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Parental Support Buffering the Effect of Violence on Adolescents' Depression:

Gender Differences

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Violence in Mexico has increased during the last several years. As such, violence has become a social problem of great importance. Both children and adolescents are affected due to their continuous exposure to different types of community, family, and school violence.

Community violence has been documented by the General Office of the State Government, which reported an alarming number of violent criminal offences during 2013 in the state of Nuevo Leon; e.g., 316 strikes and simple physical violence attacks, 46 kidnappings, 4,388 crimes against the peace and security of individuals, and 10,191 offences against people's life and safety (Procuraduría General de Justicia, 2014). Similarly, family violence is also recognized as a major public health issue in Mexico with significant psychological basis due to the fact that women, children, disabled, and elderly are the most frequent victims. The Ministry of Health (2014) reported 10,493 cases of domestic violence injuries in Mexico. School violence is another critical issue in Mexico. According to the Organization for Economic Cooperation and Development (OECD), the country ranks first internationally, with more cases of bullying at the secondary school level (Gamboa & Valdés, 2012).

These living conditions lead children and adolescents to cope with experiences and challenges that do not correspond to their age. The present research was performed with the aim of finding a more comprehensive understanding of violence outcomes and its moderators on Mexican adolescents. The primary goals of the study were threefold: (1) to examine whether generalized exposure to violence may affect Mexican adolescents' psychological states, such as depressive symptoms; (2) to identify a buffering mechanism for the effects that violence exposure has on depression; (3) and to explore possible gender differences in that process.

Outcomes of Exposure to Violence

Previous figures showed that Mexican children and adolescents are at high risk for exposure to community, family, and school violence. These experiences have undoubted important psychological consequences. A large body of research has established a strong relationship between exposure to violence and psychological distress, such as anxiety and

depression (Bach, & Louw, 2010; Bale, 2006; Brown & Bzostek, 2003; Kinyanda, Kizza, Abo, Ndyanabangi, & Levin, 2013; Quiroga, Willis, López-Rodríguez, & Moreno, in press; Voith, Gromoske, & Holmes, 2014). Moreover, dealing with unsafe or violent environments may produce a constant level of stress that leads them to feel overloaded, depleted, or beleaguered (Cooley-Quille, Boyd, Frantz, & Walsch, 2001; McNeely, 2009), and lead to lower psychological well-being (Wood & Joseph, 2010).

Violence also has externalized outcomes including violent behavior (Farrell & Bruce, 1997; Spano, Vazsonyi, & Bolland, 2009), initiation of gun carrying (Spano, Pridemore, & Bolland, 2012), delinquency (Erdelja et al., 2013; McGee et al., 2001), and substance use (Wright, Fagan, & Pinchevsky, 2013). The effects of adolescents' exposure to chronic vicarious victimization also predict significant chronic violent behavior (Spano, Rivera, & Bolland, 2010), and may exacerbate externalization behavior such as bullying (Cooley-Strickland et al., 2009; Gorman-Smith & Tolan, 1998).

Exposure to Violence and Social Support

This study is not especially aimed at exploring the effects of exposure to violence on negative outcomes, but at finding a relevant moderator of this process. According to previous research, social support may be a pertinent choice for this goal.

Social support is considered to be a multidimensional construct referring to the feeling of being appreciated by others (Bean, 2005; Cheng, 2004) and belonging to a social network (Freeman, Anderman, & Jensen, 2007; Hale, Hannum, & Espelage, 2005). Consistently, social support appears to be a key factor in the development of children and adolescents and is linked to positive consequences, both physical and psychological. Its presence is generally associated with an appropriate adjustment in various areas of the everyday life of individuals (Hoffman, Ushpiz, & Levy-Shift, 1988; Malecki & Demaray, 2003), when facing stressors, crises, and difficult adjustments (Barra, Cerna, Kramm, & Véliz, 2006; Compas, Slavin, Wagner, &

Vannatta, 1986; Musito & Cava, 2003), and from their negative psychological consequences (Berkman, Glass, Brissete, & Seeman, 2000; Salami, 2010).

