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Original

The Role of Teaching Practices in the Prevention of School Violence among Peers[☆]

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A B S T R A C T

This study includes an analysis of the relationships between peer violence, teaching practices, school environment, and empathy. The sample includes 385 adolescents (219 males and 166 females), with a mean age of 12.94 ($SD = 1.77$), and one of their parents (mean age = 42.21, $SD = 8.98$) from 17 Mexican secondary schools. A structural equation model was constructed using AMOS software. The study results indicate that a non-permissive teaching system and parental practices aimed at preventing violence have a direct relationship with reduced peer violence. Moreover, both teaching practices are related indirectly to peer violence, through its effect on school environment and empathy. From the present study, it is concluded that these practices prevent peer violence, improve the school environment, and foster empathy. Finally, the results, as well as their possible implications, are discussed.

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El rol de las prácticas docentes en la prevención de la violencia escolar entre pares

R E S U M E N

El estudio analiza las relaciones entre prácticas docentes, clima escolar, empatía y violencia entre pares. La muestra se compone de 385 adolescentes, 219 chicos y 166 chicas ($M = 12.94$, $DT = 1.77$) de 17 escuelas secundarias de un estado de México, y uno de sus progenitores, 308 madres y 77 padres ($M = 42.21$, $DT = 8.98$). Se calcula un modelo de ecuaciones estructurales con el programa AMOS. De los resultados se infiere que las prácticas docentes no permisivas y aquellas que implican a familias en la prevención de la violencia se relacionan con una menor agresión entre pares. Además, ambas prácticas docentes se relacionan indirectamente con la violencia entre pares, a través de su efecto en el clima escolar y la empatía. Se concluye que estas prácticas previenen la violencia entre iguales, mejoran el clima escolar y la empatía. Finalmente, se discuten los resultados y sus posibles implicaciones prácticas.

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Introduction

School violence among peers refers to coercive and intentional physical, verbal and/or relational behaviors aimed at their peers (Jiménez, Musitu, & Murgui, 2008). Research carried out in the United States of America, Europe, and Latin America conclude that between 10% and 40% of adolescents have participated in some violence situation among peers within the school setting (Craig et al., 2009; Díaz-Aguado, Martínez, & Babarro, 2013; Román & Murillo, 2011). The prevalence of this behavior in Mexico is set between 10%

and 25% (National Institute for the Evaluation of Education [INEE], 2007; Valdés & Carlos, 2014).

Victimization is associated to emotional and behavioral problems, integration difficulties in school, and poor academic performance (Cava, Buelga, Musitu, & Murgui, 2010). Aggressors show a higher incidence of behavior problems and psycho-social adjustment difficulties that often persist in adult life (Olweus, 2011). In addition, violence among peers is related to the perception of a negative school environment that hinders learning (Meyer-Adams & Conner, 2008).

In view of the gravity of the consequences of peer violence, interventions aimed at preventing this problem have increased. School and teachers are particularly important for the success of these programs (American Educational Research Association [AERA], 2013). However, there is scarce research regarding the role of teaching practices in the prevention of school violence among students. This study examines the relation between non-permissive teaching practices and those involving families with peer-to-peer school violence. The role played by teaching practices within the school climate and empathy are also analyzed.

Teaching practices comprise actions taken by teachers in the teaching-learning process, which may involve students and their families pursuing the creation of a positive environment for learning and peacefully coexistence (Kochenderfer-Ladd & Pelletier, 2008). Non-permissive practices refer to strategies used by teachers facing an episode of peer violence and trying to stop it through different actions such as reasoning with students about the negative effects of violence; establishing agreements to repair the damage caused by aggressive behavior; and non-violent resolution of conflicts (Bauman & del Río, 2005; Wei, Herbert, Chen, & Chang, 2010). On the other hand, teaching practices that involve families in the prevention of violence comprise interventions that foster parental involvement in the development of cognitive and socio-emotional competencies associated with success in school and the respectful coexistence of children (Lacroque, Kleiman, & Darling, 2011). These practices aim to foster positive parenting, communication with the school, participation in decision making and educational management to support children's learning (Fantuzzo, Tighe, & Childs, 2000).

