PREDICTORES LONGITUDINALES DE VIOLENCIA Y SÍNTOMAS SOMÁTICOS EN LA ADOLESCENCIA

LONGITUDINAL PREDICTORS OF VIOLENCE AND SOMATIC SYMPTOMS IN ADOLESCENCE

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PROGRAMA DE DOCTORADO CIENCIAS SOCIALES Y JURÍDICAS

CORDOBA, ENERO 2023

TITULO: *Predictores longitudinales de violencia y síntomas somáticos en la adolescencia*

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PROGRAMA DE DOCTORADO EN CIENCIAS SOCIALES Y JURÍDICAS

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"El mundo es una comedia para los que piensan y una tragedia para los que sienten".

-Sir Hugh Seymour Walpole

Este trabajo se rige por la séptima edición del Manual de Publicaciones de la American Psychological Association (2020).

En atención a la Ley 3/2007, de 22 de marzo, para la igualdad efectiva de las mujeres y hombres, todas las menciones en la presente tesis doctoral referidas a personas, colectivos, etc. cuyo género sea masculino, se estará refiriendo al género gramatical neutro y así incluyendo la posibilidad de referirse a mujeres y a hombres.

TÍTULO DE LA TESIS: Predictores longitudinales de violencia y síntomas somáticos en adolescentes

DOCTORANDO/A: Raquel Espejo Siles

INFORME RAZONADO DEL/DE LOS DIRECTOR/ES DE LA TESIS

La tesis doctoral realizada por Dña. Raquel Espejo Siles dirigida por la Dra. Izabela Zych presenta, a mi juicio, indicios de calidad y rigor científico para que sea defendida y evaluada por la Comisión Académica del Programa de Doctorado de Ciencias Sociales y Jurídicas para la obtención del título de Doctora por la Universidad de Córdoba. Se trata de un trabajo desarrollado en el marco de un proyecto de investigación financiado en convocatoria pública competitiva, concretamente, por un proyecto I+D+i financiado por el Ministerio de Economía y Competitividad (PSI2015-64114-R). Igualmente, se contó con el apoyo del Plan Propio de la Universidad de Córdoba y las becas de movilidad Elmer, financiadas por la Diputación de Córdoba, para las dos estancias predoctorales realizadas, que resultaron en dos artículos científicos publicados en coautoría de compañeros de instituciones extranjeras.
La presente tesis, realizada por compendio de artículos, se centra en una temática actual y novedosa. El objetivo fue encontrar factores de riesgo y protección comunes a dos de los problemas frecuentes y dañinos en edad escolar: las conductas violentas y la somatización. Se realizaron tres estudios con carácter longitudinal. El primer estudio tuvo como objetivo investigar cómo diferentes variables predijeron conductas violentas en diferentes contextos, tales como en la escuela o en el hogar. El segundo estudio exploró factores de riesgo y protección para la aparición de síntomas somáticos en escolares. Dada la escasez de estudios que relacionen las conductas violentas y la somatización, el objetivo del tercer estudio fue investigar la relación entre cinco factores de comportamiento antisocial (violencia, daño a la propiedad, abuso de sustancias, engaño a la autoridad y robo) y la presencia de síntomas somáticos.
Como prueba de la calidad de la presente tesis doctoral, se presentan tres artículos con los resultados derivados de la misma, dos publicados en revistas JCR de primer cuartil y uno publicado en una revista JCR de segundo cuartil.

Por todo ello, se autoriza la presentación de la tesis doctoral.

Córdoba, 5 de diciembre de 2022

Firma de la directora

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RESUMEN EXTENSO

Resumen extenso

El impacto de los estresores en jóvenes se ha relacionado con consecuencias negativas, tanto a corto como a largo plazo (Luna & Molero, 2013). Por tanto, el estudio de los problemas y estresores presentes en edad escolar es crucial para fomentar un desarrollo saludable en los menores. Entre ellos, la literatura encuentra que las conductas antisociales y los síntomas somáticos son problemas frecuentes y con consecuencias indeseables importantes en niños y adolescentes.

