

## Validation of a scale of roles of victims and aggressors associated with bullying

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## Abstract

**Introduction.** The school is a suitable space in which the interrelationships between students come together in one place, where basic rules of coexistence and learning society through the acquisition and practice of socio-cultural codes. However, these learning can be seen undermined by situations of school violence and that interfere with the peaceful environment that are intended to create to carry out tasks of learning and coexistence, may reach degrade the relationships of those involved in those areas; While there are many characteristics of the actors involved in such situations of violence, the "primary" stakeholders are those who attack (aggressors) and who receives the aggression (victims), forming a binary relationship to each other, constituting the center of the attack.

**Method.** Based on the item response theory by Rasch calibration reagents, exploratory and confirmatory factor analysis. The scales of victims and aggressors are validated, which were measured in public middle school with young people aged 12 to 17 years old; both scales formed 12 Likert items that measure the perception of students.

**Results.** Psychometric parameters obtained for confirmatory model of victims are suitable. The results show two dimensions on both scales, in the suffering of victims, "verbal violence / relational" and "physical / social violence", while the aggressors "verbal violence / physical" and "sexual violence / relational".

**Discussion and Conclusion.** It was found that both scales match in removing reagents that deal with: physical violence against the property of others, sexual violence related to touch the private parts of other people and relational violence referred to submission of others to do or not to do something; It discussed from conception of the culture of silence. We conclude that the scales analyzed together are suitable for use in subsequent analyzes psychometric tests.

**Keywords:** Aggression, Bullying, Middle School, Victims.

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## Resumen

**Introducción.** La escuela representa un espacio propicio en el que las interrelaciones entre los alumnos se conjugan en un mismo lugar, donde se aprenden reglas básicas de convivencia y socialización mediante la adquisición y práctica de códigos socio-culturales. Sin embargo, estos aprendizajes se pueden ver mermados por situaciones de violencia escolar, ya que interfieren en los ambientes pacíficos que se pretenden crear para llevar a cabo labores de aprendizaje y convivencia, pudiendo llegar a degradar las relaciones de quienes participan e intervienen en esos espacios; Si bien, existen múltiples características de los actores que intervienen en este tipo de situaciones de violencia, los actores “primarios” son quienes agreden (agresores) y quienes reciben la agresión (víctimas), conformando una relación binaria entre sí, constituyéndose como el centro de la agresión.

**Método.** Basados en la teoría de respuesta al ítem mediante la calibración de reactivos por Rasch, Análisis Factorial Exploratorio y Confirmatorio, se validan las escalas de víctimas y agresores. Las medidas fueron aplicadas en secundarias públicas con jóvenes entre 12 y 17 años de edad; ambas conformadas por 12 ítems escalares tipo Likert que miden la percepción de los alumnos.

**Resultados.** Los parámetros psicométricos obtenidos para ambos modelos fueron idóneos. Los resultados muestran dos dimensiones en ambas escalas, en la de víctimas el sufrir: “violencia verbal/relacional” y “violencia física/social”, mientras que la de agresores el infligir: “violencia verbal/física” y “violencia sexual/relacional”.

**Discusión y Conclusiones.** Se encontró que ambas escalas coinciden en la eliminación de reactivos que tienen que ver con: violencia física hacia las pertenencias de otros, violencia sexual relacionada a tocar las partes íntimas de otro y violencia social referido al sometimiento de otros para hacer o dejar de hacer algo; se discute desde la concepción de la cultura del silencio. Se concluye que las escalas analizadas en conjunto tienen valores psicométricos adecuados para ser utilizadas en posteriores análisis.