Literature suggests that non-permissive teaching practices are associated with a lower incidence of peer aggression (Kochenderfer-Ladd & Pelletier, 2008; Yoon & Kerber, 2003). On the other hand, only few studies which that analyze the participation of families in education emphasize that parents' perception of teachers' invitations to active participation in violence prevention, promoting their involvement in this problem (Fantuzzo, McWayne, Perry, & Childs, 2004). Through these practices, teachers promote that families play an active role in school management processes (Epstein, 2011). Moreover, a better social environment is stimulated, and this is associated with a low incidence of peer violence in school (McDonald, Miller, & Sandler, 2015). The factors mentioned above contribute to enhance the effectiveness of school violence prevention programs (Smith, Cousin, & Stewart, 2005).

In this sense, non-permissive teaching practices and those involving families in peer violence prevention are associated with students' perception of a positive school environment (Bosworth & Judkins, 2014; McSuga-Gage, Simonsen, & Briere, 2012), which is characterized by confidence toward teachers and peers (Zullig, Huebner, & Patton, 2011) and the perception of teachers' support on violence situations (Hanish & Guerra, 2000; Harris, Petrie, & Willoughby, 2002). Likewise, a positive school social environment reduces the involvement of students in violent behaviors in school (Cerezo, Sánchez, Ruíz, & Arense, 2015; Varela, Ávila, & Martínez, 2015).

In addition, teaching practices, as well as school social environment stimulate the development of empathy (Peets,
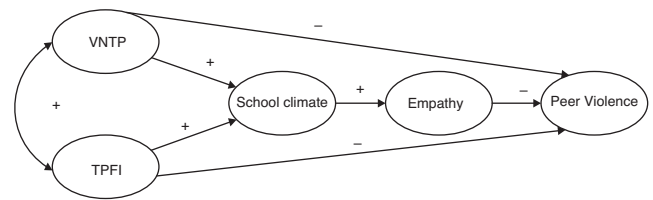

Figure 1. Hypothetic model of the relation between violence non-permissive teaching practices (VNTP), teaching practices involving families (TPFI), school climate, empathy, and peer violence.

Poyhonen, Junoven, & Salmivalli, 2015). In fact, previous studies conclude that the consolidation of an environment of respect and understanding toward peers, in which families and teachers participate, promotes the development of empathy (Grusec, Chaparro, Johnston, & Sherman, 2014; Juujarvi, Myyry, & Pesso, 2012). Moreover, empathy is associated with lesser involvement in peer violence behaviors (Caravita, di Blasio, & Salmivalli, 2009; Perren, Gutzwiller-Helfenfinger, Malti, & Hymel, 2012).

Therefore available empirical evidence shows that teaching practices play an important role in explaining violence among peers in school. Also, it has been show that teaching practices and family involvement in school promote the configuration of a positive school social environment and the development of empathy among adolescents. Both variables are associated with a lower frequency of aggressive behaviors among students. However, important issues remain to be unsolved. First, there are no studies that analyze the relationship between teaching practices, school climate, empathy and school violence among peers. Second, research on teaching practices and peer violence among Mexican adolescents is still in its infancy.

Therefore, the goal of this study is to examine the relationships between Mexican teenager students' and their parents' perceptions regarding teaching practices, school environment, empathy, and peer violence. Based on this goal, and as foreseen from the theoretical model proposed (see Figure 1), it is expected that non-permissive teaching practices and those involving families in school violence prevention are directly and indirectly related to a reduction of students' participation on peer violence behaviors, in virtue of their relationships with school climate and empathy. This model is considered to contribute to a better understanding of the role of school context and, above all, the teacher in the prevention of school violence in adolescents.