El comportamiento antisocial es definido como un patrón de comportamientos que implican la violación de los derechos de las personas de diferentes maneras. Daño, robo, violencia, uso de sustancias y engaño a la autoridad son algunas de las principales conductas antisociales (Loeber et al., 1989). Aunque este tipo de conductas son perjudiciales e importantes durante todo el ciclo vital, el estudio de las conductas antisociales en la adolescencia resulta particularmente de interés, ya que es el período en el que las conductas antisociales alcanzan su punto máximo (Moffitt, 2018). Además, se considera el período en el que coexisten la mayoría de los perfiles de agresores (Jolliffe et al., 2017), por lo que el estudio de factores de riesgo y protección, y sus consecuencias durante la niñez y adolescencia resultan esenciales para su prevención. En este sentido, un estudio longitudinal con población española señaló una mayor prevalencia de conductas antisociales entre los trece y quince años (Nasaescu et al., 2020b).

Una de las conductas antisociales más frecuentes durante la adolescencia es el uso de la violencia. La violencia es un complejo fenómeno psicosocial que se refiere al uso intencional de la fuerza física o el poder con el objetivo de causar daño de diversa índole a otros seres humanos (World Health Organization, 2002). Además, tiene carácter inmoral y es injustificada (Ortega, 2010). En la escuela, el tipo de violencia más frecuente

es el bullying, encontrándose que alrededor de uno de cada tres estudiantes está involucrado en alguna forma de bullying (Modecki et al., 2014).

Aunque la implicación en roles de bullying es una de las conductas violentas más frecuentes en la adolescencia, las conductas violentas pueden aparecer en diferentes contextos, lo que sugiere que deberían explorarse los ambientes de relevancia para establecer los potenciales factores de riesgo y protección asociados a ellos. Algunos de los contextos más influyentes durante esta etapa son la escuela y el hogar. En la escuela, la disminución de la violencia entre iguales es uno de los retos más compartidos entre las diferentes instituciones, además, la victimización docente es un problema que también aparece en este contexto y que requiere atención. En el hogar, las agresiones a padres y hermanos son problemas sigilosos que afectan a familias (Miles & Condry, 2015).

Por otro lado, la somatización es considerada, junto con la depresión y ansiedad, un problema internalizante (Herskovic & Matamala, 2020). El trastorno de síntomas somáticos se define como síntomas vinculados a pensamientos, sentimientos o comportamientos excesivos relacionados con la salud que interfieren en la vida diaria, lo que lleva al deterioro de las relaciones sociales y familiares (APA, 2013). Los datos apuntan a que casi uno de cada diez estudiantes reporta quejas físicas recurrentes (Garralda, 2010). Los síntomas descritos más frecuentemente en la población son cefaleas, mareos, dolor abdominal e insomnio (Cornellà i Canals, 2008; Ordoñez et al., 2015).

Las diferentes investigaciones sugieren que los síntomas somáticos causan un gran coste en los ámbitos personal, económico y social. El estudio de los factores que pueden

derivar en la aparición de síntomas somáticos es de gran interés, ya que la presencia de sintomatología somática se ha asociado a diversos problemas que afectan a la calidad de vida, y es un problema que suele perpetuarse en el tiempo. Algunos estudios encuentran que la presencia de sintomatología somática se asocia a una mayor probabilidad de sufrir otros desórdenes mentales y se considera un indicador de peor pronóstico para las mismas, como depresión o ansiedad (Bekhuis et al., 2016; Herskovic & Matamala, 2020). La literatura indica que las causas de la somatización son misceláneas y no pueden explicarse por una sola variable (Kellner, 1990), si bien, los factores estresantes escolares han demostrado ser uno de los factores ambientales más comunes para el desarrollo y mantenimiento de los trastornos somáticos en menores (Teo et al., 2008).

Previamente, investigadores han encontrado que el trastorno de personalidad antisocial tiene una alta comorbilidad con la somatización, encontrándose que ambos aparecen juntos en familiares más de lo esperado por el azar (Bornstein & Gold, 2008; Lilienfeld, 1992; Smith et al., 1991). Una revisión sistemática reciente ha mostrado que la somatización y el comportamiento antisocial tenían similitudes biológicas, como niveles bajos de serotonina (Espiridion & Kerbel, 2020).