**Palabras Clave:** Acoso escolar, Agresión, Educación secundaria, Víctimas

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## Introduction

Two of the basic pillars of education that are designated by UNESCO are *learning to be* and *learning to live together*. However, curricular activities that are based on learning to know and learning to do, take more school load, leaving a little aside what has to do with being and training people. Since childhood, socialization practices have been acquired, so the school represents a propitious space in which these interrelationships between students, teachers, parents, society around them are combined in one place, to learn basic rules of peaceful democratic coexistence through the acquisition and practice of socio-cultural codes. However, by relating to different people, conflicts may arise, which are normal in all societies and most of them arise due to diversity (diversity as interests, thoughts, feelings, race, culture, being different than the others), but not knowing how to deal with these conflicts, can rise to levels of violence such as school harassment or bullying. This violence interferes in the peaceful environments that are intended to create to carry out work of learning and coexistence, since it degrades the relations of those who participate and intervene in those spaces; As Bourdieu and Passerson (1996) argue, not everything is positive, but it is possible to produce and perpetuate mechanisms of social domination that are reflected in different types of violence, including scholar harassment and bullying.

From this point on, it is necessary to understand that school harassment or or bullying refers to relationships where there is an imbalance of power between students, a relationship that is maintained over time, that is, it is repetitive, and has the objective of doing harm to its counterpart, that means it is intentional, and those who attack have the knowledge that their actions are not correct. There are various ways of attacking others, not only physically, but verbally (by nicknames, insults, etc.), socially (through social exclusion), sexually (relationships or sexual touches without consent), by electronic means (through media, social networks, etc.), where, regardless of how the parties are attacked, they will always have a connotation of psychological violence that affects the victim and the environment in which he or she works through Their interpersonal relationships.

Although there are multiple characteristics of the actors involved in school harassment, the "primaries" are those who attack (aggressors) and those who receive the aggression (victims), since they form a binary relation between them, representing the center of aggression. On the one hand is the victim, who is harassed or victimized when he or she feels coerced, degraded, humiliated, abused, intimidated, frightened, threatened, or suffering from

some kind of emotional and / or physical discomfort caused by one or more of his/her companions. While the aggressor is the one who starts the attack repeatedly against his/her partner (the victim), who consciously or unconsciously knows that by violating others he/she achieves a higher level of power within socialization networks (Kulig, Hall & Kalischuk, 2008). According to Rodríguez (2005), cited in Albaladejo (2011), the aggressors present four basic needs: need for protagonism, to feel superiority and power, to be different and the need to fill an emotional void.

Violent relationships between aggressors and victims disfavor the peaceful learning climate desirable for the well-being of students, weakening healthy coexistence and relational ties between peers; Which makes it necessary to know the disruptive behaviors that alter the peace and the roles that are assumed in this type of relationship, since different types of violence are found in the different social contexts, not being likely in all of them (Doménech and Íñiguez, 2002).

### *Objective*

Because of the above, the objective of this work is to validate the scale of victims and aggressors and their associated roles to school bullying, measuring the students' perceptions as they play the roles of victims and aggressors. This validation is carried out by means of a psychometric analysis of regional perspective, in order to assist in carrying out subsequent analyzes for the State of Sonora (Mexico).

## **Method**

### *Participants*

A total 2345 of students participated, all from public junior high school aged between 12 and 17 years old; 48.53% of men, 50.84% of women and 0.63% who did not answer the item of age. Educational levels in public junior high schools are 1, 2, and 3, with 937, 717, and 691 students, respectively, belonging to one of the 64 federal and general junior high schools within the State of Sonora, Mexico (See Table 1).

Table 1. *Distribution of students by region of the State of Sonora*

<i>Municipality</i>	<i>N</i>	<i>%</i>
Cost (Hermosillo)	709	30,3
Frontier (Caborca, Pitiquito, Agua Prieta)	579	24,7
South (Obregón, Guaymas, Empalme, Navojoa)	783	33,4
Mountain Range (Mazatán, Sahuaripa, Moctezuma, Huepac, Cumpas, Ures, Baviacora, Rayón, Carbó)	274	11,6
Total	2345	100,0

### *Instruments*

The instrument is a self-report that measures the students' perceptions on scales with Likert responses of five points, in which they are asked the behaviors of which they have been participants and those that have suffered (scale of aggressors and victims respectively).

