

# *Propiedades psicométricas de una escala para medir desconexión moral en niños mexicanos*

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## Resumen

La desconexión moral tiene como consecuencia efectos negativos para el desarrollo psicosocial en la niñez, por lo cual se hace necesario contar con escalas para evaluarla. En el presente estudio se analizaron las propiedades psicométricas de la escala Desconexión Moral en Situaciones de Acoso en niños (DMAE). Participaron 661 estudiantes mexicanos de 5.º (51 %) y 6.º grado (49 %), 48 % niñas ( $M$  edad = 10.51,  $DE$  = .64 años) y 52 % niños ( $M$  edad = 10.59,  $DE$  = .68 años). Se analizó la validez (estructura interna y concurrente), invariancia de medida para ambos sexos y fiabilidad de la escala. De los resultados del análisis factorial confirmatorio se infirió que el modelo de medición multidimensional que mide la justificación moral, la difusión de la responsabilidad y la atribución de la culpa presenta mejor ajuste a los datos que el unidimensional. Además, se encontró que la DMAE presenta invariancia de medición en ambos sexos y evidencias de validez concurrente. Se concluye que la escala cuenta con propiedades psicométricas adecuadas para la medición de la desconexión moral en niños mexicanos.

*Palabras claves:* medición, validez, desconexión moral, emociones morales, acoso escolar.

## *Psychometric Properties of a Scale Measuring Moral Disengagement in Mexican Children*

### Abstract

The moral disengagement has negative effects for psychosocial development in childhood, which makes it necessary to have scales to evaluate it. The present study aimed to analyze the psychometric properties of the *Moral Disengagement in Children Situations of Bullying* (DMAE, its initials in Spanish) scale. 661 Mexican students participated from 5th grade (51%) and 6th grade (49%), 48% girls ( $M$  age = 10.51,  $SD$  = .64 years) and 52% boys ( $M$  age = 10.59,  $SD$  = .68 years). The validity (internal and concurrent), measurement invariance for both sexes and reliability of the scale were analyzed. From the results of the confirmatory factor analysis, it was inferred that the multidimensional measurement model that measures *moral justification*, *diffusion of responsibility* and *attribution of blame* presents a better fit to the data than the one-dimensional one. It was also found that the DMAE presents measurement invariance in both sexes and evidence of concurrent validity. It was concluded that the scale has adequate psychometric properties for the measurement of moral disengagement in Mexican children

*Keywords:* measurement, validity, moral disengagement, moral emotions, bullying.

# *Propriedades psicométricas de uma escala para medir desconexão moral em crianças mexicanas*

Resumo

A desconexão moral tem como consequência efeitos negativos para o desenvolvimento psicossocial na infância, o que torna necessário contar com escalas para avaliá-la. Neste estudo, foram analisadas as propriedades psicométricas da escala Desconexão Moral em Situações de Assédio em Crianças. Participaram 661 estudantes mexicanos do 5º (51 %) e 6º anos (49 %), 48 % meninas (M idade = 10.51, DP = .64 anos) e 52 % meninos (M idade = 10.59, DP = .68 anos). Foi analisada a validade (estrutura interna e concorrente), invariância de medida para ambos os sexos e confiabilidade da escala. Dos resultados da análise fatorial confirmatória, foi inferido que o modelo de medição multidimensional que mede a justificativa moral, a difusão da responsabilidade e a atribuição da culpa apresenta melhor ajuste aos dados do que o unidimensional. Além disso, foi constatado que a escala apresenta invariância de medida em ambos os sexos e evidências de validade concorrente. Conclui-se que a escala possui propriedades psicométricas adequadas para a medição da desconexão moral em crianças mexicanas.

*Palavras-chaves:* medição, validade, desconexão moral, emoções morais, assédio escolar.

