

The Role of Psychological Maturity and the Big Five Personality Traits in the Victimization Through Indirect Aggression

Fabia Morales-Vives, Jorge-Manuel Dueñas, and Pere J. Ferrando
Universitat Rovira i Vigili

Abstract

Background: Peer victimization is a problem that affects adolescents worldwide. Since so few studies have been made on the relationship between maturity and indirect peer victimization, the main objective of this study was to determine if maturity provides incremental validity beyond the personality traits when predicting indirect victimization. Another objective was to test a model of how all these variables are related to depressive symptomatology and life satisfaction. **Method:** 548 high school students completed five questionnaires. We performed correlations, multiple regression analysis and structural equation analysis. **Results:** The hierarchical regression analyses show that maturity has incremental validity in predicting indirect peer victimization. Two personality traits (emotional stability and agreeableness) and two maturity factors (identity and self-reliance) were major predictors of indirect peer victimization. The hierarchical regression analyses also show that major predictors were the same for girls and boys. The Structural Equation Model tested had a good fit, which suggests that indirect victimization increases depressive symptomatology and decreases life satisfaction. **Conclusions:** The results suggest that both personality traits and psychological maturity have to be taken into account when predicting indirect peer victimization. The study also shows the emotional suffering related to this victimization.

Keywords: Peer victimization, indirect aggression, maturity, personality, depressive symptomatology.

Resumen

El Papel de la Madurez Psicológica y los Cinco Grandes Factores de Personalidad en la Victimización Mediante Agresiones Indirectas.

Antecedentes: la victimización a través de agresiones indirectas es un problema que sufren adolescentes de todo el mundo. Dado que se han realizado pocos estudios sobre la relación entre madurez y victimización indirecta, el principal objetivo del presente estudio es evaluar la validez incremental de la madurez en la predicción de la victimización, más allá de la predicha por los rasgos de personalidad. Otro objetivo es evaluar cómo se relacionan estas variables con la depresión y la satisfacción con la vida. **Método:** 548 adolescentes contestaron cinco cuestionarios. Se realizaron correlaciones, análisis de regresión y análisis de ecuaciones estructurales. **Resultados:** las regresiones jerárquicas muestran que la madurez tiene validez incremental en la predicción de la victimización indirecta. Dos rasgos de personalidad (estabilidad emocional y amabilidad) y dos factores de madurez (identidad y autonomía) son los principales predictores en ambos sexos. El modelo de ecuaciones estructurales evaluado presenta un buen ajuste, lo que sugiere que la victimización aumenta la sintomatología depresiva y disminuye la satisfacción con la vida. **Conclusiones:** tanto los rasgos de personalidad como la madurez psicológica se han de tener en cuenta para la predicción de la victimización indirecta. El estudio también muestra el sufrimiento relacionado con esta victimización.

Palabras clave: victimización, agresión indirecta, madurez, personalidad, sintomatología depresiva.

Children and adolescents who are the victims of bullying through indirect aggression (indirect peer victimization) tend to experience considerable emotional suffering, with lower levels of life satisfaction (Estévez et al., 2019) and higher levels of depressive symptomatology (Krygsman & Vaillancourt, 2018). For this reason, it is a topic of great importance at this stage of human development.

Bullying consists of repeated and intentional aggressions towards a weaker individual or group, and involves a power imbalance between the aggressor and the victim (Vanderbilt & Augustyn, 2010). Aggressors use different types of aggressive

behaviour: direct and indirect (Pistella et al., 2020). Direct aggression is committed in the presence of the target, and can be physical (hitting, threatening with weapons, etc.) or verbal (insults, intimidation, ridicule, coercion, etc.). In contrast, in indirect aggression the aggressor does not directly confront the victim. It involves a wide range of behaviours that may harm the public image of the victim and lead to social exclusion, such as spreading gossip, using nicknames, excluding victims from activities, etc. (Leenaars & Rinaldi, 2015). Digital media and social networks (Facebook, Instagram, etc.) have made it easier to harm others because aggressors have no need to reveal their identity. In fact, one of the main characteristics of cyberbullying, in comparison with traditional bullying, is that it is not a face-to-face experience (Lucas-Molina et al., 2016). For this reason, indirect aggression is particularly relevant to the study of victimization in adolescents nowadays because many victimization processes have an indirect component, specially in cyberbullying.

According to the literature, girls have higher levels of indirect aggression than boys, and they tend to use indirect aggressive behaviors to victimize their peers, mostly other girls (e.g., Björkqvist, 2018; Leenaars & Rinaldi, 2015). Although these studies show that girls are more likely to use and be the victims of indirect aggression, boys can also be the victims of indirect aggression. The study by Thomson et al. (2019) suggests that indirect aggression is related to the antisocial facet of psychopathy, but only in boys.

Salmivally (2010) stated that bullying is a group process in which individual characteristics interact with environmental factors such as classroom rules, relationships between peers, etc. The current study focuses on the role of individual differences, but it should be taken into account that contextual variables are also important. In fact, Kärnä et al. (2010) found that 87% of total variation in peer victimization was due to individual differences, and 13% was due to differences between classrooms. Therefore, some characteristics of the school context may potentiate or inhibit bullying to some extent.