*Aggressors' Scale* (Ortega and Del Rey, 2005), which evaluates aggressive behavior towards peers in relation to a month, from its different dimensions: physical, social, psychological, sexual and cyber bullying.

*Scale of types of school harassment or victim scale* (Valdés, 2013) collects information regarding the aggressive behaviors that the students receive from their pairs from its different dimensions: physical, social, psychological, sexual and cyber bullying.

Considering the measurements of Hair, Anderson, Tatham and Black (1999), Cronbach's Alpha should be above 0.70 to be acceptable. In the scale of aggressors, this value was 0.84, while in the scale of victims was obtained 0.85, thus adjusting both scales to an acceptable proposal of " $\alpha$ ".

### *Procedure*

To access the classrooms of the schools an exhibition about the objectives of the research had to be made. Once the authorization of the corresponding authorities was obtained,

written informed consent was requested from the parents of the adolescents who were selected to participate in the study. Finally, the volunteer participation of the students was guaranteed by guaranteeing the confidentiality of the information that they provided.

### *Statistical analysis*

Regarding the procedure for the analysis of the psychometric properties of the instrument, evidence of construct validity was established through a combination of statistical models: Rasch analysis, exploratory and confirmatory factor analysis, as well as reliability analysis, determined by the internal consistency of the scores. For this purpose, the Winsteps program for Reliability Analysis, Factorial Exploratory and Confirmatory was used for the calibration of reagents by Rasch, using the SPSS and AMOS data processor.

## **Results**

Firstly, the construct was validated through an analysis of the properties of the items, for which the partial credit model of the Rasch theory was used. It was found that the reagents of the scales of aggressors and victims comply with the proposed ranges, considering that acceptable standards for the Rash model, according to Writht and Linacre (1994), are within acceptable normal ranges (they conform to the expected norms) when the Infit and Outfit indicators have a range between 0.5 and 1.5, whereas for the biserial point (pbis), according to Chaves and Saade (2009) the ranges are acceptable to be greater than 0.30, and finally empirical discrimination (Disc) is within normality (conforming to the expected norms) according to González-Montesinos (2008) when the lower limit is greater than 0.90 and should be as close to 1 (see Table 2 and 3).

Table 2. *Descriptive statistics. Result of item calibration for aggressor scale*

<i>Entry</i>	<i>Name</i>	<i>Measure</i>	<i>Infit</i>	<i>Outfit</i>	<i>Pbis</i>	<i>Disc</i>
R38	Ignore them	44.58	1.19	1.14	0.66	0.77
R39	Do not let them participate	45.87	1.26	1.50	0.47	0.91
R40	Insult them	42.65	1.14	1.01	0.64	0.92
R41	Give them offensive nicknames	45.23	1.01	0.96	0.60	1.01
R42	Hide their belongings	43.74	0.99	0.99	0.59	0.97

R44	Hit them, kick them, push them	46.54	0.98	0.91	0.58	1.03
R45	Threaten them	49.33	0.82	0.83	0.42	1.07
R47	Touch the intimate parts of a peer	50.29	1.23	0.71	0.28	1.00
R48	Forcing a peer to touch your private parts	49.48	0.88	0.68	0.30	1.03
R49	Take a friend out of the group of friends	47.02	1.14	1.50	0.44	0.94
R50	Leave alone a teammate in team activities	48.73	0.91	1.20	0.45	1.00
R51	Make fun of peer physicist	48.32	0.91	0.84	0.51	1.05
R52	Attack him/her using Facebook and other electronic media	50.17	0.83	0.79	0.46	1.07

Table 3. *Descriptive statistics. Result of item calibration for the victim scale.*