## **Introduction**

School violence is related to difficulties in the psychosocial development of the students involved in it. The victims report academic difficulties, depression and problems of social adaptation (Arseneault et al., 2006; Espegale, Hong, Rao, & Low, 2013). On the offender's side problems of school discipline, substance abuse and social behavior are described (Feldman et al., 2014; Kim, Catalano, Haggerty, & Abbott, 2011). Bullying among students, which involves repeated and intentional aggressions against peers who cannot defend themselves (Olweus, 1991; Volk, Dane, & Marini, 2014), occurs in different regions of the world (Craig et al., 2009; Eljach, 2011; Garaigordobil & Machimbarrena, 2017; Higueta-Gutiérrez & Cardona-Arias, 2017). In Mexico, in particular, this problem affects a considerable number of students (Mendoza, Rojas, & Barrera, 2017; National Institute of Statistic and Geography [INEGI by its Spanish Acronym], 2015; Valdés, Martínez, & Carlos, 2018).

The study of morality is a fruitful field to the understand bullying among students (Thornberg, Pozzoli, Gini, & Jungert, 2015; Valdés, Carlos, Wendlandt, & Ramírez, 2016). Moral behavior is related to judgments and moral emotions (Nucci, 2001; Smetana, 2013). Moral judgments involve assessments of the effects of social behaviors or situations for the well-being of others (Malti & Ongley, 2014; Paxton & Greene, 2010). On the other hand, moral emotions refer to affective experiences associated with social situations that imply moral norms (Tangney, Stuewig, & Mashek, 2007).

The cognitive-social theory holds that moral domain is related to concerns of the individual about the effects

of their behavior on the welfare of others (Gibbs, 2014, Smetana, Jambon, & Ball, 2014). The moral domain plays a central role in the regulation of social behavior because its norms act in different contexts without the need for authority figures, rewards, punishments or social pressure (Levasseur, Desbiens, & Bowen, 2017, Smetana, 2006). During childhood, moral standards are developed that allows to discern what's morally right or wrong within a cultural context (Echavarría, & Vasco, 2006; Hymel & Bonnano, 2014). In general, compliance with moral standards is a source of pride for the individual, while their violation is linked to emotions of shame and guilt (Bandura, 1999).

Sometimes there is a contradiction between moral standards and the behavior of people (Caravita, Siktsema, Rambaran, & Gini, 2014). To explain this situation, Bandura (2002) uses the moral disengagement construct, which encompasses cognitive mechanisms that reduce the discomfort caused by behaviors that violate personal standards and/or moral norms (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). According to Paciello, Fida, Tramontano, Lupinetti and Caprara (2008) these mechanisms focus on behavior, causing non-moral behavior to be valued in a positive way (e.g., moral justification, advantageous comparison and euphemistic labels); personal responsibility, operating to minimize or renounce commitment to non-moral conduct (e.g., displacement and diffusion of responsibility); the consequences of the behavior, distorting the damage caused to the victim (e.g., ignoring, minimizing or distorting the consequences) or who receives the behavior, act in a way that allows the victim to be devalued or held responsible (e.g., dehumanization, attribution of guilt).

Evidence suggests that through the mechanisms of moral disengagement causes, consequences and responsibility for non-moral behavior towards others are distorted (Almeida, Correia, & Marinho, 2010; Aly, Taylor, & Karnovsky, 2014; Bandura, 1986, 1990). Also, moral disengagement is linked to disruptive behaviors, such as the use of substances (Newton, Havard, & Teesson, 2012; Passini, 2012), criminal behavior (Newton & Bussey, 2012) and bullying (Gini, Pozzoli, & Hymel, 2014; Graham, 2016; Valdebenito, Ttofi, & Eisner, 2015).

Moral disengagement is a valuable construct in bullying's investigation (Campaert, Nocentini, & Menesini, 2017; Romero & Kyriacou, 2016; Thornberg & Jungert, 2014; van Noorden, Haselager, Cillessen, & Bukowski, 2014). It has been found that it's linked with greater frequency of aggression towards peers (Menesini, Palladino, & Nocentini, 2015; Obermann, 2011; Wang, Ryoo, Swearer, Turner, & Goldberg, 2017) and with the role of an encouraging bystander in the face of bullying (Levasseur et al., 2017; Wang, Yang, Gao, Lei, & Wang, 2017).