Many studies show that personality is an important variable in explaining both aggressive behaviors (e.g., Mitsopoulou & Giovazolias, 2015) and vulnerability to becoming a victim (e.g., De Bolle & Tackett, 2013; Sekol & Farrington, 2016). Within the framework of the big five personality traits, lower levels of emotional stability, conscientiousness and agreeableness have been related to peer victimization (De Bolle & Tackett, 2013; Sekol & Farrington, 2016).

Psychological maturity may also be an important variable in explaining both the aggressive behaviours of perpetrators and peer victimization. However, there are much fewer studies on the relationship between maturity and aggressive behaviour or peer victimization than in the field of personality. In the current study we have taken as a reference the model of psychosocial maturity put forward by Greenberger and Sørensen (1973), specially their concept of individual adequacy. Individual adequacy is the individual's ability to function independently, controlling their own life with limited dependence on others. Mature people are characterized by greater individual adjustment, which involves a willingness to fulfil their own obligations (work orientation), a willingness to take the initiative and show autonomy without allowing others to exercise excessive control (self-reliance), and good knowledge of their own characteristics and needs (identity). According to Erikson (1968), the construction of a personal identity is one of the main challenges in adolescence, so this variable is particularly relevant at this stage of development. In fact, identity confusion is related to higher levels of depression and lower levels of life satisfaction (Morales-Vives & Dueñas, 2018), and to lower levels of emotional stability (Morales-Vives et al., 2013). Peer victimization may negatively affect the development of identity (e.g., Callaghan & Joseph, 1995; Hunter et al., 2010).

Gains in maturity lead to a progressively better control of impulses, which decreases aggressive behaviours (Monahan et al., 2009). In fact, the study by Morales-Vives et al. (2014) shows that more mature adolescents tend to have lower levels of direct and indirect aggressiveness, as they tend solve their problems with others more responsibly, without direct aggressions or behaviours that may harm people more indirectly. However, as far as we know there are no studies on whether maturity (and its components self-reliance, work orientation and identity) also plays a role in peer victimization through indirect aggression in adolescence. It

is possible that immaturity facilitates exposure to situations that involve a position of vulnerability, which potential aggressors can take advantage of. Just as personality plays a role for both offenders and victims, maturity may also play a role in both cases.

Taking all of the above into account, the main objective of this study was to determine the role of personality and psychological maturity in indirect peer victimization in adolescence. As has been mentioned, very few studies have focused on the possible role of maturity in the vulnerability to victimization through indirect aggressions, so a more specific goal of this study was to determine if maturity explains additional variance to that already explained by personality traits. We expected to find that the three factors of psychological maturity are predictors of indirect peer victimization, specially identity and work orientation, because the lack of maturity could facilitate worse decision making and expose victims to more problematic situations with the peer group (for example, sharing sensitive information on social networks). In terms of personality traits, we expected to find that lower levels of emotional stability, conscientiousness and agreeableness are related to the probability of being indirectly victimized. Although previous studies showed that girls are more likely to be the victims of indirect aggression, as we explained above, we did not expect that these sex differences would be explained by the maturity and personality factors assessed in the current study. In fact, we expected to find the same predictors of indirect peer victimization for boys and girls, even though the strength of these relations and the levels in the variables might vary in each sex. Finally, another goal of this study was to test a model of relationships between these variables and indirect victimization. This model considers the studies mentioned above and extends the predictive part to include life satisfaction and depressive symptomatology as consequences of indirect victimization. We also expected to find a bidirectional relationship between identity and peer victimization, which suggests that adolescents without a well-defined identity would be more vulnerable to indirect peer victimization, while this victimization in turn would negatively affect the development of their identity. In fact, previous studies have shown that peer victimization may negatively affect the development of identity, as we have explained above. For this reason, this bidirectional relationship was specified in the SEM.

Method

Participants

The questionnaires were administered to 588 Spanish students, but 40 participants were removed from the sample because they did not complete the questionnaires, they showed an aberrant response pattern (e.g., the same answer for all the items), or for some other reason. The final sample consisted of 548 students (54.2 % boys and 45.8% girls), all of Spanish nationality, from five high schools in Tarragona province (Spain). The schools were chosen because of ease of access, which involves convenience sampling, but also to represent a variety of centres: there were three state schools and two semi-private schools (funded partly by the state and partly by charging pupils tuition fees). Moreover, two of these schools were located in cities and the other three in country villages, so our sample was heterogeneous with students from different socioeconomic backgrounds. The participants were between 14 and 19 years old, and the mean age and standard

deviations were 15.85 and 1.57, respectively. A total of 48.9% of the participants were studying compulsory secondary education, 40.1% were studying upper secondary education, and 11.0% were studying vocational training courses.

Instruments

Indirect Aggression Scales-Target (IAS-t). We used the Spanish adaptation developed by Anguiano-Carrasco and Vigil-Colet (2011). It is a one-dimensional questionnaire consisting of ten items on a Likert scale (1 = Never, 5 = Continuously). It assesses the individual's tendency to suffer indirect aggression, understood as a kind of social manipulation that involves the social structure being used by some pupils to harm others, without being personally involved (for example, "Purposefully left me out of activities"). Participants are instructed to indicate if they have experienced these behaviours against them in the past 12 months. In our sample, the reliability estimate of the scores was $\alpha = .84$.