En población escolar, también algunos estudios han mostrado que diversas conductas antisociales contribuyen a la presencia de síntomas somáticos. Beiter y colaboradores (1991), en un estudio transversal, encontraron que los niños con más quejas somáticas también tenían un mayor riesgo de comportamientos antisociales como el uso de sustancias, la actividad sexual temprana y la delincuencia. Loeber y Burke (2011) mostraron que los problemas de conducta en la infancia se relacionaron con la presencia de diferentes problemas internalizantes a largo plazo, como la depresión o la ansiedad. Posteriormente un meta análisis reveló que, aunque las manifestaciones psicosomáticas

han sido identificadas en agresores en algunos estudios, los resultados no son concluyentes (Gini & Pozzoli, 2013). Por lo tanto, parece existir relación entre conducta antisocial y somatización, pero algunos estudios centrados en las conductas antisociales específicas (p.ej. bullying) han encontrado resultados contradictorios.

Con el objetivo de conocer si las diversas conductas antisociales tienen relación con la somatización, la presente tesis explorará de manera longitudinal la relación de diferentes conductas antisociales con la aparición de síntomas somáticos. Concretamente, se explora la relación de daño a la propiedad, violencia, robos, engaño a la autoridad y abuso de sustancias con el incremento de síntomas somáticos. Referente a violencia, se explora, además, la relación de la perpetración y victimización de bullying y la presencia de síntomas somáticos, y se estudia la influencia de la victimización de bullying en el desarrollo de conductas violentas dentro y fuera de la escuela. El objetivo es profundizar en la relación entre conductas antisociales y presencia de síntomas somáticos e identificar factores de riesgo y protección que puedan ser comunes para prevenir ambos problemas. Identificar factores preventivos comunes a estos dos problemas frecuentes en el aula mejorará la eficacia de los planes preventivos.

El primer estudio tuvo como objetivo investigar, a través de un trabajo longitudinal, cómo diferentes variables predicen la violencia en diferentes contextos, tales como en la escuela o en el hogar. Aunque el tema ha sido explorado en diferentes estudios, las investigaciones suelen estar limitadas por seguir un diseño transversal, incluir a un único contexto o considerar un pequeño número de predictores. Por ello, se incluyeron las siguientes conductas referidas a violencia hacia determinadas personas: agresión hacia maestros, otros estudiantes, padres y hermanos. También se incluyeron conductas que afectan al público en general, como ser ruidoso en público, llevar un arma y lanzar

piedras. Se investigó hasta qué punto la empatía y las competencias sociales y emocionales, la desconexión moral y la victimización son factores protectores o de riesgo para el desarrollo de diversas conductas violentas un año después. La muestra se compuso de 871 estudiantes de diferentes escuelas de Córdoba y Sevilla (España). El 47.8% de los participantes fueron chicas y el 52.2% chicos, con edades comprendidas entre los 9 y 16 años. Se esperaba encontrar que las competencias sociales y emocionales fuesen factores protectores (hipótesis 1) y la desconexión moral y victimización factores de riesgo (hipótesis 2). Así mismo, se esperaba que la influencia de los factores de riesgo y protección tuvieran un peso diferencial en función de la conducta violenta (hipótesis 3). Los resultados señalaron que la victimización escolar fue un factor de riesgo importante para el desarrollo de conductas violentas en el hogar (hacia padres y hermanos) y también en la escuela (hacia otros estudiantes). De hecho, la victimización escolar fue el predictor más fuerte en el modelo final, que incluyó todas las conductas violentas consideradas en el estudio. La desconexión moral fue más importante en la predicción de conductas violentas y violencia entre iguales que en la violencia directa hacia adultos. La empatía no fue un factor protector contra la violencia en este estudio. Las competencias sociales y emocionales fueron protectoras contra la violencia. En el hogar, los jóvenes que reportaron violencia tuvieron puntuaciones más bajas en toma de decisiones responsable. En la escuela, los jóvenes que reportaron más violencia tuvieron un menor nivel de conciencia social. Una menor conciencia social también fue un predictor de violencia hacia otros estudiantes un año después.