Although there are several studies focused on the validation of scales of measurement of moral disengagement (Çapan & Bakioglu, 2016, Gini, Pozzoli, & Bussey, 2015, Rubio-Garay, Amor, & Carrasco, 2017) controversies still persist regarding the measurement of this construct (Greenhalgh, Watt, & Schutte, 2015). These are related to: (a) Internal structure of the scales, in addition to the original scale that measures eight mechanisms of moral disengagement (Bandura et al., 1996) models of one (Çapan & Bakioglu, 2016; Pelton, Gound, Forehand, & Brody, 2004), three (Rubio-Garay et al., 2017) and four factors (Newton, Stapinski, Champion, Teesson, & Bussey, 2016) are reported; (b) Measurement of the moral disengagement in a general or contextual way to a situation; and (c) Measurement techniques, evaluate the construct through ethical dilemmas (Paulino Avilés, & Fonseca, 2016, Stevens, Deuling, & Armenakis, 2012), interviews (De Graaff, Schut, Verweij, Vermetten, & Giebels, 2016) or Likert-type self-report scales (Çapan & Bakioglu, 2016; Newton et al., 2016; Paciello et al., 2008).

In addition, limitations in the measurement of moral disengagement are inferred from the review of the literature. First, we identified only one scale that measures the construct in Swedish children from 10 to 14 years in the specific context of school bullying, it measures seven mechanisms: moral justification, euphemistic language, advantageous comparisons, displacement of responsibility, distortion of consequences and attribution to the victim (Thornberg & Jungert, 2014), however, the available evidence suggests the mechanisms of moral disengagement are influenced by the social context of behavior (Bandura, 1999; Boardley

& Kavusannu, 2007; Greenhalgh et al., 2015; Houwing & Bussey, 2017; Moore, 2015). For example, the literature reported that the expression of moral disengagement's mechanisms in childhood and adolescence is influenced by parents, peers and classroom norms (Camodeca & Taraschi, 2015; Caravita et al., 2014; Pozzoli, Gini, & Vieno, 2012). Second, no studies were found comparing the adjustment of different theoretical models of construct measurement in situations of bullying; however, as mentioned before, there are differences in the internal structure of the measurement scales described in the literature. Thirdly, in the literature's review, no studies were found that analyze the measurement invariance in both sexes of the scales, despite reported differences in the frequency with which boys and girls use moral disengagement mechanisms (Almeida et al., 2010; Kokkinos, Voulgaridou, Mandrali, & Parousidou, 2016; Menesini et al., 2015). Therefore is necessary to specify if these differences are due to a measurement bias or involve different levels of expression of the trait. Fourth, and last, studies that report robust psychometric properties of scales to measure moral disengagement in children in situations of bullying were not identified in Mexico.

In this context, the present study intends to develop a scale *Moral Disconnection in Situations of School Bullying in Mexican Children* (DMAE, for its acronym in Spanish) with robust psychometric properties. Mechanisms of moral disengagement selection of the measured in the DMAE respond to theoretical and practical considerations. From the theoretical angle, consistency of the scale is taken care of with Bandura's proposal (1990, 1999, 2002), for this purpose, mechanisms focused on behavior (moral justification), personal responsibility (diffusion of responsibility) and who receives the aggression (attribution of guilt). From the practical point of view, mechanisms identified in the focus groups are included with Mexican students, which favor the cultural sensitivity of the scale. It's also valued that in the literature the mechanisms measured with low moral sensitivity and harassing behaviors are linked (Perren, Gutzwiller-Helfenfinger, Malti, & Hymel, 2012; Malti, Gasser, & Buchmann, 2009; Pozzoli et al., 2012; Robson & Witenberg, 2013; Thornberg & Jungert, 2014).

As a result of both types of considerations (theoretical and practical) in the DMEA are measured the mechanisms of: (a) moral justification, it implies evaluating a harmful behavior as useful and socially worthy (De Caroli & Sagone, 2014; Thornberg & Jungert, 2014); (b) diffusion of responsibility, involves diluting the fault for the non-moral conduct in the group (Bandura, Underwood, & Fromson, 1975; Caravita et al., 2014) and (c) attribution of guilt, where it's considered that the aggressive behavior is provoked by the victim (Newton et al., 2016; Pozzoli et al., 2012).

