confidence towards others and new situations, a cooperative attitude, effective emotional and behavioral regulation, organization, optimal rigor, perseverance, problem-solving skills, curiosity, concentration, assertiveness, and adequate activity levels [3,68]. Undercontrolled early adolescents (i.e., 35 % of the total sample) were characterized by low Conscientiousness, average to low Agreeableness, Emotional Stability, and Openness, and average to high Extraversion. These youths were foolish and behaviorally dysregulated, they showed a tendency to dominate and lead others, a negative orientation towards others and others' needs, a possible lack of empathy and trust in others, and poor self-regulation. Such characteristics led these youths to be un-persevering, disorganized, indolent, impulsive, and more prone to manifest anger, frustration, and aggressive behavior [3,54]. Lastly, Overcontrolled early adolescents (i.e., 25 % of the total sample), showed very low Extraversion, low Agreeableness, average Conscientiousness, and Emotional Stability, and average to low Openness. This profile captured a withdrawn and listless nature, characterized by specific impairment in the relational domain and activity levels [3,54]. Such adolescents had sufficient self-regulation, so they could probably organize their routines and plan and anticipate the consequences of their actions; however, they were not interested in others, they did not trust others, they were unable to actively sustain a conversation, and they started difficultly new activities, and they were not interested in novel situations and events [54,68]. Overall, these results contributed to clarifying how personality characteristics can be differently associated with each other, and they may configure different patterns of functioning in Italian early adolescents [67].

#### 4.2. Bullying, cyberbullying, and personality profiles in early adolescence

In line with our hypotheses, our findings supported the vulnerability model [62], highlighting that, in early adolescence, specific personality profiles are associated with specific bullying and cyberbullying groups. The results may also represent preliminary evidence of the predictive role that specific maladaptive personality profiles could have in youths' susceptibility to traditional and online bullying and victimization.

Consistent with previous research [17,44,54], Resilient youths tended to be uninvolved in both offline and online bullying and victimization. This result could be read in light of the fact that these youths were able to adequately control their impulses, including the tendency to respond with anger in reaction to conflicts with peers, as they could flexibly regulate their needs and emotions. This, these features, together with their ability to cope efficiently, their assertiveness, and their confidence in others, could protect them from being victimized or engaging in bullying behaviors [44,61].

In line with our hypotheses, we found that Undercontrolled youths were most likely to fall into the bullies/victims' group, both online and offline. In addition, we found that, compared to Resilient youths, Undercontrolled youths were more likely to be traditional bullies/

victims and cyber-bullies/cyber-victims, and more likely to be victimized. This result is coherent with previous research underlining that youths who are involved in both traditional and online bullying and victimization tend to have low Conscientiousness and Agreeableness, together with high Neuroticism and Extraversion [17,49]. The tendency for youths with this profile to be involved in both bullying and victimization (offline and online) may be due to the fact that their difficulty responding flexibly and assertively to conflict with peers, together with their difficulty regulating emotions, impulses, and behaviors, may predispose them to victimization [49,71]. Furthermore, their high levels of Extraversion and low levels of Conscientiousness may predispose them to react aggressively when victimized, thereby acting out their negative emotions and externalizing their emotional distress, so they could be more prone to retaliate with aggression when they are provoked [44, 71]. At the same time, Undercontrolled youths, due to their tendency to dominate others and have close relationships with deviant peers [60], may be predisposed to engage in peer aggression and bullying others; this, in turn, may increase their likelihood of engaging in conflict with peers as a bully/victim, both online and offline [17,49].