El estudio 2 explora factores de riesgo y protección en la aparición de síntomas somáticos. Aunque la investigación centrada en los síntomas somáticos haya sido fructífera, todavía existen lagunas en el conocimiento de factores de riesgo y protección

longitudinales, debido al carácter transversal de la mayoría de las investigaciones sobre el tema. El presente estudio se centra en las relaciones entre las competencias sociales y emocionales, la empatía, el bullying, considerando roles de victimización y agresión, y los síntomas somáticos. Se analizaron las relaciones directas y únicas entre los síntomas somáticos y los factores de riesgo y protección. Se llevó a cabo un estudio longitudinal con una muestra de 384 estudiantes de escuelas de Córdoba y Sevilla. En tiempo 1, el 51.2% de los participantes fueron chicas y el 48.8% chicos con edades comprendidas entre 11 y 17 años. Sobre la base de la revisión de la literatura, se esperaba encontrar que las puntuaciones altas en competencias sociales y emocionales predijeran puntuaciones bajas en síntomas somáticos (hipótesis 1). Del mismo modo, se esperaba encontrar que la alta empatía cognitiva y la baja empatía afectiva predijeran puntuaciones bajas en síntomas somáticos (hipótesis 2). Se esperaba que la victimización y agresión de bullying predijeran más síntomas somáticos (hipótesis 3). Estas relaciones se esperaban encontrar transversalmente y un año después. Los resultados señalaron mayores puntuaciones en síntomas somáticos en chicas. Se encontró que mayores puntuaciones en competencias socioemocionales se relacionaron con menores puntuaciones en síntomas somáticos, tanto transversal como longitudinalmente. No se encontraron relaciones significativas referente a empatía cognitiva, mientras que la alta empatía afectiva se relacionó transversal y longitudinalmente con mayores puntuaciones en síntomas somáticos. Con respecto a roles de bullying, se encontró que la victimización se relacionaba transversal y longitudinalmente con más síntomas somáticos, mientras que la perpetración sólo se relacionó transversalmente. Los análisis de regresión mostraron que ser chica, tener mayor edad, ser víctima de bullying y la alta empatía afectiva predijeron más síntomas

somáticos transversal y longitudinalmente. Puntuaciones bajas en toma de decisiones responsable y autoconciencia predijeron más síntomas somáticos.

El objetivo del tercer estudio fue investigar la relación entre cinco factores de comportamiento antisocial (violencia, daño a la propiedad, abuso de sustancias, engaño a la autoridad y robo) y la presencia de síntomas somáticos, utilizando un estudio longitudinal con un seguimiento de un año. Aunque estudios anteriores hayan relacionado el comportamiento antisocial y los síntomas somáticos, la literatura disponible es escasa. Además, se ha centrado en la conducta antisocial en su conjunto y desde una perspectiva longitudinal, mientras que la mayoría de los estudios poseen diseños transversales, lo que dificulta el conocimiento de la dirección de la relación. El estudio 3 se compuso de una muestra de 384 estudiantes de ocho escuelas de Córdoba y Sevilla (España), incluyendo ciudades y pueblos. La muestra fue seleccionada por muestreo de conveniencia. El 51.2% de los participantes fueron chicas y el 48.8% chicos con edades comprendidas entre los 11 y 17 años. Se esperaba encontrar que diferentes comportamientos antisociales predicen una mayor somatización (hipótesis 1), pero a su vez, se esperaba que los diferentes comportamientos antisociales estudiados predigan somatización en diferente grado (hipótesis 2). Puntuaciones altas en robo, violencia y consumo de sustancias se relacionaron con puntuaciones altas en somatización transversalmente y un año después en chicos y chicas. Violencia fue el predictor más fuerte de somatización, siendo el factor del cuestionario de conducta antisocial que se relacionó especial y únicamente con la somatización. El presente estudio reveló que la conducta violenta fue más frecuente en los chicos, y que fue un predictor de somatización en ambos tiempos.