The study analyzes the content validity of the scale through expert judgment. Subsequently, to investigate the validity of the internal structure, a comparison of a three-dimensional model with a one-dimensional alternative model is made (see Figure 1) and the measurement invariance is evaluated for both sexes of the scale. Finally, evidence of concurrent validity is analyzed through the relationship of scale scores with empathy and compassion. This is because the available evidence suggests that moral disengagement is negatively related to both moral emotions (Barriga, Sullivan-Cosetti, & Gibbs, 2009; Thornberg et al., 2015).

## Method

### Participants

18 urban primary schools in three cities (six per city) from the state of Sonora, Mexico, were chosen in a non-probabilistic manner. The initial criterion of inclusion was the directors of the schools' availability to participate in the study. Subsequently, through a simple probabilistic sampling with replacement ( $p = .5$ ,  $q = 95\%$ , error = 5%), 661 students of the 5<sup>th</sup> (51%) and 6<sup>th</sup> grades were selected, (49%) girls ( $M$  age = 10.51,  $SD = .64$  years old) and 51% boys ( $M$  age = 10.59,  $SD = .68$  years old) with an age range between 9 and 13 years.

### Instruments

*Moral disengagement.* Based on the literature review (Bandura et al., 1996, Thornberg & Jungert, 2014), a scale was developed to measure *Moral Disconnection in Child*

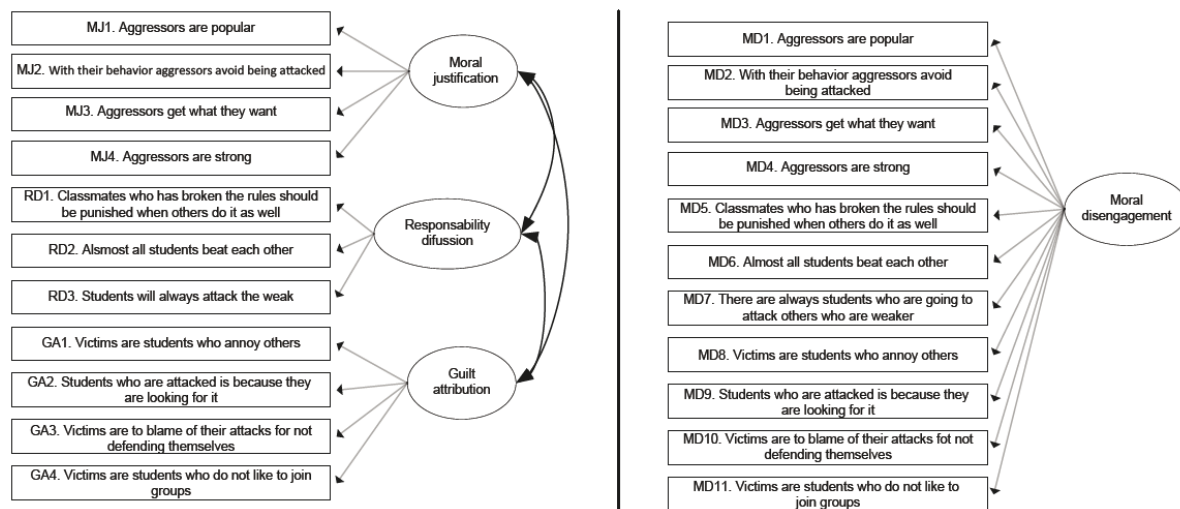


Figure 1. Theoretical proposals to measure the roles of student spectators of bullying.

*Bullying Situations* (DMAE). It's composed of 11 items that measure the mechanisms of: (a) *Moral justification* (4 items, e.g., *Aggressors, with their behavior, prevent themselves from being attacked*), (b) *Dissemination of responsibility* (3 items, e.g., *Almost all students stick together*) and (c) *Attribution of guilt* (4 items, e.g., *Victims are to blame for not defending themselves*). A Likert response format was used from 0 (*never*), 1 (*almost never*), 2 (*sometimes*), 3 (*almost always*) to 4 (*always*).