Method

Participants

The selection of participants was made by a non-probabilistic sampling, whose initial criterion was the availability of the school to participate in the research. This study consists of two sub-samples: adolescents and their parents. The first sub-sample is made up of 385 adolescents enrolled in 17 urban public secondary schools in Sonora, Mexico (219 boys and 166 females), aged between 12 and 15 years ($M = 12.94$, $SD = 1.77$). Distribution by educational levels is as follows: first course 135 (35.06%), second course 157 (40.78%) and third course 93 (24.16%). The second sub-sample consists of the parents (fathers or mothers) of the participating students, his sub-sample consists of a total of 385 parents (308 mothers and 77 fathers), aged between 33 and 48 years ($M = 42.21$, $SD = 8.98$).

Instruments

Violence non-permissive teaching practices (VNTP)

This scale is elaborated for the study, taking as reference previous instruments developed to measure this construct (Ellis & Shute, 2007; Roth, Kanat-Maymon, & Bibi, 2011). The scale consists of seven scenarios that illustrate different types of violence: psychological (e.g., "one or more students insult a partner"), physical (e.g., "one or several students beat another/others"), and social (e.g., "one or several students do not let their classmates participate in tasks or games"). For each scenario, eight types of response to these situations are described (e.g., "appropriately penalizing the aggressor") and students are asked to identify the frequency with which teachers conduct these behaviors. The response format is the Likert type with options ranging from 0 (never) to 4 (always). Prior to its application, the scale is subject to content validity by instead of from ten experts (seven researchers in the subject and three professors). Was decided to keep all items since the Kappa index of agreement among the experts was equal to or greater than .80 in all cases.

Items are grouped into two factors. The first factor, *provision of rationality* (four items, $\alpha = .81$, $\Omega = .88$, $\theta = .90$, average variance extracted [AVE] = 66%), evaluates teachers' actions for reasoning with student aggressors regarding how misplaced their behavior is (e.g., "explains why aggression is a behavior that harms everyone"). The second factor, *direct intervention behaviors* (four items, $\alpha = .85$, $\Omega = .86$, $\theta = .92$, AVE = 61%), measures teachers' behaviors focused on stopping aggression, protecting the victim and penalizing the aggressor (e.g., "appropriately penalizes the aggressor").

Results of the second-order confirmatory factor analysis confirm a good fit of the construct measurement model ($X^2 = 30.90$, $df = 18$, $p = .051$, CFI = .98, SRMR = .05, RMSEA = .04, CI 90 [.02–.07]), which reaches an AVE of 63% (Blunch, 2013). Taking into consideration the following values, the overall reliability of the scale is acceptable: Cronbach's alpha (α) = .84, McDonald's omega (Ω) = .93 and Theta ordinal (θ) = .91 (Zumbo, Gaderman, & Zeissen, 2007).

Teaching practices involving families (TPFI)

This scale is elaborated from the analysis of two models about the forms of participation of families in education (Epstein, 2011; Fantuzzo et al., 2004). For the analysis of content validity, the judgment of ten experts, six researchers, and four professors are considered. It was decided to keep all the original items since the Kappa index of concordance was in all cases equal to or greater than .90.

This scale consists of 12 items with a response range from 0 (never) to 4 (always), which evaluate parents' perceptions about practices employed by teachers for them to participate in school violence prevention. The items on the scale are grouped into three factors. The first factor, *upbringing* (four items, $\alpha = .82$, $\Omega = .87$, $\theta = .92$, AVE = 57%) measures teachers' actions that benefit the development of positive educational practices in families (e.g., "they guide about appropriate methods of discipline"). The second factor, *communication with the school* (four items, $\alpha = .72$, $\Omega = .77$, $\theta = .80$, AVE = 54%) refers to teachers' activities for relating to families and informing them about the child and the school (e.g., "they hold meeting where they address guidelines related to school coexistence"). Finally, the *collaboration with school and community* factor (four items, $\alpha = .80$, $\Omega = .85$, $\theta = .88$, AVE = 50%), measures the practices carried out by teachers to involve parents in school management and use of community support (e.g., "ensure parents participate in decision-making regarding school actions promoting coexistence").