Depression is also negatively related to perceived social support (Overstreet, Dempsey, Graham, & Moely, 1999; Rodríguez, 2010; Stice, Ragan, & Randall, 2004; Stice, E., Rohde, Gau, & Ochner, 2011). Moreover, social support moderates the effects of violence exposure on depression, showing that youths exposed to violence but with a high parental support, do not suffer from negative adjustment (Luthar & Golstein, 2004; Tajima, Herrenkohl, Moylan, & Derr, 2011).

Gender differences

Gender differences have been found in prevalence of violence exposure. Adolescent males have traditionally reported more neighborhood violence than females (e.g., Jenkins & Bell, 1994; Selner-O'Hagan, Kindlon, Buka, Raudenbush, & Earls, 1998), whereas adolescent females have reported higher relationship victimization compared to males (Forke, Myers, Catallozzi, & Schwarz, 2008; Marquart, Nannini, Edwards, Stanley, & Wayman, 2007).

Potential gender differences in the psychological responses to violence exposure are still inconclusive, coexisting contradictory evidences (McDonald & Richmond, 2008). Some studies showed that females tend to develop more depressive symptoms than males (Abada, Hou, & Ram, 2008; McGee et al., 2001; Mendelson, Turner, & Tandon, 2010; Velásquez & Montgomery, 2009), but others found greater vulnerability for depression among males exposed to violence (Foster et al., 2004)

This last finding could be because girls, more than boys, seem to use social support as a coping mechanism. In fact, Frydenberg and Lewis (1993) found that when facing stressful situations boys turned to physical relaxation and recreation whereas girls tended "to turn to others and make more of connectedness and relationships in coping" (1993, p. 264).

All in all, gender differences have been identified regarding the role of social support for adolescents (Buhrmester & Furman, 1987; Colarossi & Eccles, 2003; Demaray & Malecki, 2002;

Malecki & Demaray, 2003). Taylor et al. (2000) explained these gender differences arguing that females stress responses have evolved to maximize the survival of self and offspring. Females have been more effectively able to maintain, create, and utilize social groups to manage stressful conditions.

Moreover, evidence suggests that social support may play a more protective role for girls, than for boys (Llabre & Hadi, 1997). Landman-Peeters et al. (2005) specifically found a three-way interaction between gender, stressful circumstances, and perceived social support on depression symptoms. They found that under high stress females experienced more depressive symptoms than males, especially when they feel low social support.

To our knowledge, this three-way interaction has not been tested on exposure to violence –a very stressful circumstance– for Mexican adolescents. The present study aimed to fill this gap by examining gender differences in the moderating role of social support in the relation between violence exposure and depression symptoms.

The present study

Parental support (*vs.* other sort of social support) was proposed to be a relevant moderator factor for decreasing the negative outcomes of exposure to violence on depression. However, gender was predicted to play a role in this process. As shown in Figure 1, a three-way interaction (also called *moderated moderation* by Hayes, 2013) was predicted, where the effect of exposure to violence on depression would be buffered by parental support depending on gender. In other words, we expected to find gender differences in whether parental support moderates the relationship between exposure to violence and Mexican adolescents' depression.

Taking into account previous considerations, we proposed the following hypotheses. Firstly, exposure to violence would increase adolescents' level of depression (H_1). Secondly, social support would moderate this effect (H_2), i.e, the effect of exposure to violence on depression would be lower for participants with a high level of parental support than for