*Empathy-Compassion. The Adolescent Measure of Empathy & Sympathy Scale* (AMES; Vossen, Piotrowski, & Valkenburg, 2015) was used, which measures: *cognitive empathy* (3 items,  $\Omega = 72$ ), understanding the emotional state of the other (e.g., *I can understand how another partner feels when he is attacked even before he tells me*); *affective empathy* (3 items,  $\Omega = 74$ ), experiencing the emotions of other people (e.g. *When a partner is sad I feel sad too*) and *compassion* (three items,  $\Omega = 71$ ), feeling worry and / or sadness about another person's situation (e.g., *I feel worried when a partner feels bad*). It was answered in a Likert type format with options from 0 (*never*) to 4 (*always*). The values of the three dimensions were added to form an index called empathy-compassion. Through a confirmatory factorial analysis, the adjustment of the measurement model to the data was confirmed ( $X^2 = 24.32$ ,  $df = 17$ ,  $p = .111$ ; SRMR = .05; AGFI = .97; CFI = .99; RMSEA = .03, IC 90 [.01 - .06]).

#### *Procedure*

Three focus groups, each with 12 elementary students were conducted. Participants were presented with situations of aggression among peers and were asked to elaborate



reasons to explain the behavior of the aggressors. Their responses were classified into the mechanisms of moral justification, diffusion of responsibility and attribution of blame. Subsequently, the students were presented with the definition of these mechanisms and asked to describe behaviors that exemplify their use in situations of bullying among students. Based on the information's analysis gathered in the focus groups, a first version of the instrument consisting of 15 items was prepared (five for each mechanism). This first version was submitted to content validity (theoretical, cultural and linguistic) by expert judgment (three researchers on the subject and five teachers). It was considered to keep 11 items that obtained a Kappa index of concordance between judges  $\geq .80$ .

To obtain the information, the objective of the study was presented to the selected schools' directors and their authorization was requested to access the students. The parents' written consent was sought for the children to answer the scale. The questionnaires administration was carried out in the students' usual classrooms by two researchers participating in the project and lasted, on average, 20 minutes.

#### *Data analysis*

The lost values were treated by the regression imputation method. First, we calculated the means, standard deviations, asymmetry and kurtosis of the items. Second, a confirmatory factor analysis (CFA) was calculated with the support of AMOS v. 22. The calculation of the CFA was carried out by means of the maximum likelihood estimation (ML) method. We used a bootstrap with 500 repetitions with a confidence interval of 95%, to ensure the calculations were not affected by problems of multivariate normality.

The adjustment indices  $X^2$  (Chi-square), SRMR (square root of standardized residual), AGFI (adjusted goodness-of-fit index), CFI (comparative adjustment index) and RMSEA IC 90 (RMSEA IC 90 (error of the square root of the approximation mean with its confidence interval)) were used. Values of  $X^2$  are considered acceptable with  $p > .001$ ; CFI y AGFI  $\geq .95$ ; SRMR y RMSEA  $\leq .05$  (Blunch, 2013; Byrne, 2010). To compare the fit of the models, the AIC (information criterion of Akaike) and the BIC (Bayesian information criterion) were used. In both cases, lower values are considered to indicate better adjustment (Kline, 2016, Wang & Wang, 2012).

For the analysis of the measurement invariance of the scale in both sexes, nested models were progressively estimated, which were compared to each other. In the first model, no restrictions were established (configural invariance); in the second, restrictions referring to the regression coefficients (metric invariance) were included;



in the third, restrictions were added to the factorial loads and to the intercepts of the factors (scalar invariance); and, finally, in a fourth model, restrictions were imposed regarding equivalences between factorial loads, intercepts, covariances and residual variances (residual invariance). As indicators of invariance differences  $\Delta X^2$  with  $p > .001$ , and  $\Delta CFI$  less than .01 were used (Blunch, 2013; Byrne, 2010). The concurrent validity of the scale was investigated by means of a multiple regression model supported by the AMOS .23. The effects of the mechanisms of moral disengagement (*moral justification, diffusion of responsibility and attribution of guilt*) were analyzed in empathy-compassion.

## Results

### *Descriptive analyzes*

Table 1 showed that students use the mechanisms of moral disengagement with little frequency. The values of asymmetry and kurtosis suggested the existence of univariate normality in the distribution of item scores.