Los resultados de esta tesis muestran que diferentes comportamientos antisociales están relacionados con los síntomas somáticos, sugiriendo que algunas variables podrían ejercer como protectoras o de riesgo para ambos trastornos.

Se encuentra que la victimización en la escuela es un problema importante con graves consecuencias. No solo se relacionó con la perpetración de conductas violentas en la escuela, sino que también en el hogar. Esto señala la importancia del contexto escolar en la prevención de conductas violentas. Las competencias sociales y emocionales son un factor protector prometedor contra la violencia. Capacitar a los adolescentes para que reevalúen sus objetivos y las consecuencias de su comportamiento violento podría tener un impacto en la disminución de la violencia más adelante en la vida. Posiblemente, los niños violentos podrían verse beneficiados al adquirir nuevas estrategias de resolución de problemas que les resulten más beneficiosas frente al uso de sus actos violentos. Si los niños y adolescentes violentos pudieran comparar y reevaluar los beneficios y costes de sus comportamientos violentos, verían la violencia como un comportamiento de alto coste y utilizarían otras estrategias para lograr sus objetivos. Ya que, como señala Bandura (1973), los individuos buscan maximizar los beneficios y minimizar los costes anticipando las consecuencias de las acciones prospectivas. No obstante, los padres son la primera influencia para la resolución de problemas, por lo que la formación de los padres en competencias sociales y emocionales podría ser especialmente útil para prevenir la violencia en los niños (Zych et al., 2020a).

Además, los resultados de los estudios presentados en esta tesis sugieren que el aumento de las competencias sociales y emocionales en la escuela no solo podría disminuir la violencia en la escuela y el hogar, sino que también podría disminuir los síntomas somáticos. El efecto protector de las competencias socioemocionales también

podría ser mediacional. Algunas hipótesis sugieren que una mayor empatía afectiva está relacionada con una mayor sintomatología somática a través de puntuaciones más bajas en competencias socioemocionales (De Greek et al., 2012; MacDonald & Price, 2019). En este trabajo, las chicas puntuaron más alto en quejas somáticas, empatía cognitiva y afectiva. Estos hallazgos justifican aún más la importancia y la necesidad de programas de aprendizaje social y emocional en las escuelas como herramienta frente a diferentes problemas.

Los programas anti-bullying siguen siendo necesarios. En esta tesis, la victimización por bullying fue un factor de riesgo muy influyente para la perpetración de violencia en diferentes contextos, y también para los síntomas somáticos. Diferentes estudios han demostrado que las intervenciones contra el acoso escolar y el ciberacoso en la escuela fueron efectivas para reducir el acoso escolar y el ciberacoso (Chan & Wong, 2015; Gaffney et al., 2019; Gaffney et al., 2019b). Basados en los resultados de esta tesis, especialmente importantes para reducir las quejas somáticas podrían ser las intervenciones anti-bullying que consideren a niños victimizados con alta empatía afectiva.

La victimización escolar fue un factor importante en el desarrollo de síntomas somáticos, mientras que la perpetración de bullying no resultó ser predictor para síntomas somáticos. No obstante, los agresores violentos en diferentes contextos estuvieron en riesgo de desarrollar quejas somáticas. Especialmente, nuestro tercer estudio señaló que las agresoras femeninas podrían tener un mayor riesgo de somatización que sus iguales no agresoras, o los chicos agresores. Por tanto, la expresión de la somatización en los estudiantes podría subyacer a otras conductas problemáticas que pueden no ser percibidas

por los docentes, y los síntomas somáticos en la escuela deberían ser considerados como una señal de alerta.