participants who have a low level of support from their parents. Thirdly, as it is shown in Figure 1, such moderating parental role would be stronger for girls than for boys (H_3).
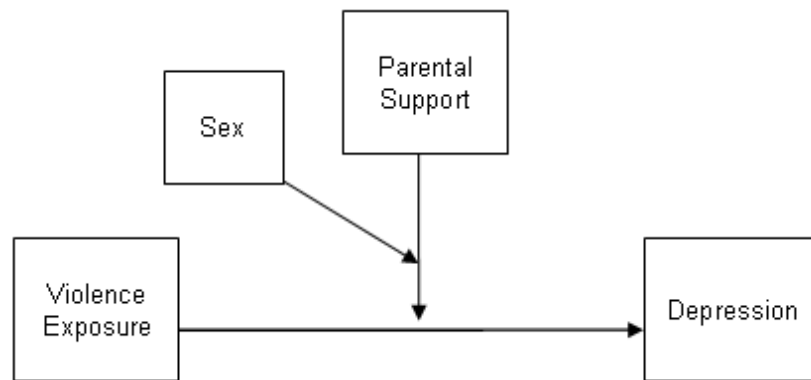
Figure 1. Conceptual diagram of a moderation of the effect of violence exposure on depression by social support depending on sex

Method

The study used a quantitative, non-experimental, cross-sectional correlation design for the observation and measurement of phenomena in their natural context.

Participants

A total of 606 secondary students volunteered to participate in this study. About half of the sample was female (53.6%). Participants were in the first (37.3%), second (34.4%), and third (28.3%) academic grades of a public school in the metropolitan area of Monterrey, Mexico. Age range was 11-16 years, ($M = 13.07$; $SD = .94$).

The adolescents were recruited by intentional sampling through the Youth Institute, a municipal entity engaged in promoting and fully developing the capabilities and skills of youth. Only those students who agreed to participate took part of the study. The application of the surveys was conducted during the morning in their respective classrooms, and lasted approximately 45 minutes. The anonymity of participants was protected.

Measures

  Exposure to Violence Questionnaire (EVC). Developed by Orue and Calvete (2010), it consists of 21 items about exposure to violence in four contexts: school, neighborhood, home, and television. The items include both direct victimization and indirect exposure (which refers to when the teens witness violence): 9 items regard direct exposure or victimization, e.g., "How often have you been hit or physically harmed", and 12 items regard indirect exposure with questions such as, "How often have you seen someone threatening to hit another person in […]". The questionnaire is a Likert five points scale: 0 = *never*, 1 = *once*, 2 = *sometimes*, 3 = *many times*, and 4 = *every day.* Items were averaged to create the variable *Exposure to Violence* (α = .88).

  Student Social Support Scale (SSSS). A multidimensional 60-item scale created by Nolten (1994) to measure perceived social support by students from four sources: *parents* (e.g., "They care about me", α = .90); *teachers* (e.g., "They explain things to me when I do not understand or when I am confused", α = .90); *classmates* (e.g., "They help me with class work", α = .90); and *best friend* (e.g., "He/she accompanies me when I feel alone or sad", α = .94). Items are formulated in a positive direction and answers are provided in response to availability and importance. Fernández and Ongarato (2005) adapted SSSS to Spanish using a four point Likert scale (1 = *never or almost never*, 2 = *sometimes*, 3 = *frequently,* and 4 *almost always*). Items were averaged for each source of support.

  Kutcher Adolescent Depression Scale (KADS-6). Six item abbreviated version, specifically used to diagnose and assess the severity of adolescent depression (LeBlanc, Almudevar, Brooks & Kutcher, 2002). Responses are in four-point Likert type: 1 = *rarely*, 2 = *sometimes*, 3 = *most of the time*, and 4 = *all the time*. An item example is "Over the last week, how have you been regarding low mood, sadness, feeling blah or down, depressed, or just can't be bothered". Items were averaged to create the variable *Depression* (α = .83).

Data analysis

The present study aimed to analyze whether parental support (over other sorts of social support) would buffer the effect of exposure to violence on negative outcomes such as depression, especially in Mexican adolescent girls (*vs.* adolescent boys). Prior to conducting analyses, all continuous measures were standardized for correlation and regression analyses. Sex was considered a dummy variable (coded: 0 = Girls; 1 = Boys). Five participants were systematically skipped from the analyses since they were more than 3 *SD* over the mean in Exposure to Violence. Some other cases were deleted in each analysis due to missing data.