Table 1

*Averages, standard deviations, asymmetry and kurtosis of the DMAE items.*

Items	M		SD		Asimetry		Curtosis	
	M	F	M	F	M	F	M	F
MJ 1	1.65	1.67	.95	.98	1.14	1.24	.30	.22
MJ 2	1.83	1.61	.99	.97	.83	1.31	-.61	.38
MJ 3	1.98	1.64	1.09	.96	.63	1.19	-1.03	.37
MJ 4	1.99	1.92	1.08	1.11	.64	.77	-.99	-.90
DR 1	1.93	1.70	1.02	1.04	.78	1.17	-.89	.20
DR 2	1.75	1.64	.95	.95	1.05	1.29	.14	.78
DR 3	1.79	1.75	.88	1.05	.95	1.04	-.33	-.40
AG 1	1.56	1.58	.76	.92	1.24	1.13	.72	.84
AG 2	1.72	1.47	1.03	.80	1.16	1.48	-.16	1.35
AG 3	1.63	1.46	.95	.88	1.18	1.64	.41	1.63
AG 4	1.75	1.66	.96	.95	1.05	1.23	.10	.30

*Note.* M = male; F = female; MJ = moral justification; DR = diffusion of responsibility; AG = attribution of guilt.

### *Confirmatory Factor Analysis (AFC for its acronym in Spanish)*

Significant relationships were found in both models between the observable indicators and the latent variables. In the multidimensional model, correlations between factors were significant, which suggests they measure a common latent dimension. However, it's inferred from the magnitude of these correlations that they measure different aspects of the latent construct (see Figure 2).

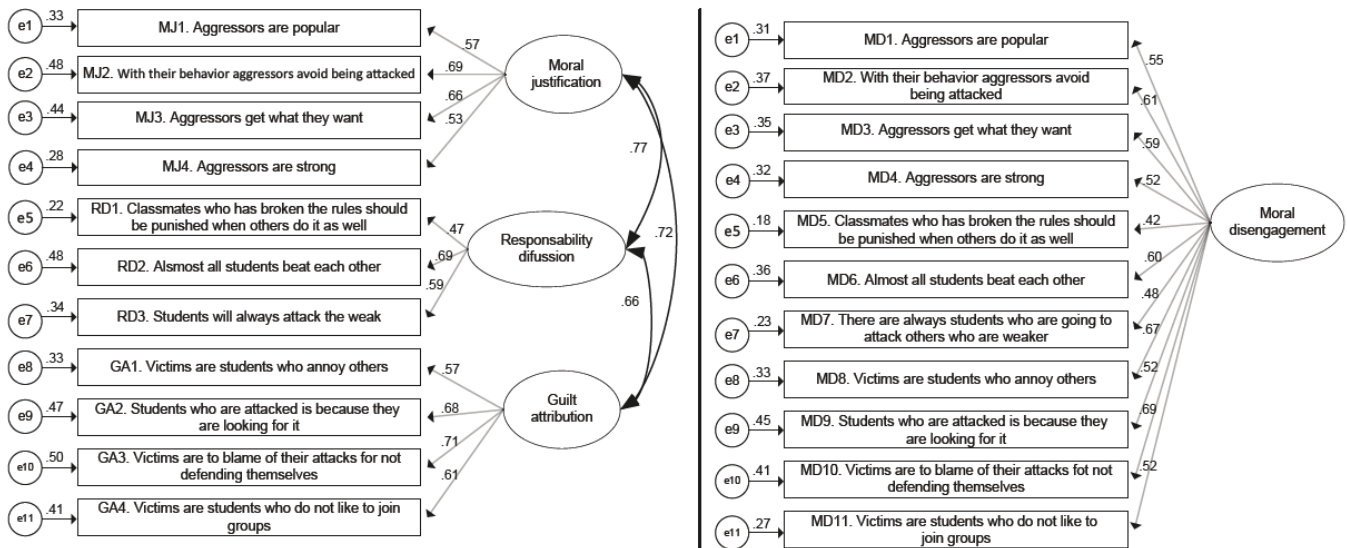


Figure 2. Results of the confirmatory factor analysis of the unidimensional and three-dimensional models of DMAE.

Table 2

DMAE's adjustment indices of the one-dimensional and three-dimensional model measurement.