Entry	Name	Measure	Infit	Outfit	Pbis	Disc
R6	They ignore me	-0.22	0.99	0.92	0.52	0.99
R8	They insult me	-0.42	0.84	0.75	0.62	1.18
R9	They give me offensive nicknames	-0.38	0.98	0.97	0.56	1.02
R10	They speak ill of me	-0.53	0.99	1.01	0.56	0.96
R11	They hide things from me	-0.06	1.03	1.01	0.50	0.95
R12	They steal things from me	-0.24	1.24	1.35	0.40	0.81
R13	They hit me	0.11	0.89	0.92	0.57	1.04
R14	They threaten me to be afraid	0.38	0.75	0.54	0.62	1.12
R15	They force me to do things I don't want to do	0.33	0.95	0.71	0.46	1.03
R16	I'm touched in my private parts	0.49	1.04	0.84	0.39	1.00
R18	I'm taken out from the group of friends	0.35	0.88	0.76	0.53	1.05



R19	They leave me alone in team activities	0	0.91	0.83	0.56	1.05
R20	They make fun of my physique	-0.07	0.96	0.81	0.54	1.05

However, in order to improve test standards, it was decided at the aggressor scale to remove reagents 43 "steal form them" and 46 "force them to do things they do not want" because they did not comply with acceptable data required by normality of the outfit (see Table II). Similarly, in the Victims Scale, it was decided to eliminate the reagents 7 "do not let me participate" and 17 "force me to touch their genitals" because they also did not meet acceptable standards of outfit normality (see Table 3).

In a second moment, a factorial analysis was carried out by the method of extraction of maximum likelihood and rotation of Oblimin with Kaiser for each one of the scales. A KMO (Kaiser-Meyer-Olkin) was obtained for the aggressor scale of 0.89 and for the victim scale of 0.90, both being in normality ranges (acceptable, expected), with the required lower limit being 0.70; A Bartlett sphericity test was also performed to support the adequacy of a factorial solution of (\*  $p = 0.00$ ), thus supporting the factorial solution procedure, in which two factors were extracted in both scales that explain in the Scale of aggressors the 32% of total variance and in the scale of victims the 39% (see Tables 4 and 5).

Table 4. *Factorial analysis for aggressor scale.*

Entry	Name	F1	F2	Communality
R40	Insult them	<b>0.783</b>	-0.144	0.407
R41	Give them offensive nicknames	<b>0.711</b>	-0.043	0.396
R42	Hide their belongings	<b>0.585</b>	0.037	0.315
R38	Ignor them	<b>0.574</b>	-0.017	0.280
R44	Kick them, kick them, push them	<b>0.564</b>	0.097	0.360
R51	Peer Physics Scams	<b>0.450</b>	0.255	0.363
R45	Threaten them	<b>0.360</b>	0.312	0.341
R39	Don't let them particpate	<b>0.354</b>	0.191	0.220
R48	Force a peer to touch your private	-	<b>0.793</b>	0.380

	parts	0.120		
R47	Touch the intimate parts of a peer	-	<b>0.593</b>	0.276
		0.054		
R49	Take a friend out of the group of friends	0.157	<b>0.539</b>	0.361
R52	Attack them using Facebook or other electronic means	0.219	<b>0.507</b>	0.372
R50	Leave a teammate alone in team activities	0.541	<b>0.433</b>	0.344

Table 5. Factorial analysis for victims scale

Entry	Name	F1	F2	Communality
R8	They insult me	<b>0.76</b>	-0.41	0.479
R9	They give me offensive nicknames	<b>0.68</b>	-0.39	0.405
R10	They speak ill of me	<b>0.65</b>	-0.36	0.360
R20	They make fun of my physique	<b>0.60</b>	-0.46	0.348
R19	They leave me alone in team activities	<b>0.54</b>	-0.53	0.365
R6	They ignore me	<b>0.53</b>	-0.31	0.268
R11	They hide my belongings	<b>0.49</b>	-0.42	0.297
R12	They stole my belongings	<b>0.41</b>	-0.37	0.244
R14	They threaten me to be afraid	0.54	<b>-0.74</b>	0.489
R15	They force me to do things I don't want	0.41	<b>-0.72</b>	0.413
R16	They touch by my private parts	0.31	<b>-0.59</b>	0.292
R18	They take me out from the group of friends	0.51	<b>-0.59</b>	0.393
R13	They hit me	0.55	<b>-0.59</b>	0.396

Note. The figures in "bold" indicate the highest factor loads.