In line with previous research, we found that Overcontrolled youths were most likely to be victimized offline [44,54], but not online. These youths, compared with Resilients, showed a higher risk of being in the bullies/victims group. This result only partially matched our hypothesis that an Overcontrolled functioning would be predisposed to both online and offline victimization. A potential explanation for this partial inconsistency of the findings could be that this profile may protect youths from cybervictimization. As attested by previous research, Overcontrolled youths show very limited social skills, they are unassertive and they prefer to stay alone rather than in groups because of their introversion; their difficulty starting and maintaining social relationships could make them less prone to using the internet for relational purposes, and consequently limit their likelihood of being cybervictimized [44,53]. In other words, the online context may be a social context that Overcontrolled youths avoid because they are introverted, and this may protect them from being cybervictimized. In contrast, their personality functioning, characterized by a lack of social support and interaction and difficulty controlling and modulating negative feelings and emotions, may make them less likely to find acceptance within peer groups offline; this, together with their low Extraversion and assertiveness, may make them more prone to being bullied in traditional social contexts that they cannot avoid, such as school [54,68].

Lastly, our findings did not show any specific association of any personality profile with the "pure" bullies' group, neither offline nor online, which is partly inconsistent with some previous literature, that suggests how a dysregulated personality type, such as an Undercontrolled one, could be particularly involved in aggressive behaviors toward others, and consequently, also to bully others (e.g., [44]). However, our results aligned with a previous study done by De Bolle and Tackett [17], which evidenced how the Undercontrolled was especially prone to being in the bullies/victims group. Consequently, our findings provided further evidence that the low self-regulative abilities of Undercontrolled youths, could lead to impulsive and unconscientious acts, that, combined with their emotional and behavioral reactivity, could result in a higher vulnerability to fall into a vicious circle in which they act aggressively toward others. In response, others may reply to these aggressive behaviors by engaging in bullying and threatening them, so they could fall into the bullies/victims' group (e.g., [54]).

Overall, our findings suggested the presence of associations between maladaptive personality patterns and specific roles in online and traditional bullying/victimization among youths, which, to our knowledge, have never been investigated in the Italian context, and more broadly, in adolescence. Our findings also provided further consistency of the usefulness of adopting a person-oriented approach for determining possible at-risk patterns of personality functioning which could predispose youths to increased vulnerability to incur bullying and/or

cyberbullying, rather than considering single personality traits (e.g., [17,61]), as further demonstrated by additional results provided in our appendix.

## Conclusions and future directions

The present study contributes to personality and clinical research, addressing the links between patterns of functioning and susceptibility to bullying and victimization in early adolescence, and providing preliminary evidence on associations between personality patterns and cyberbullying/cybervictimization, according to a person-centered perspective (e.g., [29,54]), and filling the gap in research on cyberbullying.

Our findings demonstrate that a person-oriented personality classification can be helpful for identifying sub-groups of early adolescents who show more probability of being vulnerable to traditional and online bullying and victimization [17,29]. This approach could facilitate the development and adaptation of prevention and intervention protocols for specific at-risk adolescents, such as Undercontrolled or Overcontrolled, emphasizing possible protective mechanisms, such as self-regulative skills and/or socio/emotional competences [17,23,69]. Previous research has underlined the importance of considering unique protective factors for the distinct but interconnected phenomena of traditional bullying and cyberbullying [37,71]. The present findings suggest that a reserved (i.e., Overcontrolled) profile may protect youths from engaging in cyberbullying but lead them more vulnerable to offline victimization. In contrast, an impulsive and dysregulated (e.g., Undercontrolled) personality profile may represent a risk factor for both online and offline bullying and victimization. Thus, preventive interventions that would benefit from this person-oriented perspective could consider how an Overcontrolled personality functioning (i.e., reserved youths, with low social skills, and very high self-regulative abilities) could represent a resource for dealing with cyberbullying, meaning that working on these components could decrease youths' probabilities of being victimized online. Similarly, if interventions would consider an Undercontrolled functioning (i.e., extraverted youths, with poor self-regulation and high sensitivity to experiences and environments) a vulnerability factor for bullying and victimization, both online and offline, this could translate in interventions better tailored to this type of functioning as the most vulnerable in clinical and developmental contexts [38,49]. Similarly, preventive interventions that focus on traditional bullying and victimization should promote relational skills, together with self-regulation [10,71]. Moreover, the identification of at-risk personality patterns (e.g., isolation/withdrawal, relational problems) could be important in the school context, so that teachers, school staff, and parents can contribute to building students' social and relational skills to decrease their susceptibility to victimization or bullying [54].