Models	$\chi^2$	df	p	SMRM	AGFI	CFI	RMSEA	AIC	BIC
One factor model	69.34	37	.001	.03	.95	.97	.04 [.03 - .06]	128.38	246.97
Three factor model	53.13	40	.080	.03	.95	.98	.04 [.02 - .05]	122.23	228.54

The difference in Chi-square values between both models ( $\Delta\chi^2(3) = 16.21, p = .001$ ) was statistically significant. The value of the theoretical adjustment indexes (AIC and BIC) was lower in the multidimensional model, which suggests a better fit to the data (Kline, 2016, Wang & Wang, 2012).

#### Measure invariance by sex

For the analysis of the invariance in the measurement in both sexes, four nested models were compared: (a)  $M_1$ , without restrictions (configurational invariance); (b)  $M_2$ , with restrictions referring to the equality of factorial weights (metric invariance); (c)  $M_3$ , restrictions on factorial loads and intercepts (scalar invariance); and (d)  $M_4$ , restrictions

regarding the equivalence between factorial loads, intercepts, variances and residual covariances (strict invariance).

The Chi-squared values ( $\chi^2 = 123.71$ ,  $df = 80$ ,  $p = .001$ ) and of the adjustment indices (CFI = .96; AGFI = .91; RMSEA = .03, IC 90 [.02 - .03]) allow accepting the hypothesis of configural invariance ( $M_1$ ). With respect to the invariance metric ( $M_2$ ), scalar ( $M_3$ ) and strict ( $M_4$ ) the probabilities associated with the differences between the nested models ( $\Delta\chi^2_{M_2-M_1} = 9.96$ ,  $df = 8$ ,  $p < .267$ ;  $\Delta\chi^2_{M_3-M_1} = 15.7$ ,  $df = 14$ ,  $p = .332$ ;  $\Delta\chi^2_{M_4-M_1} = 44.29$ ,  $df = 26$ ,  $p = .014$ ) suggest the measurement model is equivalent between both sexes. This is confirmed by the  $\Delta$ CFI between the nested models, which are all less than .001 (see Table 3).

Table 3  
DMAE's results of invariance by sex.

Invariance Models	$\chi^2$	$df$	$\Delta\chi^2$	$\Delta df$	$p$	$\Delta$ CFI
M1 Configurational	123.71	80				
M2 Factorial Weights (Weak)	133.67	88	9.96	8	.001	<.000
M3 Intercepts (Strong)	139.41	94	15.7	14	.002	<.000
M4 Residuals (Strict)	168.00	106	44.29	26	.000	<.000

*Concurrent validity*

To investigate the DMAE’s concurrent validity, effects of the mechanisms of moral disengagement in the moral emotions of empathy-compassion were analyzed through a multiple regression test. From the results it’s inferred the mechanisms of moral disengagement (moral justification, diffusion of responsibility and attribution of guilt) are negatively related to the moral emotions of empathy-compassion (see Figure 3).

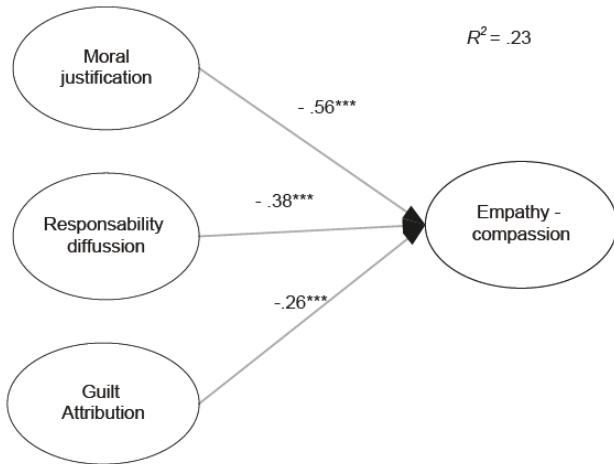


Figure 3. Results of the relationship regression model between the mechanisms of moral disengagement and the empathy-compassion moral emotions.

*Reliability of the DMAE.*

DMAE’s reliability was calculated using the McDonald Omega coefficient ( $\Omega$ ) and the average variance extracted (VME). Table 4 showed the values of both statistics are acceptable (Dunn, Baguley, & Brunsden, 2014).