Los resultados de los estudios presentados sugieren que los programas para disminuir la violencia en la escuela podrían influir en la reducción de la somatización, ya que el comportamiento violento fue un fuerte predictor de somatización frente a las demás conductas antisociales. Además, los hallazgos de nuestro estudio sugirieron que los programas tempranos de prevención del uso de sustancias podrían ser útiles para reducir la somatización en los estudiantes. Dado que la conducta antisocial y la somatización se han relacionado en nuestro estudio, y en la revisión de la literatura, es posible que algunas variables puedan influir en la aparición de ambos problemas. Como sugirieron investigaciones previas, el afecto negativo y la alexitimia podrían conducir a la somatización y al comportamiento antisocial (Manninen et al., 2011; Wilson et al., 1999), sin embargo, estas variables no fueron probadas en esta investigación.

Estudios futuros podrían centrarse en factores comunes que pudieran predecir los comportamientos antisociales y la salud física y mental, incluida la somatización o la ideación suicida. Los estresores en edad escolar pueden tener consecuencias negativas a largo plazo y su prevención es de vital importancia, así como la promoción de un desarrollo saludable. Los hallazgos del presente trabajo deberían incluirse en los programas de intervención para disminuir la violencia y controlar la expresión de síntomas somáticos para probar su efectividad.

EXTENDED SUMMARY

Extended summary

The impact of stressors on young people has been related to negative consequences, both in the short and long term (Luna & Molero, 2013). Therefore, the study of problems and stressors present at school age is crucial to promote healthy development in children. Among them, the literature finds that antisocial behaviors and somatic symptoms are frequent problems with important undesirable consequences in children and adolescents.

Antisocial behavior is defined as a pattern of behaviors that involve the violation of people's rights in different ways. Harm, theft, violence, substance use, and status offenses are some of the main antisocial behaviors (Loeber et al., 1989). Although this type of behavior is harmful and important throughout the life span, the study of antisocial behavior in adolescence is of particular interest, since it is the period in which antisocial behavior reaches its peak (Moffitt, 2018). In addition, the period in which most aggressor profiles coexist is considered (Jolliffe et al., 2017), therefore, the study of risk and protective factors and consequences during childhood and adolescence would be essential for its prevention. In this sense, a longitudinal study with a Spanish population indicated a higher prevalence of antisocial behavior between thirteen and fifteen years of age (Nasaescu et al., 2020b).

One of the most frequent antisocial behaviors during adolescence is the use of violence. Violence is a complex psychosocial phenomenon that refers to the intentional use of physical force or power to cause harm of various kinds to other human beings (World Health Organization, 2002). In addition, it is immoral and unjustified (Ortega, 2010). At school, the most frequent type of violence is bullying, with around one in three students being found to be involved in some form of bullying (Modecki et al., 2014).

Although involvement in bullying roles is one of the most frequent violent behaviors in adolescence, violence can appear in different contexts, which suggests that the relevant environments should be explored to establish the potential risk and protective factors associated with them. Some of the most influential contexts during this stage are school and home. At school, the reduction of peer violence is one of the most shared challenges between the different institutions, in addition, teacher victimization is a problem that also appears in this context and that requires attention. In the home, aggressions against parents and siblings are silent problems that affect families (Miles & Condry, 2015).

On the other hand, somatization is considered, like depression and anxiety, an internalizing problem (Herskovic & Matamala, 2020). Somatic symptom disorder is defined as symptoms linked to excessive health-related thoughts, feelings, or behaviors that interfere with daily life, leading to impaired social and family relationships (APA, 2013). The data indicates that almost one in ten students report recurrent physical complaints (Garralda, 2010). The most frequently described symptoms in the population are headaches, dizziness, abdominal pain, and insomnia (Cornellà i Canals, 2008; Ordoñez et al., 2015).

The different investigations suggest that somatic symptoms cause a great cost in the personal, economic and social spheres. The study of the factors that can lead to the appearance of somatic symptoms is of great interest, since the presence of somatic symptoms has been associated with various problems that affect the quality of life and it is usually perpetuated over time. Some studies find that the presence of somatic symptoms is associated with a greater probability of suffering from other mental disorders and is considered an indicator of a worse prognosis for them, such as depression or anxiety

(Bekhuis et al., 2016; Herskovic & Matamala, 2020). The literature indicates that the causes of somatization are miscellaneous and cannot be explained by a single variable (Kellner, 1990), although school stressors are one of the most common environmental factors for the development and maintenance of somatic disorders in minors (Teo et al., 2008).