As a first step, some descriptive findings (i.e., means and standard deviations for all variables) are presented, and bivariate correlations for these variables were conducted. Then, we explored gender differences on violence exposure, depression, and social support using two *independent samples T-tests*, comparing boys and girls.

Finally, multiple regression analyses were used to examine the expected three-way interaction (also called *moderated moderation* by Hayes, 2013). In order to perform such analyses, we used the macro PROCESS, a freely-available computational tool for SPSS recently developed by Hayes (2013) that allows probing and visualizing – among other analyses– three-way interactions. In this specific analysis *violence exposure* (X) was considered the focal predictor, *parental support* (M) the primary moderator, *sex* (W) the secondary moderator, and *depression*, the outcome variable (Y). We also controlled for academic level, used as covariable (C). PROCESS calculated all the necessary products, estimated the best-fitting OLS regression model, and probed the three-way interaction. According to Hayes (2013) a three-way interaction refers to a situation in which the effect of X on Y can also depend multiplicatively on M (primary moderator) and W (secondary moderator). In other words, this kind of interaction allows the moderation of the effect of violence exposure (X) on depression (Y) by parental support (M) to depend on sex (W). Then, inference was undertaken by selecting values of sex (a dichotomous variable: girls and boys) and testing whether the conditional

interaction between violence exposure (a continuous variable) and parental support (a continuous variable) was statistically different from zero at those values. For this reason, we chose to represent this three-way interaction by two different figures: the first one would represent the possible interaction between violence exposure and parental support for girls, and the other one would represent the same interaction for boys.

Results

Descriptive Findings and Correlations

Overall, the variables of the study were related to each other. As shown in Table 1, exposure to violence was positively related to adolescents' depression, whereas parental support was negatively related to depression and violence exposure.

Table 1

Correlations among Violence Exposure, Depression, and Social Support for the total sample

	1	2	3	4	5	6	M	SD
1. Violence Exposure	1	.29**	−.15**	−.27**	−.12**	−.06	1.06	.53
2. Depression		1	−.25**	−.12**	−.12**	−.06	.76	.67
3. Parental Support			1	.42***	.32***	.24***	2.99	.68
4. Teacher Support				1	.34***	.27***	2.75	.61
5. Classmates support					1	.54***	3.05	.64
6. Best friends support						1	3.31	.67

** $p < .01$

Gender Differences

Gender seemed to play a role when studying exposure to violence and its outcomes for Mexican adolescents. As such, two independent sample T-tests showed that boys were slightly more exposed to violence ($M = 1.11$; $SD = .54$) than girls ($M = 1.02$; $SD = .50$), $t_{(542)} = 2.08$, $p = .038$. On the contrary, girls felt more depressive symptoms ($M = .86$; $SD = .67$) than boys ($M = .66$; $SD = .66$), $t_{(526)} = −3.47$, $p = .001$.

Regarding social support, boys perceived more support from parents (M = 3.09; SD = .64) than girls (M = 2.89; SD = .70), $t_{(532.75)}$ = 3.34, p = .001; whereas girls perceived more support from their peers: both classmates, $t_{(531)}$ = −2.82, p = .005 (M = 3.12; SD = .61 *vs.* boys M = 2.97; SD =.67); and best friends (M = 3.47; SD = .56 *vs.* boys M = 3.14; SD = .73), $t_{(465,00)}$ = −5.73, p < .001. No differences for teacher support were found, $t_{(532)}$ = −.57, p = .57.