The second order confirmatory factor analysis with the maximum likelihood estimation method confirms the fit of the proposed measurement model ($X^2 = 48.78$, $df = 43$, $p = .001$, CFI = .98,

SRMR = .04, RMSEA = .05, CI [.03–.07]) reaching an AVE of 54% (Blunch, 2013). The values of $\alpha = .84$, $\Omega = .92$ and $\theta = .93$ show an acceptable overall reliability of the scale (Zumbo et al., 2007).

School social climate (SSC)

A Spanish adaptation of the *School Climate Measure* Scale (SCM) (Zullig, Koopman, Patton, & Ubbes, 2010) is used. This scale consists of 10 items, with a response range from 0 (never) to 4 (always) that measures the social climate perceived by the students. The scale is made up of two sub-scales. The first sub-scale, *commitment to the school*, evaluates the students' perception of the connection to the school (six items, $\alpha = .86$, $\Omega = .82$, $\theta = .98$, AVE = 60%) (e.g., "I feel close to the people of my school"). The second sub-scale, *student–teacher relation* (four items, $\alpha = .82$, $\Omega = .89$, $\theta = .90$, AVE = 53%), measures the existence of interest and care of teachers in their relationship with students (e.g., "teachers are available when I need to talk to them").

The second-order confirmatory factor analysis with the maximum likelihood estimation method confirms the fit of the proposed factor structure ($X^2 = 28.8$, $df = 24$, $p = .004$, CFI = .98, SRMR = .05, RMSEA = .05, CI [.03–.09]), with an AVE of 57% (Blunch, 2013). The values of the coefficients $\alpha = .84$, $\Omega = .93$, and $\theta = .93$ suggest an adequate global scale reliability (Zumbo et al., 2007).

Empathy

The *Adolescent Measure of Empathy & Sympathy* (AMES) scale (Vossen, Piotrowski, & Valkenburg, 2015) is used. This scale is made up of 12 items with a response range from 0 (never) to 4 (always) that measures cognitive empathy, affective empathy, and sympathy. In this study, the sub-scales of cognitive and affective empathy are used. The *cognitive empathy* sub-scale ($\alpha = .83$, $\Omega = .75$, $\theta = .79$, AVE = 73%) is made up of four items that assess the adolescent's understanding of the emotional state of others (e.g., "I can tell how my classmates feel, even before they tell me"). The *affective empathy* sub-scale ($\alpha = .81$, $\Omega = .83$, $\theta = .88$, AVE = 55%) is made up of four items that evaluate the frequency with which the adolescent experiences other people's emotions (e.g., "when a friend is sad, I get sad too").

By means of a second-order confirmatory factor analysis with the maximum likelihood estimation method, the fit of the measurement model is confirmed ($X^2 = 30.60$, $df = 17$, $p = .022$, SRMR = .05, CFI = .98, RMSEA = .04, CI [.01–.06]) (Blunch, 2013), with an AVE of 60%. The values of the coefficients $\alpha = .84$, $\Omega = .87$, and $\theta = .89$ of the global scale are acceptable (Zumbo et al., 2007).

School violence among peers

The scale for measuring *Aggressions between Students* – EAE (Valdés & Carlos, 2014), which consists of nine items that assess the frequency of students' aggressive behaviors toward peers during the last month (e.g., "I insult my classmates", "I threaten my classmates"). The scale has five response options: 0 (never), 1 (almost never 0–2 aggressions), 2 (sometimes 3–5 aggressions), 3 (almost always 5–7 aggressions), and 4 (always more than 7 aggressions). Confirmatory factor analysis with the maximum likelihood estimation method shows the fit of a one-dimensional measurement model of the construct ($X^2 = 23.83$, $df = 20$, $p = .09$, CFI = .99, SRMR = .03, RMSEA = .04, CI 90 [.02–.08]) (Blunch, 2013), with an AVE of 62%. The values of the coefficients $\alpha = .82$, $\Omega = .89$, Alpha ordinal (α_{ord}) = .93 suggest an adequate reliability of scores (Zumbo et al., 2007).