Table 4  
DMAE’s Results of Reliability.

Moral disengagement mechanisms	$\Omega$	VME
Moral justification	.74	58%
Diffusion of responsibility	.70	52%
Attribution of guilt	.76	61%

**Discussion**

The present study analyzes evidences of validity (internal and concurrent structure), invariance of measure by sex and reliability of a scale to measure the moral disengagement in situations of bullying (DMAE) in Mexican children. Results show the DMAE presents adequate psychometric properties to measure the construct. The findings provide support for the multidimensional measurement model,

measurement invariance for both sexes, concurrent validity and the reliability of the AMD scores.

The descriptive results show the presence of moral disengagement mechanisms in Mexican children. However, the frequency of use of these mechanisms was low, as expected in non-clinical samples. In addition, consistent with what is reported in the literature, there is a greater prevalence of mechanisms of moral disengagement in boys (Carrera-Fernández, Cid-Fernández, Almeida, González-Fernández, & Lameiras-Fernández, 2018; De Caroli & Sagone, 2014; Malti et al., 2009).

Regarding the scale, it can be seen the multidimensional measurement model is better suited to the data than the one-dimensional model. This suggests that moral disengagement implies the use of mechanisms that, although related, measure different aspects of the construct (Bandura et al., 1996; Newton et al., 2016; Paciello et al., 2008). Theoretically this implies that it is necessary to analyze the associated factors and their effects on the behavior of each of these mechanisms. In the practical aspect, it shows the need to design specific interventions aimed at discouraging the use of the various forms of moral disengagement.

The scale's value is strengthened by its evidence of concurrent validity, which manifests itself in the negative relationship found between the mechanisms of moral disengagement and the moral emotions of empathy-compassion. These results are similar to what has been reported in the literature about the negative effects of moral disengagement on moral emotions, particularly empathy and compassion (Barriga et al., 2009; Bussey, Quinn, & Dobson, 2015; Perren & Gutzwiller-Helfenfinger, 2012; Thornberg et al., 2015). It is to be noted that moral justification presents the strongest negative relationship with moral emotions. This suggests the evaluation of aggressive behavior as socially convenient is particularly harmful for moral development in childhood (Eisenberg, 2000, Menesini et al 2003), since it inhibits the development of moral sensitivity, which exerts an important effect regulator in social behavior (Gasser, Gutzwiller-Helfenfinger, Latzko, & Malti, 2013; Thornberg et al., 2015).

The DMAE shows measurement invariance in both sexes. This is valuable in the study of moral disengagement and attends to a weakness of the scales reported. This finding implies the DMAE does not present biases of measurement of the construct associated with the sex of the student, which allows to adequately compare the expression of this trait in boys and girls.

The study has practical and theoretical implications. From the practical point of view, it provides a brief instrument regarding the number of reagents, with adequate validity and reliability for the measurement of moral disengagement

in primary school children in Mexico. From the theoretical perspective, it contributes to the delimitation of the construct by showing the value of the multidimensional measurement of it and allowing an unbiased comparison of the expression of the construct in students of both sexes.

Although this study constitutes a contribution to the measurement of moral disengagement in children, it also has limitations: firstly, the DMAE is a self-report scale, which implies the need to include in future studies an analysis of the social desirability of the answers (Navarro-González, Lorenzo-Seva, & Vigil-Colet, 2016); secondly, the scale does not include mechanisms of moral disengagement, in particular euphemistic language, advantageous comparisons, displacement of responsibility, distortion of consequences and dehumanization, this implies it is convenient to explore other theoretical models of measuring moral disengagement; in third place, the sample included students from urban primary schools in a specific region, which means that generalization of the findings should be made with caution in Mexico due to its wide ethnic and cultural diversity.

Finally, it is concluded the DMAE, because of its psychometric properties, constitutes a valuable tool in the study of moral disengagement in Mexican children. The DMAE, due to its number of reagents, is easy to administer, which allows its use in studies with large samples. In addition, this scale allows researchers to identify different mechanisms of moral disengagement; this is of practical importance since there is evidence of the negative effects of moral disengagement on moral emotions (Barriga et al., 2009; Thornberg et al., 2015).

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