Three-way interaction. In order to test the assumption that we can find gender differences in whether parental support buffer the relationship between exposure to violence and adolescents' depression, analyses were conducted to test the Violence Exposure $\times$ Parental Support $\times$ Gender interaction in predicting depression symptoms by using the macro PROCESS for SPSS (Hayes, 2012, 2013)[4]. Violence exposure (X) was the focal predictor, family support (M) the primary moderator, sex (W) the secondary moderator, and depression, the outcome variable (Y). We examined such three-way interaction while controlling for academic level.

As shown in Table 2, exposure to violence increased depression, whereas parental support decreased it. The two-way interaction between exposure to violence and parental support was significant. Thus, the effect of exposure to violence on adolescents' depression generally varied depending on their parental support. However, there was also evidence of a three-way interaction between Violence Exposure, Parental Support, and Sex, which entailed that the magnitude of the moderation of the effect of exposure to violence on depression by parental support was different depending on sex. According to the analyses, the two-way interaction between exposure to violence and parental support was only significant in the case of adolescent girls, b = −.15, $t_{(509)}$ = −2.45, p = .014 (CI 95% = −.2664, −.0295), whereas there was no evidence of such moderation for adolescent boys, b = .06, $t_{(509)}$ = .73, p = .466 (CI 95% = −.0972, .2119).

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[4] Some cases were deleted due to missing data in some of the variables. The final sample was composed by 509 participants.

As shown in Figure 2, parental support buffered the effect of exposure to violence on girls' depression. Actually, the effect of exposure to violence on depression was stronger when their family support was relatively low, $b = .48$, $t_{(509)} = 5.69$, $p < .001$ (CI 95% = .3130, .6435), than when their family support was relatively high, $b = .18$, $t_{(509)} = 2.08$, $p = .038$ (CI 95% = .0104, .3603).

Table 2

Results from a Regression Analysis examining the moderation of the effect of violence exposure on depression by social support depending on sex

		Depression		
		Coeff.	*SE*	*t*
Intercept	i_1	.34**	.12	2.87
Violence Exposure (Z_X)	b_1	.33***	.06	5.24
Parental Support (Z_M)	b_2	−.29***	.06	−5.15
Sex (Z_W)	b_3	−.28**	.08	−3.31
Violence Exposure × Parental Support ($Z_X Z_M$)	b_4	−.15*	.06	−2.45
Violence Exposure × Sex ($Z_X Z_W$)	b_5	−.07	.09	−.83
Parental Support × Sex ($Z_M Z_W$)	b_6	.14	.08	1.65
Violence Exposure × Parental Support × Sex ($Z_X Z_M Z_W$)	b_7	.20*	.10	2.07
Academic Grade (Z_C)	b_8	−.11*	.05	−2.16

$$R^2 = .18$$
$$F_{(8,500)} = 13.47, p < .001$$

*** $p < .001$; ** $p < .01$; * $p < .05$

As predicted, only parental support moderated the effect of exposure to violence on depression, whereas other sorts of social support did not modify this relationship. The two-way interaction between violence exposure and teacher support was not significant, $b = −.01$, $t_{(509)} = −.12$, $p = .906$ (CI 95% = −.1311, .1163). Likewise, violence exposure did not interact with either

best friends support, $b = .03$, $t_{(508)} = .43$, $p = .666$ (CI 95% = −.1071, .1675) or classmates