Procedure

Firstly, school authorities were informed of the purpose of the investigation and their authorization to access the institutions is

requested. Subsequently, a letter is sent to the parents explaining the purpose of the study and requesting their consent for their children participation in the research. In addition, parents were invited to have one of them complete the attached questionnaire on teaching practices. Once the permits have been granted, and parents' information has been obtained, the students were gathered to them explain the purpose of the study and to inform that their participation in the research is voluntary and confidential. Data collection took place during regular school hours. A group of trained researchers participated providing assistance to students.

The study obtained the Research Commission of the Technological Institute of Sonora (CIITSON, in its Spanish acronym) approval. The CIITSON is an ethical commission aligned to the principles of the Declaration of Helsinki – the European Convention for the Protection of Human Rights – and the Universal Declaration of the United Nations Educational, Scientific and Cultural Organization (UNESCO) on Human Rights.

Data analysis

Missing values are treated using the regression imputation method. The mean, standard deviations and Pearson's correlations between the variables under study are then calculated. Next, a model of structural equations is calculated with the AMOS 20 program (Arbuckle, 2011). To ensure normality, the bootstrap method of the AMOS 20 (with 2000 95% CI) is used, which ensures that the results of the estimates do not present problems of normality (Blunch, 2013; Byrne, 2010).

In order to determine the goodness of fit of the measurement models and the structural equation model, the maximum likelihood estimation (ML) method is used. The indexes of adjustment are those proposed by Blunch (2013) and Byrne (2010): X^2, p (chisquare and associated probability), TLI (Tucker-Lewis index), SRMR (standardized root mean square residual), AGFI (adjusted goodness of fit index), CFI (comparative fit index), and RMSEA CI 90 (square root mean-error approximation with its confidence interval). Values of X^2 with $p > .001$; TLI, CFI, AGFI equal to or greater than .95; RMSEA and SRMR with values equal to or less than .08, and preferably to .05 are considered acceptable (Blunch, 2013; Byrne, 2010).

Results

Table 1 shows the means, typical deviations, and correlations between the variables. Both types of teaching practices correlate negatively with peer violence, and positive with school social climate and empathy. In addition, the school social climate correlates positively with empathy and negatively with school violence. There is also a negative relationship between empathy and peer violence.

Table 1
Mean, standard deviation and correlation between the variables involved in the study

Variables	M	SD	1	2	3	4	5
1. Peer violence	2.41	.43	–				
2. VNTP	1.83	.52	−.47***	–			
3. TPFI	1.85	.65	−.28**	.28**	–		
4. School climate	2.17	.68	−.13	.37***	.35***	–	
5. Empathy	1.99	.64	−.42***	.16*	.15*	.34***	–

TPFI: teaching practices involving families, VNTP: violence non-permissive teaching practices.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

Global fitting of the model

After examining the previous analyzes, it was decided to include all the variables in the calculation of the model of structural equations. The model shows a suitable fit to the data ($X^2 = 250$, $df = 237$, $p = .26$, TLI = .92, SRMR = .023, AGFI = .96, CFI = .98, RMSEA = .036, IC 90 [.02–.06]). This model accounts for 35% of the variance in peer violence.

Figure 2 shows the structural model with the standardized coefficients and their associated probability. A positive covariance is obtained between VNPP and TPFI ($p < .000$). Regarding direct relationships, the results indicate that both non-permissive teaching practices and those involving parents in the prevention of violence are negatively related to peer violence ($\beta = −.35$, $p < .000$ and $\beta = −.23$, $p < .000$ respectively) and positively related to school social climate ($\beta = .32$, $p < .000$ and $\beta = .29$, $p < .000$ respectively). Also, empathy is negatively related to peer violence ($\beta = −.40$, $p < .000$) and the school social climate is associated with greater *empathy* ($\beta = .34$, $p < .000$). Regarding the indirect effects, which affect the influence of the independent variable on the dependent variable by its relationships with an intervening variable (Biesanz, Falk, & Savalei, 2010), Sobel test results suggest that VNPP ($\beta = −.17$, $p < .000$) and TPIF ($\beta = −.12$, $p < .000$) are negatively related to peer violence by its positive effects on the school social environment, which in turn favors students' empathy development, which in turn is associated with less peer violence.