In a third moment the confirmatory factorial analysis was carried out. In the aggressor scale, reagent 48 was discarded and reagent 12 was rejected in the victim scale, because they did not comply with the measures adjustments mentioned in the discussion. Eliminating these items, the scales presented adequate reliability parameters, represented in the following statistics of goodness of fit: GFI (Goodness Index of Adjustment) and AGFI (Adjusted Goodness of Adjustment Index) > .90 (Manzano and Zamora, 2009), CFI (Comparative Adjustment Index) > .90 (Bentler, 1990), SRMR (Standardized Root Mean Residual) <.05 (Steiger and Lind, 1980), and RMSEA (Mean Squat Approximation Error) <.08 Hair, Anderson, TathaM, and Black, 2010).

For the  $X^{2/gl}$  (probability of chi-square statistical significance) factor adjustments of both scales are not within the established standards as it is very sensitive to very large test samples and the RMSEA setting is located within the limits of tolerance; however, in the models as a whole an adequate adjustment is observed (see Tables 6 and 7).

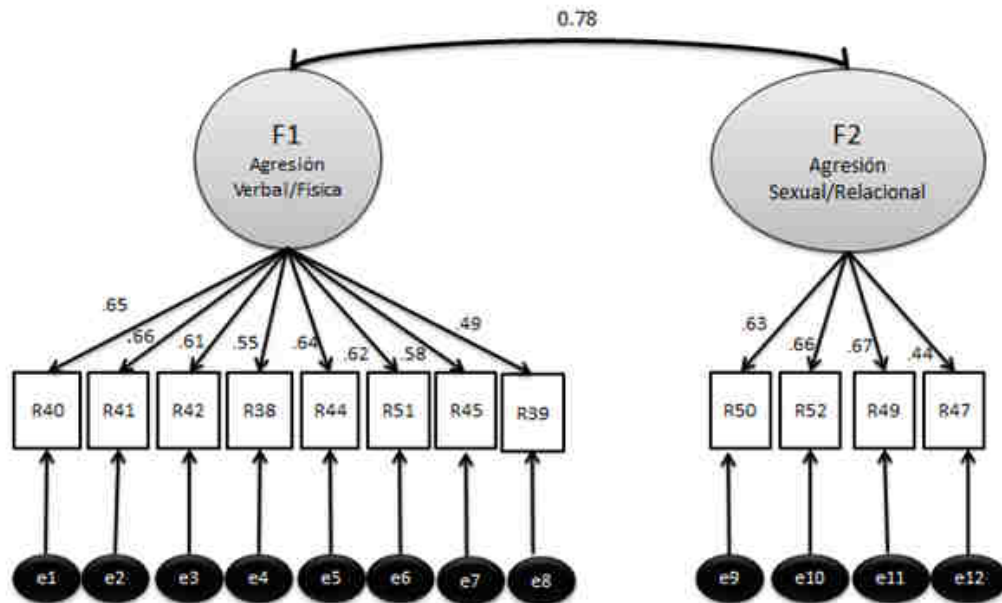
Table 6. *Confirmatory Factor Analysis: goodness indicators of aggressor scale adjustment*  
(N= 2345)

<i>Subescale</i>	$X^2$	<i>gl</i>	$X^{2/gl}$	<i>GFI</i>	<i>AGFI</i>	<i>CFI</i>	<i>SRMR</i>	<i>RMSEA</i>
Factor 1 (Verbal/ Physical)	236	20	11	0.97	0.95	0.95	0.03	0.06
Factor 2 (Sexual/ Relational)	23	2	11	0.99	0.97	0.98	0.02	0.06