support, $b = .01$, $t_{(508)} = .19$, $p = .846$ (CI 95% = −.1175, .1433).
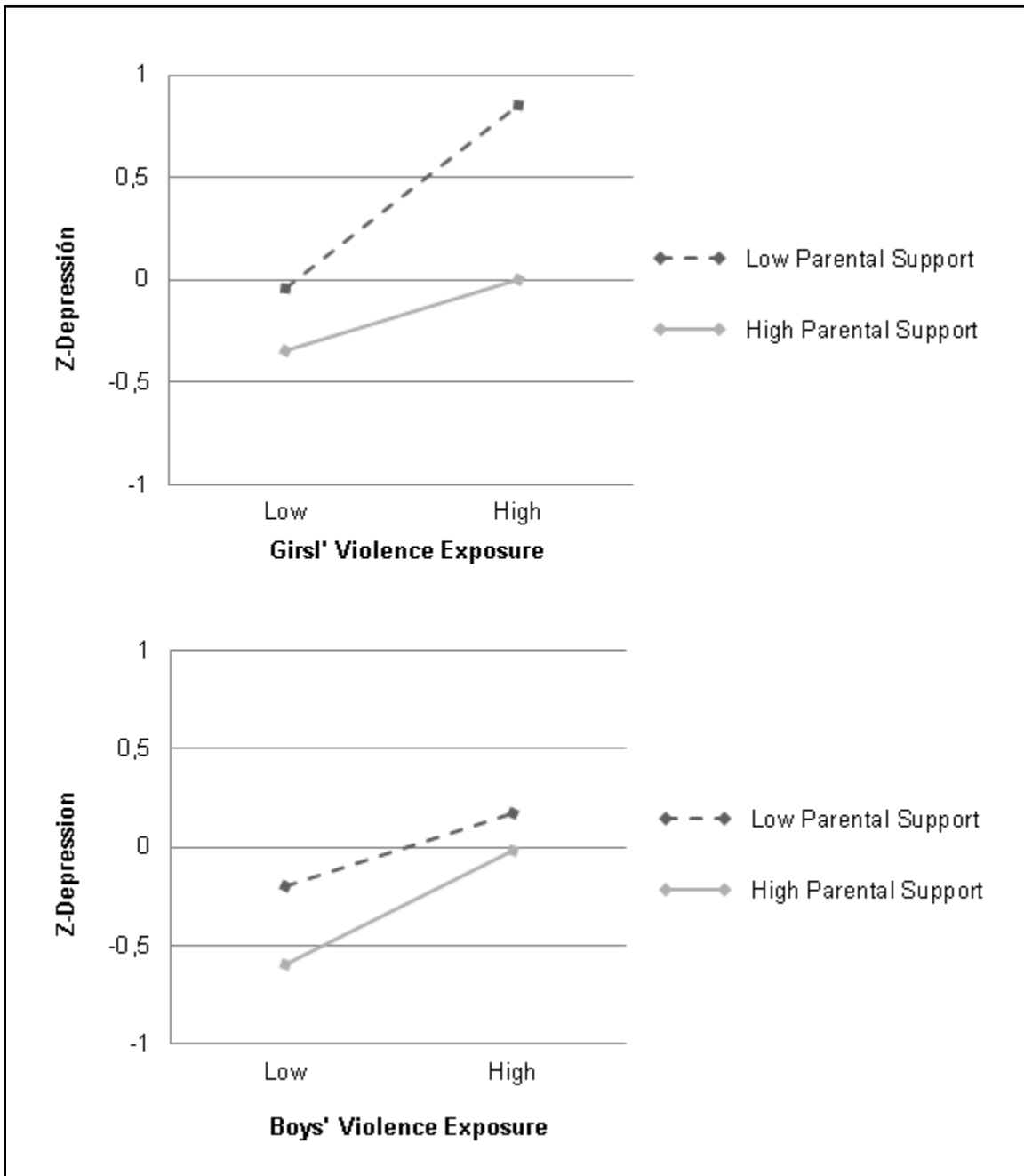

Figure 2. Three-way interaction between violence exposure, parental support, and sex

Discussion

Overall, the results of this study provided confirmation of the effects of generalized exposure to violence on depressive symptoms as well as the role played by gender when studying exposure to violence and its outcomes.

Boys were more exposed to violence than girls, whereas girls felt more depressed than boys. These results are consistent with Mendelson et al. (2010), who found that a higher percentage of male than female students reported having been exposed to at least one type of violence in their lives. Likewise, depression symptoms were greater in girls than in boys, as reported by Velásquez and Montgomery (2009) and Mendelson et al. (2010).