Discussion

The present study analyzes the relationship between teaching practices and school violence among peers. It was expected that non-permissive teaching practices and teaching practices targeting parent's involvement to prevent violence would have been associated with peer's violence reduction, through its effects on school environment and empathy. Regarding to direct relationships, the results obtained confirm the researchers' hypothesis. Results indicate that non-permissive teaching practices and teaching practices aimed at involving parents in prevention are negatively related to school violence among peers.

The results agree to previous research which emphasize the effect of non-permissive teaching practices in the prevention of school violence (Kochenderfer-Ladd & Pelletier, 2008; Yoon & Kerber, 2003). In this regard, it has been shown that when there are episodes of violence between peers in the classroom, the participation of teachers with practices involving strategies such as direct intervention and the subsequent meeting with the aggressors to explain the implications of this behavior, constitutes an effective strategy for the reduction of this type of behaviors.

Concurrently, teaching practices that involve families in the prevention of school violence are also associated with a lower frequency of school violence among peers, which is a convergent result with previous studies (AERA, 2013; Bradshaw, 2015). The present findings show that teaching practices to guide families to develop positive educational actions, those that aim at the family participation at school, and those intended improve communication between both educational agents, contribute to the prevention of peer violence.

An aspect that deserves to be highlighted is the direct effect of both types of teaching practices on school violence is similar. That is itself a sign of the effectiveness of both practices and their complementary as well. In other words, the actions of teachers directed at both students and families are strategies associated with the decrease of violence in the classroom. In the light of the results obtained, further research should be devoted to exploring the results above.
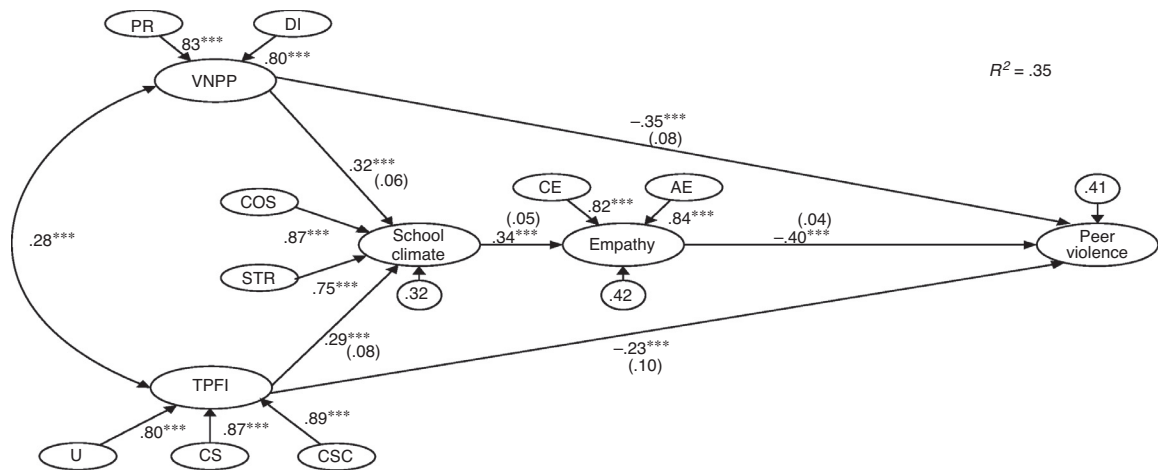
Figure 2. Standardized coefficients and standard errors (in parentheses) of the relation between violence non-permissive teaching practices (VNPP), teaching practices involving families (TPFI), school social climate, empathy, and peer violence. *$p < .05$, **$p < .01$, ***$p < .001$.
Note. PR = Provision of rationality; DI = Direct intervention behaviors; U = Upbringing; CS = Communication with the school; CSC = Collaboration with school and communications; COS = Commitment to the school; STR = Student-teacher relations; CE = Cognitive empathy; AE = Affective empathy.