Table 7. *Confirmatory Factor Analysis: goodness indicators of victims scale adjustment*  
(N= 2345)

<i>Subescale</i>	$X^2$	<i>gl</i>	$X^{2/gl}$	<i>GFI</i>	<i>AGFI</i>	<i>CFI</i>	<i>SRMR</i>	<i>RMSEA</i>
Factor 1 (Verbal/Relational)	165	14	11	0.98	0.95	0.96	0.03	0.06
Factor 2 (Physical/Social)	104	5	20	0.98	0.94	0.96	0.03	0.09

Finally, an analysis of the model was carried out, in which both factors were included for each scale. The goodness indices of both models were satisfactory in normal ranges, thus confirming the structure of validity and reliability of the scales (see Figures 1 and 2).



**Indicadores de bondad de ajuste del modelo:  $X^2=673$ ;  $gl=53$ ;  $X^2/df=12$ ; GFI=0.95 ; CFI=0.91; RMSEA=0.07; AGFI=0.93; SRMR=0.04;  $\alpha = 0.84$**

*Figure 1.* Confirmatory factor analysis for aggressor scale

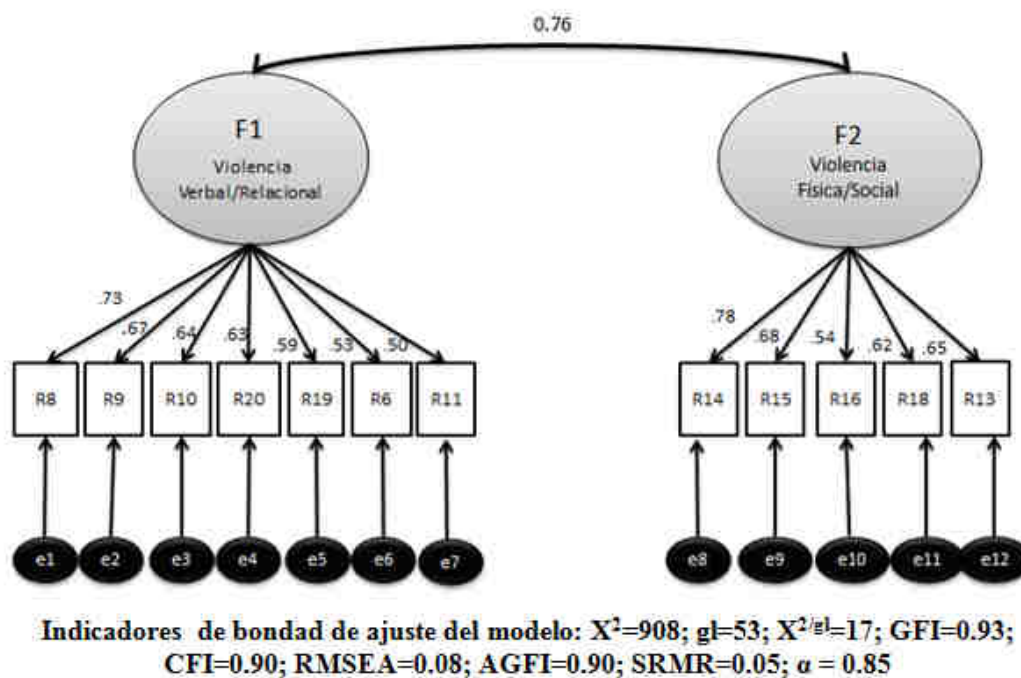


Figure 2. Confirmatory factor analysis for the victim scale

Figure 1 shows the factors of verbal/physical and sexual aggression of the scale of aggressors; and in figure 2 the factors of verbal/relational violence and the physical/social violence of the victim scale. In both figures, correlations between their factors are highlighted, finding in them high ranges of relation between them.