Regarding social support, on one hand, boys received more parental support than girls. This may refer to Mexican-oriented parents affording boys more freedom to learn about the outside world than girls (Azmitia & Brown, 2002). On the other hand, girls received more support from classmates and best friends than boys did. This may be in line with the findings of Gecková, Van Dijk, Stewart, Groothoff, and Post (2003) that females reported experiencing higher levels of social support, and Rueger, Malecki, and Demaray (2008) who confirmed that girls tended to perceive more support (than boys) from classmates and close friends. This may be related to spending more time thinking and being with peers (Richards, Crowe, Larson, & Swar, 1998), probably seeking help for emotional problems (Rickwood & Braithwaite, 1994). Lastly, the boys' and girls' unified perception of teacher social support may be related to a less emotionally-charged relationship. Teens in Mexico perceive the highest level of support from family, followed by friends (Barcelata, Granados, & Ramírez, 2013).

Results also revealed that social support from parents (over other sort of social support) buffered the effect of exposure to violence on depression for Mexican adolescent girls but not for boys. In the case of girls, there was a stronger effect of exposure to violence on depression when family support was relatively low than when their family support was relatively high. However, this finding highlights the importance of parent support to adolescents' mental health

and functioning (White, 2009), buffering only the effect of exposure to violence on girls'
depressive symptoms. This finding may derive from the fact that girls use social support as a
coping mechanism more than boys do (Frydenberg & Lewis, 1993), and that social support
plays a more protective role for girls (compared to boys) exposed to stress events (Llabre &
Hadi, 1997).

As previously mentioned, boys declared being exposed to significantly more violence.
This fact, connected to a stronger relation between social support and depression in girls than
boys (supported by Landman-Peeters et al., 2005), may explain the buffering role of parental
support that was only confirmed for girls.

Taken together, these findings may have different interpretations and consequences. A
classical and coherent explanation may derive from Gilligan's (1982) conclusions regarding
girls' social perspective in moral decision making. According to Jackson and Warren (2000),
girls may be more likely to seek social support after exposure to stress events compared to
boys. In addition, social support may not be the most relevant protective factor for males. From
our study, we might conclude that whereas parental support seemed to be an efficient
moderator for the negative outcomes of exposure to violence for girls, we still need to identify a
more relevant protective factor for boys, who are more exposed to violence in Mexico.

This study confirmed gender differences in the buffer-effect of social support in the
relation between exposure to violence and depression in Mexican adolescents. This result
supports and extends those of Landman-Peeters et al. (2005) who found a three-way interaction
between gender, perceived social support, and problems in parent-adolescent communication
on depression.

It is important to notice that this research has some limitations. Firstly, our design does
not allow us to assume causation between the variables. Secondly, our measures were self-
reported by participants, which might be affected by social desirability concerns. Thirdly, we did
not use a representative sample, so we have to be cautious about the generalizability of these

results. Additionally, in this paper we measured overall exposure to violence using a questionnaire designed by Orue and Calvete (2010), which measures violence in four different contexts: school, neighborhood/community, home, and television. That is, we investigated the sum of the effects of these four different types of variables. Given that our goal was to establish how the effects of overall violence exposure are moderated by social support and gender, we did not investigate the different effects of each type of violence. Moreover, there are other important type of violence that are not included in this questionnaire, such as sexual and severe dating violence, where girls might tend to be more exposed than boys (Foshee, 1996; O'Keefe, 1997). Thus, it is important for further studies to address the specific effects of each types of violence.

In conclusion, this study contributes to clarifying the relationship between exposure to violence and depression, and the buffering role of parental support in this process. We argued that parental support (*vs.* other sorts of social support) may serve as a protective factor against depression after exposure to violence especially for girls, whereas more research should be conducted in order to detect an efficient protective mechanism for boys who are exposed to violence. These results should be considered when implementing social interventions designed to decrease the impact of exposure to violence.

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