Overall Personality Assessment Scale (OPERAS; Vigil-Colet et al., 2013). It assesses the big five personality traits: extraversion, emotional stability, agreeableness, openness to experience, and conscientiousness. It consists of 40 content items, plus 4 additional marker items aimed at controlling social desirability, all of which are on a Likert scale (1 = Strongly disagree, 5 = Strongly agree). This questionnaire provides scores free of the response biases social desirability and acquiescence. The estimated reliabilities are: .86 for extraversion, .77 for conscientiousness, .71 for agreeableness, .86 for emotional stability, and .81 for openness to experience.

Psychological Maturity Assessment Scale (PSYMAS; Morales-Vives et al., 2013). The questionnaire assesses the psychological maturity of adolescents and consists of the subscales work-orientation (tendency to fulfil their own responsibilities and obligations), self-reliance (predisposition to take the initiative without letting others exert excessive control); and identity (knowledge that the subjects have about themselves). This questionnaire provides scores free of the response biases social desirability and acquiescence. It contains four social desirability markers and 26 content items on a Likert scale (1 = Strongly disagree, 5 = Strongly agree). The estimated reliabilities are: .82 for the overall scores, .71 for work-orientation, .78 for self-reliance and .77 for identity.

Satisfaction with Life Scale (SWLS). We used the Spanish adaptation developed by Pons et al. (2000). The questionnaire evaluates satisfaction with life, understood as the overall assessment that people make about their life based on their objectives, expectations, values and interests. It is a one-dimensional questionnaire consisting of 5 items on a Likert scale ranging from (1) strongly disagree to (5) strongly agree. The estimated reliability in our study was appropriate ($\alpha = .82$).

Beck Depression inventory (BDI). We used the Spanish adaptation developed by Sanz and Vázquez (1988). It contains 21 items. Each item consists of four sentences in order of severity, and the participants have to choose the statement that best fits their mood during the previous week. The estimated reliability of the scale scores in our sample was $\alpha = .78$.

Procedure

This project was approved by the Ethical Committee of the Faculty of Educational Sciences and Psychology of Universitat

Rovira i Virgili. The questionnaires were anonymous and participation was voluntary. The questionnaires were administered collectively during school hours, with prior authorization from the institution. Informed consent was requested from the parents of the students. We did not obtain the consent for 15% of the students, who did not participate in the study. Students were informed about the general goals of the study, and were given instructions on the proper way to answer each questionnaire. The sample was collected between October 2019 and January 2020.

Data Analysis

The first part of the study aimed to assess the relations between the potential predictor variables and vulnerability to indirect peer victimization. Overall, this part can be conceptualized as an incremental validity study in which incremental validity is assessed for substantive rather than purely applied purposes (e.g. Hunsley & Meyer, 2003). First, on the basis of the existing literature, we hypothesized that certain personality dimensions are substantial predictors of the criterion. Then we went on to assess whether dimensions of psychological maturity, particularly identity and work orientation, (a) were also non-trivial predictors and, if so, (b) whether they had incremental validity, which involve that they add information beyond that provided by the personality dimensions. In this part of the study we used bivariate correlations and hierarchical multiple regression. We first checked whether the relevant personality predictors were those expected from the literature and entered them as the first step in the hierarchical regression.

As standardized coefficients (beta weights) are context dependent and can become very unstable in the presence of substantially correlated predictors (Johnson, 2000), we used additional indexes to assess the relative importance of these predictors: Johnson's structural coefficients and relative weights (Johnson, 2000). Johnson's relative weights estimate the relative contribution each variable makes to the prediction of a dependent variable, taking into account both its individual contribution and its contribution when combined with other variables. These are presented as percentages (i.e., they are divided by R^2 and multiplied by 100).

In the second part of the study we fitted an extended structural equation model that was partly based on our hypothesis and partly on the regression results, which included the consequent variables expected to be influenced by victimization.

The missing data were replaced by the mean of the item for these analyses, because the number of missing values was very low (only 0.33%). Mean imputation may cause biased estimates when there are many missing values, but when percentages of missing values are below 5%, different imputation methods are not expected to lead to noticeable differences in the results (Lorenzo-Seva & Van Ginkel, 2016).

Statistical analyses were carried out using SPSS 26, MIMR-Raw.sps (Lorenzo-Seva et al., 2010) and Mplus v8.3. No confounders or covariate variables were controlled in any of the statistical analyses.

Results

Descriptive Statistics for the Overall Sample, Boys and Girls

Table 1 shows the means and standard deviations for boys, girls and the overall sample in each questionnaire. As can be seen,

Table 1
Mean scores for the overall sample, boys and girls on the questionnaires and effect sizes

		Overall sample	Boys	Girls	T	p	d
		Mean (SD)	Mean (SD)	Mean (SD)			
IAS-t	IA-t	15.9 (5.4)	15.5 (5.2)	16.5 (5.5)	$t_{(545)} = -2.2$	<.05	.19
	WO	51.5 (9.8)	51.2 (9.9)	52.0 (9.5)	$t_{(545)} = -0.89$	>.05	-
PSYMAS	SR	49.8 (10.8)	50.6 (9.8)	48.8 (11.9)	$t_{(545)} = 1.9$	>.05	-
	ID	53.6 (10.3)	54.7 (9.4)	52.3 (11.1)	$t_{(545)} = 2.6$	<.01	.24
	Overall scores	52.4 (10.2)	53.2 (9.4)	51.4 (10.9)	$t_{(545)} = 2.1$	<.05	.18
	EX	51.7 (9.7)	51.9 (9.6)	51.5 (9.9)	$t_{(545)} = 0.5$	>.05	-
	ES	51.7 (11.0)	54.8 (9.8)	48.0 (11.3)	$t_{(545)} = 7.5$	<.01	.65
	OP	43.3 (10.5)	41.6 (10.2)	45.3 (10.5)	$t_{(545)} = -4.3$	<.01	.36
OPERAS	CO	47.4 (9.7)	47.4 (9.7)	47.6 (9.6)	$t_{(545)} = -2.5$	>.05	-
	AG	49.2 (10.3)	49.7 (10.4)	48.6 (10.2)	$t_{(545)} = 1.2$	>.05	-
	OP	43.3 (10.5)	41.6 (10.2)	45.3 (10.5)	$t_{(545)} = -4.3$	<.01	.36
BDI	DS	8.2 (5.8)	6.9 (5.3)	9.6 (5.9)	$t_{(545)} = -5.6$	<.01	.48
SWLS	LS	18.9 (4.0)	19.4 (3.8)	18.4 (4.2)	$t_{(545)} = 2.8$	<.01	.25