### Discussion and conclusions

It is known the relationship of dominance and submission that exists in the aggressor and the victim of violence between peers, this relationship being a risk factor that sustains said violence over time that can lead to negative consequences for both the perpetrator and for who suffers it. In this sense, the objective of this research has been to validate the scale of victims and aggressors and their associated roles to school bullying, measuring the students' perceptions by playing the roles of victims and aggressors, so that this allows us to identify said roles and develop prevention measures.

With the results obtained we find that the scale of victims of Valdés (2013), which originally dimensioned the types of violence received in: physical, social, psychiatric, sexual and cyber-bullying violence; after the analysis and the elimination of the reagents: 7 "they do not let me participate", 17 "they force me to touch their genitals", and 12 "they steal my

things" for not meeting accepted standards according to the criteria of outfit (normality), was dimensioned in two factors: "verbal violence", in which the cyber-bullying and psychological dimensions were united, and on the other hand the dimension of "physical violence" that conjugates sexual violence.

On the other hand, the scale of aggressors of Ortega and del Rey (2005) divides the structure of the types of aggressions in: physical, social, psychological, sexual and cyber-bullying, in which, after analysis, we removed the reagents: 48 "force a peer to touch your private parts," 43 "steal from them" and 46 "force them to do things they do not want" because they do not meet accepted standards according to the criteria of outfit (normality); And was measured in only two factors: "verbal aggression" combining social and psychological aggressions; And on the other hand the "physical aggression" in which cyber-bullying is integrated.

From the above, it can be observed that in both scales the elimination of reagents that have to do with: physical violence towards the belongings of others coincide; sexual violence related to touching the intimate parts of another; and social violence referred to the subjection of doing or not doing something. This may be due to the culture of silence in this type of situations that are covered up by the students themselves, from both: those who do it and those who receive or see them, since there are cases of these types of violence in schools, but they are usually hidden by factors such as shame and fear, even more so in the stage of adolescence (between 12 and 17 years old) in which junior high school students are. This phenomenon of the "law of silence" is defined by Ortega (1998) as an obligation exercised in a manner of social pressure among students to silence and ignore situations of violence (applied to all roles), so that, along with their omission, they become accomplices and co-participants of this situation. In this way the aggressor feels approved because of the implicit consent that is transmitted by the omission behavior; For its part, the victim may feel that not only is he being violated by the aggressor but by his/hers peers, who, instead of helping him/her choose not to say or do something to support him/her; and spectators, not trying to stop the situation, can be interpreted as "being on the side of the aggressor," i.e. "if you do not help the victim, helps the aggressor," where their behavior has a great influence between acts of violence perpetrated by the aggressor towards the victim, where observing such situation is reinforcing for the aggressor, although it could be that the observers were on the part of the victim, but that they abide by the law of silence not to leave equally injured at that time or in the future. How-

ever, the law of silence makes it difficult for the authorities to identify the relationship that hides behind the aggressions, where sometimes, if there's not obvious physical violence, unfortunately becomes less noticeable for timely detection. Carozzo (2015) points out that complicity is a bond of adhesion and cohesion in the interests of socialization among themselves, so denouncing situations of violence would mean breaking with the unwritten social norms among the students themselves, and therefore it would be understood as a socio-scholar rupture.

School socialization can create the basis for a healthy coexistence; however, strategies and skills should be proposed in order to promote denunciation, promoting solidarity education, respect and equity, where transgressive behaviors are discouraged and democratic and participative school climates are fostered. Therefore, the scales presented above, in addition to adequately complying with the psychometric parameters and properties, can help to evaluate the presence of physical aggression, verbal, psychological, and cyber bullying in public junior high schools in the State. Therefore, it is recommended to investigate, through individual, family and school variables, the Aggressor-Victim-Spectator relations, in order to generate, through violence prevention and values promotion programs, a school environment in which students coexist in a peaceful manner (Doménech and Íñiguez, 2002).

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