Despite these strengths, the study also had some limitations. First, the study was cross-sectional, and the findings addressed only concurrent associations between personality profiles and online and offline bullying/victimization. Thus, further research is needed to analyze the role played by personality profiles in predicting causal vulnerability to bullying/cyberbullying and victimization/cybervictimization in adolescents, over time. In addition, we only considered youths' self-reports. To obtain a more fine-grained picture of these phenomena, future research should also collect data from other informants, including teachers, peers, and parents. Additionally, future research could benefit from considering some background factors that may influence the relationship between personality and vulnerability to bullying/victimization and cyberbullying/cybervictimization, such as family factors (e.g., having a violent family context; [16]) and school factors (e.g., attending a high-risk school for anti-social and bullying behaviors).

Moreover, we considered self-reported categorical indicators of online and offline bullying behaviors, rather than more specific continuous indicators of distinctive bullying behaviors, which led to several

considerations. One, despite each measure was introduced by a short definition of the related behavior, using self-reported dichotomous indicators could increase the risk for respondent biases, such as the personal understanding of the definition of that behavior (e.g., [18]). Second, the classroom was an extremely sensitive environment in which collecting information about bullying behaviors, because students could be potentially surrounded by others who might have bullied them or been bullied by them, so this may increase the risk of the feeling of uncomfortableness for disclosing the real situation (e.g., [37,71]). Further research should analyze these issues to clarify the relationship between personality and bullying roles and consider the continuous associations between these phenomena and personality individual differences. Furthermore, the study considered a sample of normative Italian early adolescents, without considering any specific at-risk population (i.e., youths in a poor social-economic context, youths with pre-existing psychopathologies, and youths with previous experience of verbal or physical aggression). Therefore, while the sample matched the general characteristics of Italian youths, future research in Italy is needed to clarify and expand the findings. Finally, future research should explore the potential protective role played by the Overcontrolled profile in minimizing the vulnerability to cybervictimization, and verify the relationship between the Undercontrolled profile and the tendency to bully and be victimized, online and offline.

## Data availability statement

The dataset analyzed during the current study is available from the corresponding author on reasonable requests.

## Institutional review board statement

The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Institutional Review Board (or Ethics Committee) of Sapienza University of Rome (dates of approval: 16/12/2009; 10/02/2022).

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## CRedit authorship contribution statement

**Ainzara Favini:** Conceptualization, Methodology, Data curation, Formal analysis, Writing – original draft. **Maria Gerbino:** Conceptualization, Methodology, Supervision, Data curation, Formal analysis. **Concetta Pastorelli:** Conceptualization, Visualization, Supervision, Writing – original draft. **Antonio Zuffian :** Conceptualization, Methodology, Supervision, Formal analysis, Data curation, Writing – original draft. **Carolina Lunetti:** Conceptualization, Methodology, Data curation, Formal analysis, Writing – original draft. **Chiara Remondi:** Data curation, Formal analysis, Writing – review & editing. **Flavia Cirimele:** Data curation, Formal analysis, Writing – original draft. **Maryluz Gomez Plata:** Project administration, Methodology, Supervision. **Anna Maria Giannini:** Conceptualization, Supervision, Writing – original draft, Project administration, Funding acquisition.

## Declaration of Competing Interest

The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analysis, or interpretation of data; in the writing of the manuscript; or in the decision to publish the



results.

## Data availability

Data will be made available on request.

## Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.teler.2023.100108](https://doi.org/10.1016/j.teler.2023.100108).

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