Note: IA-t = Indirect aggression-target; WO = Work orientation; SR = Self-reliance; ID = Identity; EX = Extraversion; ES = Emotional stability; CO = Conscientiousness; AG = Agreeableness; OP = Openness to experience; DS = Depressive symptomatology; LS = Life satisfaction

girls had higher scores in victimization by indirect aggression and openness to experience, with a small effect size, and also higher scores in depressive symptomatology, with a small effect size. Therefore, considering the effect sizes, these differences between boys and girls are small. Boys had higher scores in identity and life satisfaction, with a small effect size, and also in emotional stability, with a medium effect size.

Correlations between Indirect Peer Victimization and the Other Variables

Table 2 shows the correlations between the different subscales. As can be seen, IAS-t scores are negatively correlated with three personality traits: emotional stability, agreeableness and conscientiousness. These correlations have small effect sizes,

Table 2
Correlation matrix between variables

	1	2	3	4	5	6	7	8	9	10	11
1. IAS-t											
2. BDI	.41**										
3. SWLS	-.29**	-.51**									
4. Work orientation	-.04	-.19**	.14**								
5. Self-reliance	.05	-.01	.20**	.22**							
6. Identity	-.31**	-.46**	.50**	.23**	.36**						
7. PSYMAS overall scores	-.16**	-.31**	.41**	.57**	.77**	.79**					
8. Extraversion	-.08	-.21**	.26**	.07	.07	.31**	.22**				
9. Emotional stability	-.24**	-.43**	.45**	.11*	.24**	.48**	.41**	.38**			
10. Conscientiousness	-.10*	-.20**	.27**	.40**	.27**	.33**	.45**	.18**	.38**		
11. Agreeableness	-.24**	-.19**	.20**	.05	.13**	.26**	.22**	.04	.29**	.25**	
12. Openness to experience	.08	.06	-.01	.15**	.13**	-.08	.07	.00	-.01	.16**	.09

* $p < .05$; ** $p < .01$

especially in the case of conscientiousness, which has a very low correlation. IAS-t scores are also negatively correlated with life satisfaction (with a small effect size), identity (with a medium effect size) and the overall scores of PSYMAS (with a small effect size). Furthermore, they are positively correlated with depressive symptomatology (with a medium effect size).

Hierarchical Regressions to Test the Incremental Validity of Maturity

As this is a cross-sectional study, the hierarchical regressions and SEM analyses explained below cannot test antecedent-consequent relationships. These analyses only show that the variables are related, but not what the direction of the relationships is. For this reason, the directions of the relationships explained below are based on the literature or on the hypothesis proposed in this study.

In the first step of the hierarchical regression we entered the three personality variables hypothesized to be potential predictors: emotional stability, agreeableness and conscientiousness. As expected from the correlational analysis, however, conscientiousness was not a significant predictor. So, only emotional stability, and agreeableness were considered to be relevant personality predictors in the first step.

To assess whether the psychological maturity variables were non-negligible predictors we carried out a separate regression analysis with the three PSYMAS subscale scores as regressors. Only the identity and self-reliance scores were significant predictors, and these were the variables considered for assessing incremental validity in the second step of the hierarchical regression.

Hierarchical regression was performed by fitting one block of variables in each step (e.g. Hunsley & Meyer, 2003). The first block included the personality variables of emotional stability and agreeableness. The second block included the maturity variables of identity and self-reliance. Incremental validity was operationalized as the increase in squared multiple correlation when the second block of variables was entered. Multiple R for the first block was

.30, $F(2, 545) = 27.5, p < .01$. When the second block of variables was added, Multiple R increased to .41, $F(4, 543) = 26.9, p < .01, d = .17$, which involves a medium effect size. The increase in R^2 was .075, $F(2, 543) = 24.10, p < .01$. The same procedure was carried out separately for boys and girls. For boys, Multiple R for the first block was .30, $F(2, 294) = 14.9, p < .01$. When the second block of variables was added, Multiple R increased to .45, $F(4, 292) = 18.8, p < .01, d = .20$, which involves a medium effect size. The increase in R^2 was .1183, $F(2, 292) = 21.28, p < .01$. For girls, Multiple R for the first block was .28, $F(2, 247) = 10.2, p < .01$. When the second block of variables was added, Multiple R was .36, $F(4, 245) = 8.95, p < .01, d = .13$, which involves a medium effect size. The increase in R^2 was .05, $F(2, 245) = 7.16, p < .01$. Overall then, incremental validity was achieved in all samples. These results suggest that maturity dimensions can explain victimization beyond what can be explained by the relevant personality variables.