Regarding indirect effects, the obtained results confirm the researchers' hypothesis that both types of teaching practices are indirectly related to violence, through its effects on school climate and empathy. While previous research suggests that teaching practices are directly and indirectly associated with less frequent violent behavior among students (Ellis & Shute, 2007), the results of the present study show that indirect effect is due to the by enhancement of a positive school climate which, in turn, is associated with greater empathy.

Both non-permissive teaching practices and those actions focused on engaging parents contribute to generating a positive school climate are related to greater empathy and peer violence reductions at the classroom. These results are consistent with other studies that have shown that both types of teaching practices have a positive effect on students' perception of the school climate (McSuga-Gage et al., 2012). Moreover, school climate favors the development of empathy that, in turn, is related to a decrease in peer violence (Caravita et al., 2009; Perren et al., 2012). Therefore, teaching practices that foster the construction of a positive school climate in which students perceive cohesion and support, feel integrated in school and actively participate in school life, stimulate the development of empathy toward their peers.

Previous studies already underlined the importance of school climate in school violence (Bosworth & Judkins, 2014). Nevertheless, the finding of the present study suggest that empathy is also an essential aspect in explaining this relationship, That is, insofar that a positive school climate takes place, the stimulation of this moral emotion is produced, which is associated with peer violence reduction (Caravita et al., 2009). In this context, the results show that these teaching practices above mentioned no only act as external regulators of violent behavior but also they stimulate the development of moral emotions, such as empathy. The development of this moral emotion is a fundamental element within the mechanisms of internal regulation of behavior, which are more efficient to last throughout the development of the individual and to be transferable to other social situations (Gibbs, 2014; Malti & Ongley, 2014).

The findings of this study suggest relevant lines of intervention for the prevention of school violence. Accordingly, peer violence prevention programs should include school fostering a positive school climate, which spaces and ways for adolescents' participation, where the teacher support is encouraged (Dell & van Schoiack, 2012). To this effect, and in light of the results obtained, it is important to provide to the teaching staff with the necessary skills. Doing so, teachers might foster the creation of positive school environment and develop empathy through their teachings. These two complementary paths – such as the development of a non-permissive teaching and the creation of spaces for the participation of families in school life – play an active role in the prevention of violence. In this regard, Romero, Postigo, and Torres (2015) assert that it is crucial to encourage a methodology in the participatory classroom and the educational intention as well within the teaching-learning process.

Results of the study also point out the need for linking the actors of the educational process – family and school – in the prevention of this problem. Particularly, the study highlights the importance of teachers as intermediaries who contribute to increasing families' participation in actions targeting at reducing school violence reduction.

In summary, the present study provides data that can greatly benefit and serve as guidance for intervention and prevention programs, regarding of school violence and coexistence in the classroom. Nonetheless, the results presented here have some limitations, which should be interpreted with some caution. The present study is a cross-sectional design that not allows to establish causal relations between the variables. Therefore, researchers suggest future studies with a longitudinal design to get a deeper analysis of relationships mentioned above. It should also be noted that sample size is enough for statistical analysis, does not allow multi-group analysis by sex of students and parents; this is an aspect that would be interesting to analyze in future studies. It is also necessary to research about the social desirability of the scale to measure peer violence.

Despite these limitations, the study shows interesting data to understand the different relationships analyzed, and it also important implications for the prevention of school violence among peers. Hence, the results of the study allow emphasizing the importance of the teaching staff, particularly teaching practices, to prevent violence and the consolidation of a positive school climate. In this manner empathy development is improved, promoting in this way a positive school coexistence. Finally, it is also concluded that the family participation in the prevention of school violence – in a coordination with teachers – it is considered as a promising and incipient line of intervention. It does reduce not only violence

in schools but also to promote a more positive school climate based on respect and empathy.

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