Table 3 shows standardized regression coefficients (Beta), structure coefficients, Johnson's relative weights and bootstrap confidence intervals for the overall sample, both boys and girls. The variables are ordered in terms of their contribution to the prediction of IAS-t scores, as Johnson's relative weights indicate. In the overall sample, all predictors (identity, agreeableness, self-reliance and emotional stability) have significant structure coefficients, with bootstrap 95% confidence intervals that did not include the zero value. Furthermore, Johnson's relative weights indicate that these four variables contribute to predicting IAS-t scores. Regarding the comparison between girls and boys, three variables (identity, agreeableness, and emotional stability) turned out to have significant structure coefficients, with bootstrap 95% confidence intervals that did not include the zero value. Self-reliance only had a significant structure coefficient in girls, although the Beta coefficient and Johnson's relative weight was significant in both sexes. However, Johnson's relative weight indicates that this variable is not such a good predictor of the vulnerability of boys to suffer indirect aggression as the other three. Although the Beta of emotional stability was not significant in boys and girls, the fact

Table 3
Regression results for the overall sample, boys and girls

	Scales	Beta	SC	Bootstrap 95% C.I. for SC		RW	Bootstrap 95% C.I. for RW	
				Lower	Upper		Lower	Upper
Overall sample	Identity	-.30**	-.76	-.87	-.60	47.1	31.3	60.7
	Agreeableness	-.17**	-.61	-.79	-.36	23.8	7.0	44.3
	Self-reliance	.20**	.12	.02	.29	15.0	6.0	26.6
	Emotional stability	-.10*	-.55	-.73	-.35	14.1	6.1	29.9
Boys	Identity	-.38**	-.87	-.97	-.72	62.6	43.7	79.9
	Agreeableness	-.16**	-.58	-.75	-.33	19.9	4.3	36.2
	Emotional stability	-.06	-.46	-.70	-.24	9.6	4.1	24.3
	Self-reliance	.16**	.06	-.21	.28	8.0	2.0	18.3
Girls	Identity	-.21**	-.60	-.84	-.30	32.5	10.3	54.6
	Agreeableness	-.17**	-.63	-.89	-.18	28.4	2.4	64.3
	Self-reliance	.22**	.22	.08	.48	23.6	3.4	44.4
	Emotional stability	.11	-.58	-.81	-.24	15.6	5.1	41.1

Note: SC: Structure coefficient. RW: Relative weight (reported as percentages). C.I.: Confidence interval.
* $p < .05$; ** $p < .01$

that the structure coefficients and Johnson’s relative weights were significant suggest that this trait should also be included in the model because it contributes significantly to the prediction of IAS-t scores. To sum up, the relative importance analysis suggests that identity and agreeableness are the main predictors of victimization, in the overall sample and also in the subsamples of boys and girls.

SEM: A Model of Relationships between the Different Variables and Indirect Peer Victimization

A Structural Equation Model was then proposed to assess the hypothesized relationships between the intervening variables in the study. Emotional stability and agreeableness (personality block), and self-reliance and identity (maturity block), were proposed as predictors (antecedents) of vulnerability to indirect aggression. Depressive symptomatology and life satisfaction were specified as consequences of victimization. As explained above, the model also included direct effects and a bidirectional relationship between identity and indirect peer victimization, because we expected more immature adolescents, without a well-defined identity, to be more vulnerable to peer victimization., and previous studies have shown that peer victimization may negatively affect self-concept and the development of identity (e.g., Callaghan & Joseph, 1995; Hunter et al., 2010). The path diagram of the model can be seen in Figure 1. Although the distributions of the variables in the model were not extreme, we fitted it using an estimation procedure (MLR) which is robust under non-normality. The goodness-of-fit results were: $\chi^2/df = 1.40$, GFI = .99, CFI = .99, TLI = .98, SRMR = .017 and RMSEA = .028, which, in all cases indicate an excellent fit. This model was then extended to the multiple-group case with gender as a grouping variable and the assumption of strong measurement invariance. The fit values were: $\chi^2/df = 1.8$, GFI = .99, CFI = .99, TLI = .96, SRMR = .025 and RMSEA = .056. The chi-square contributions were 7.297 for girls and 7.204 for boys. These results suggest that the measurement properties of the fitted model are not different for boys and girls. That is to say: the direction and

strength of the relations in the model are the same but the mean group levels in the intervening variables might be different.

Discussion

The main goal of the current study was to assess the role of personality traits and psychological maturity in peer victimization by indirect aggressions in adolescence. More specifically, we aimed to assess whether maturity dimensions (a) are relevant predictors of vulnerability to indirect aggressions, and (b) are able to explain additional variance beyond that already explained by personality traits. As expected, the results suggest that of the big five personality traits, agreeableness and emotional stability are relevant predictors of vulnerability to indirect aggressions. In other words, adolescents with lower levels of agreeableness and emotional stability are expected to be more vulnerable to this kind of aggression. In fact, these adolescents may be perceived as less likeable by the peer group, which could explain why they become targets. The meta-analysis carried out by Mitsopoulou and Giovazolias (2015) shows that these traits are also related to bullying, which suggests that both perpetrators and victims have similar personality profiles. Therefore, this profile of vulnerability would predispose them both to committing aggressions against others and to being victims of aggressions by others. On the basis of previous studies, we also expected to find that conscientiousness was an important predictor (e.g., De Bolle & Tackett, 2013; Sekol & Farrington, 2016). However, although the correlation between the conscientiousness subscale and the IAS-t questionnaire was significant, the effect size was small, and neither the structure coefficient or the relative weight for this subscale were significant. Therefore, these results suggest that this personality trait does not play an important role in predicting peer victimization through indirect aggressions, which is congruent with the study carried out by Peluchette et al. (2015). In fact, Peluchette et al. (2015) found that conscientiousness was not a predictor of cyberbullying victimization, which is congruent with the current study since cyberbullying can be one way to harm

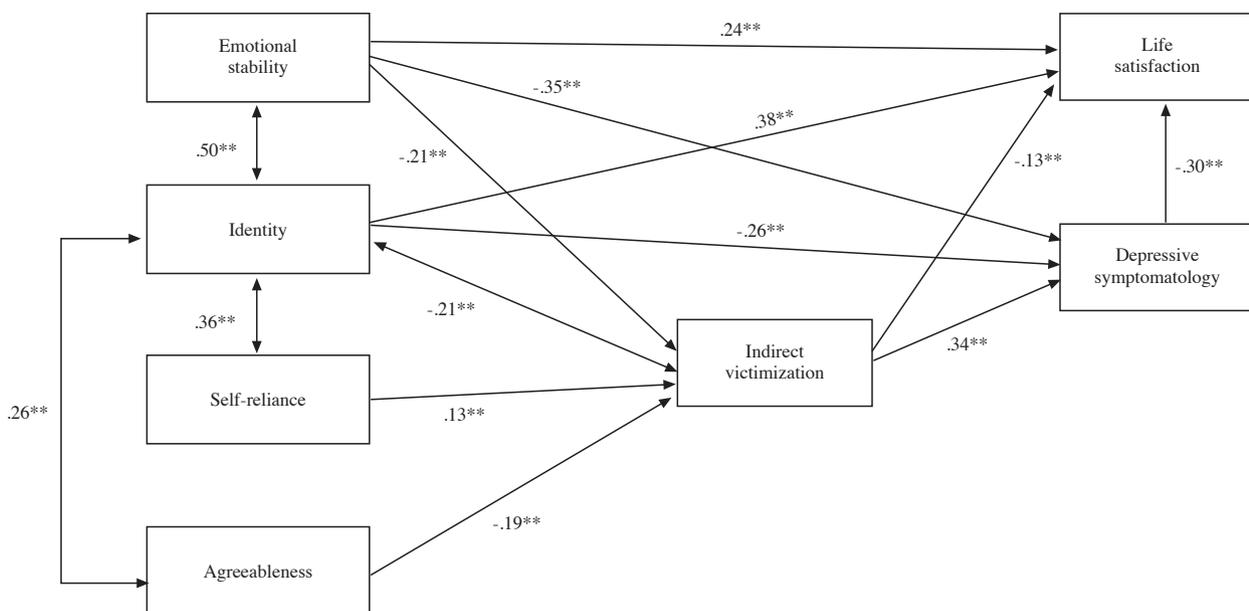


Figure 1. Structural equation model
* $p < .01$; ** $p < .001$

others indirectly (for example, speaking behind the victim's back and manipulating peer relationships through social networks).

In terms of psychological maturity, only identity and self-reliance can be regarded as important predictors of indirect peer victimization. More specifically, higher levels of self-reliance and lower levels of identity are related to greater indirect peer victimization. Therefore, it seems that those adolescents who are more independent, but who do not have a good understanding of their own characteristics and needs, are more likely to be the target of this kind of aggression. This profile, characterised by greater self-reliance, but not by the other facets of maturity, is related to what is known as pseudomaturity (Galambos et al., 2003). Pseudomature adolescents are characterised by the need to be independent, so they want to assume adult roles, although they have not developed the real psychological maturity to go with it. They tend to show little commitment and a low degree of self-exploration, and have not set any life goals. This profile is related to early drug initiation and other conduct problems (Newcomb, 1996) and, according to the current study, it is also related to vulnerability to indirect peer victimization. Regarding the self-reliance subscale, we expected to find a significant negative relationship, not a positive relationship. However, it seems that being more independent from others, including the peer group, may make integration into the peer group more difficult and increase indirect peer victimization. Another possible explanation is that these pseudomature adolescents are more likely to make bad decisions and expose themselves to situations that can lead to this kind of victimisation. It would be interesting to carry out further studies to determine whether this also increases direct peer victimization, which necessarily involves face-to-face confrontation. In fact, this variable only plays an important role in predicting indirect aggressiveness not direct aggressiveness (Morales-Vives et al., 2014), which suggests that adolescents with less self-reliance tend to avoid direct confrontation with the target because they feel more insecure. This variable may also have different implications for direct and indirect peer victimization. The bidirectional relationship between identity and indirect peer victimization is tenable and suggests that more immature adolescents who do not have a well-defined identity are more vulnerable to this kind of victimization. However, as previous studies suggest, victimization also affects the development of identity (e.g., Callaghan & Joseph, 1995; Hunter et al., 2010).

The current study also suggests that indirect peer victimization is related to higher depressive symptomatology and lower life satisfaction, as previous studies have shown (Krygsman & Vaillancourt, 2018; Estévez et al., 2019). The tested SEM supports the relationship between identity and emotional stability and indirect peer victimization, and also between identity and depressive symptomatology and life satisfaction, which is congruent with previous studies (e.g., Morales-Vives & Dueñas, 2018). Moreover,

the results suggest that the measurement properties of the fitted model can be considered to be the same for boys and girls. If they are, the predictors of indirect peer victimization and the emotional consequences can also be considered to be the same, as expected.

Some of the limitations of the study should also be mentioned. We used a cross-sectional design, so a causal relationship cannot be established between immaturity and peer victimization. In fact, this relationship could be bidirectional instead of unidirectional, with immaturity leading to a higher risk of victimization, and victimization having a negative effect on the maturation processes of these adolescents. For this reason, further longitudinal and sequential studies are needed to provide greater insight into this relationship. The variables were assessed with self-report measures so further studies are needed with measures that provide a more complete assessment, and use other informers such as parents or teachers. Further studies are needed with different samples to determine if the results are generalizable. These studies should include contextual variables, such as the characteristics of the classroom, the relationships with peers and teachers, or the rules in the school and classroom because bullying is a complex phenomenon that involves many variables and people (for example, bystanders). This lack of contextual variables is another limitation of the current study. Finally, considering that sex differences have been found in the relationship between psychopathy and indirect aggressiveness, other studies should also assess if there are sex differences in the role that the various facets of psychopathy may have in indirect peer victimization (Thomson et al., 2019).

To sum up, the results of the current study suggest that both personality traits and psychological maturity have to be taken into account for the prediction of peer victimization through indirect aggressions. This information may be helpful for detecting those students who are more susceptible to this kind of aggression, and also for developing prevention and intervention programs in schools to reduce bullying. Our results indicate that these programs should focus on the development of personal identity, and teach strategies for managing emotions. They should include activities that help adolescents to develop independent judgment and an understanding of their own needs and emotions, and they should provide strategies for self-regulation. In this way, adolescents will become more resilient, less manipulable and more able to take appropriate decisions based on their own needs, thus making them less vulnerable to victimization.

Acknowledgments

This research was supported by a grant from the Spanish Ministry of Economy and Competitiveness (PSI2017-82307-P) and a grant from the Catalan Ministry of Universities, Research and the Information Society (2017 SGR 97).

References

- Anguiano-Carrasco, C., & Vigil-Colet, A. (2011). Assessing indirect aggression in aggressors and targets: Spanish adaptation of the Indirect Aggression Scales. *Psicothema*, 23(1), 146-152.
- Björkqvist, K. (2018). Gender differences in aggression. *Current Opinion in Psychology*, 19, 39-42. <https://doi.org/10.1016/j.copsyc.2017.03.030>
- Callaghan, S., & Joseph, S. (1995). Self-concept and peer victimization among schoolchildren. *Personality and Individual Differences*, 18(1), 161-163. [https://doi.org/10.1016/0191-8869\(94\)00127-E](https://doi.org/10.1016/0191-8869(94)00127-E)
- De Bolle, M., & Tackett, J. (2013). Anchoring bullying and victimization in children within a five-factor model-based person-centred framework. *European Journal of Personality*, 27, 280-289. <https://doi.org/10.1002/per.1901>

- Erikson, E. (1968). *Identity: Youth and crisis*. Norton.
- Estévez, E., Estévez, J., Segura, L., & Suárez, C. (2019). The influence of bullying and cyberbullying in the psychological adjustment of victims and aggressors in adolescence. *International Journal of Environmental Research and Public Health*, 16(12), 1-16. <https://doi.org/10.3390/ijerph16122080>
- Galambos, N., Barker, E., & Tilton-Weaver, L. (2003). Who gets caught at maturity gap? A study of pseudomature, immature, and mature adolescents. *International Journal of Behavioral Development*, 27(3), 253-263. <https://dx.doi.org/10.1080/01650250244000326>
- Greenberger, E., & Sørensen, A. (1973). *Educating Children for Adulthood: A concept of psychosocial maturity* (Report No. 159). Center for Social Organization of Schools. <https://files.eric.ed.gov/fulltext/ED086925.pdf>
- Hunsley, J., & Meyer, G. (2003). The incremental validity of psychological testing and assessment: Conceptual, methodological, and statistical issues. *Psychological Assessment*, 15(4), 446-455. <http://dx.doi.org/10.1037/1040-3590.15.4.446>
- Hunter, S., Durkin, K., Heim, D., Howe, C., & Bergin, D. (2010). Psychosocial mediators and moderators of the effect of peer-victimization upon depressive symptomatology. *Journal of Child Psychology and Psychiatry*, 51(10), 1141-1149. <https://doi.org/10.1111/j.1469-7610.2010.02253.x>
- Johnson, J. (2000). A Heuristic Method for Estimating the Relative Weight of Predictor Variables in Multiple Regression. *Multivariate Behavioral Research*, 35(1), 1-19. https://doi.org/10.1207/S15327906MBR3501_1
- Kärnä, A., Voeten, M., Poskiparta, E., & Salmivalli, C. (2010). Vulnerable children in varying classroom contexts: Bystanders' behaviors moderate the effects of risk factors on victimization. *Merrill-Palmer Quarterly*, 56(3), 261-282. <https://doi.org/10.1353/mpq.0.0052>
- Krygsman, A., & Vaillancourt, T. (2018). Peer Victimization and Depression Symptoms: The Moderating Role of Gender Non-normative Aggression and School Transition. *Journal of Child and Family Studies*, 28, 1-12. <https://doi.org/10.1007/s10826-018-1119-z>
- Leenaars, L. S., & Rinaldi, C. M. (2015). Indirect Victimization. In W. G. Jennings (Ed.), *The Encyclopedia of Crime and Punishment* (pp. 734-736). Wiley Blackwell. <https://doi.org/10.1002/9781118519639.wbecpx180>
- Lorenzo-Seva, U., Ferrando, P.J., & Chico, E. (2010). Two SPSS programs for interpreting multiple regression results. *Behaviour Research Methods*, 42(1), 29-35. <https://dx.doi.org/10.3758/BRM.42.1.29>
- Lorenzo-Seva, U., & Van Ginkel, J.R. (2016). Multiple imputation of missing values in exploratory factor analysis of multidimensional scales: Estimating latent trait scores. *Anales de Psicología*, 32(2), 596-608. <http://dx.doi.org/10.6018/analesps.32.2.215161>
- Lucas-Molina, B., Pérez-Albéniz, A., & Giménez-Dasí, M. (2016). The assessment of cyberbullying: The present situation and future challenge. *Papeles del Psicólogo*, 37(1), 27-35. <http://www.papelesdelpsicologo.es/resumen?pii=2659>
- Mitsopoulou, E., & Giovazolias, T. (2015). Personality traits, empathy and bullying behavior: A meta-analytic approach. *Aggression and Violent Behavior*, 21, 61-72. <https://doi.org/10.1016/j.avb.2015.01.007>
- Monahan, K., Steinberg, L., Cauffman, E., & Mulvey, E. (2009). Trajectories of Antisocial Behavior and Psychosocial Maturity from Adolescence to Young Adulthood. *Developmental Psychology*, 45(6), 1654-1668. <https://doi.org/10.1037/a0015862>
- Morales-Vives, F., Camps, E., & Lorenzo-Seva, U. (2013). Development and Validation of the Psychological Maturity Assessment Scale (PSYMAS). *European Journal of Psychological Assessment*, 29(1), 12-18. <https://doi.org/10.1027/1015-5759/a000115>
- Morales-Vives, F., Camps, E., Lorenzo-Seva, U., & Vigil-Colet, A. (2014). The Role of Psychological Maturity in Direct and Indirect Aggressiveness in Spanish Adolescents. *The Spanish Journal of Psychology*, 17(e16), 1-8. <https://doi.org/10.1017/sjp.2014.18>
- Morales-Vives, F., & Dueñas, J.M. (2018). Predicting suicidal ideation in adolescent boys and girls: The role of psychological maturity, personality traits, depression and life satisfaction. *Spanish Journal of Psychology*, 21(e10), 1-12. <https://doi.org/10.1017/sjp.2018.12>
- Newcomb, M.D. (1996). Pseudomaturity among adolescents: Construct validation, sex differences, and associations in adulthood. *Journal of Drug Issues*, 26(2), 477-504. <https://doi.org/10.1177/002204269602600209>
- Peluchette, J.V., Karl, K., Wood, C., & Williams, J. (2015). Cyberbullying victimization: Do victims' personality and risky social network behaviors contribute to the problem? *Computers in Human Behavior*, 52, 424-435. <https://doi.org/10.1016/j.chb.2015.06.028>
- Pistella, J., Baumgartner, E., Laghi, F., Salvati, M., Carone, N., Rosati, F., & Baiocco, R. (2020). Verbal, physical, and relational peer victimization: The role of immigrant status and gender. *Psicothema*, 32(2), 214-220. <https://doi.org/10.7334/psicothema2019.236>
- Pons, D., Atienza, F., Balaguer, I., & García-Merita, M. (2000). Satisfaction with life scale: Analysis of factorial invariance for adolescents and elderly persons. *Perceptual and Motor Skills*, 91(1), 62-68. <https://doi.org/10.2466/pms.2000.91.1.62>
- Salmivalli, C. (2010). Bullying and the peer group: A review. *Aggression and Violent Behavior*, 15(2), 112-120. <https://doi.org/10.1016/j.avb.2009.08.007>
- Sanz, J., & Vázquez, C. (1988). Reliability, validity, and normative data of the Beck Depression Inventory. *Psicothema*, 10(2), 303-318.
- Sekol, I., & Farrington, D. (2016). Personal characteristics of bullying victims in residential care for youth. *Journal of Aggression, Conflict and Peace Research*, 8(2), 99-113. <https://doi.org/10.1108/JACPR-11-2015-0198>
- Thomson, N.D., Bozgunov, K., Psederska, E., & Vassileva, J. (2019). Sex differences on the four-facet model of psychopathy predict physical, verbal, and indirect aggression. *Aggressive Behavior*, 45(3), 265-274. <https://doi.org/10.1002/ab.21816>
- Vanderbilt, D., & Augustyn, M. (2010). The effects of bullying. *Paediatrics and Child Health*, 20(7), 315-320. <https://doi.org/10.1016/j.paed.2010.03.008>
- Vigil-Colet, A., Morales-Vives, F., Camps, E., Tous, J., & Lorenzo-Seva, U. (2013). Development and validation of the Overall Personality Assessment Scale (OPERAS). *Psicothema*, 25(1), 100-106. <https://doi.org/10.7334/psicothema2011.411>