Previously, researchers have found that antisocial personality disorder has high comorbidity with somatization, with both appearing together in relatives more than expected by chance (Bornstein & Gold, 2008; Lilienfeld, 1992; Smith et al., 1991). A recent systematic review has shown that somatization and antisocial behavior had biological similarities, such as low serotonin levels (Spiridion & Kerbel, 2020).

In the school population, some studies have also shown that various antisocial behaviors contribute to the presence of somatic symptoms. Beiter and colleagues (1991) in a cross-sectional study found that children with more somatic complaints were also at increased risk for antisocial behaviors such as substance use, early sexual activity, and delinquency. Loeber and Burke (2011) showed that behavioural problems in childhood were related to the presence of different long-term internalizing problems, such as depression or anxiety. Subsequently, a meta-analysis revealed that, although psychosomatic manifestations have been identified in aggressors in some studies, the results are not conclusive (Gini & Pozzoli, 2013). Therefore, there seems to be a relationship between antisocial behavior and somatization, but some studies that are focused on specific antisocial behaviors (e.g. bullying) have found contradictory results.

To find out if the various antisocial behaviors are related to somatization, this thesis will explore longitudinally the relations of different antisocial behaviors with

somatic symptoms. Specifically, the relationship between property damage, violence, theft, status offences, and substance use with the increase in somatic symptoms will be explored. Referred to violence, the relationship between bullying perpetration and victimization and the presence of somatic symptoms was explored, and the influence of bullying victimization on the development of violent behaviors inside and outside of school was studied. The objective was to delve into the relationship between antisocial behavior and the presence of somatic symptoms and to identify risk and protective factors that may be common to prevent both problems. Identifying protective factors common to these two frequent problems in the classroom will improve the effectiveness of preventive plans.

The first study aimed to investigate, through a longitudinal design, how different variables predict violence in different contexts, such as at school or home. Although the topic has been explored in different studies, research is usually limited by following a cross-sectional design, including a single context, or considering a small number of predictors. For this reason, the following behaviors referring to violence towards certain people were included: aggression towards teachers, other students, parents, and siblings. Behaviors that affect general population, such as being loud in public, carrying a weapon, and throwing stones, were also included. We investigated the extent to which empathy and social and emotional skills, moral disengagement, and victimization are protective or risk factors for the development of various violent behaviors one year later. The sample was made up of 871 students from different schools in Cordoba and Seville (Spain). 47.8% of the participants were girls, and the 52.2% were boys, aged between 9 and 16 years. Social and emotional competencies were expected to be protective factors (hypothesis 1) and moral disengagement and victimization risk factors (hypothesis 2).

Likewise, it was expected that the influence of risk and protective factors would have a different weight depending on the violent behavior (hypothesis 3). The results indicated that school victimization was an important risk factor for the development of violent behavior at home (towards parents and siblings) and at school (towards other students). In fact, school victimization was the strongest predictor in the final model, which included all violent behaviors considered in the study. Moral disengagement was more important in predicting violent behavior and peer violence than direct violence toward adults. Empathy was not a protective factor against violence in this study. Social and emotional competencies were protective against violence. At home, youth who reported violence had lower scores on responsible decision-making. At school, youth who reported more violence had a lower level of social awareness. Lower social awareness was also a predictor of violence toward other students one year later.

Study 2 explored risk and protective factors for somatic symptoms. Although research focused on somatic symptoms has been fruitful, there are still gaps in knowledge on longitudinal risk and protective factors, due to the cross-sectional nature of most research on the topic. The present study focused on the relationships between social and emotional competencies, empathy, bullying, considering victimization and perpetration, and somatic symptoms. Direct and unique relationships between somatic symptoms and risk and protective factors were analyzed. A longitudinal study was carried out with a sample of 384 students from schools in Cordoba and Seville. At time 1, 51.2% of the participants were girls, and the 48.8% were boys, aged between 11 and 17 years. Based on the literature review, we expected to find that high scores on social and emotional competencies would predict low scores on somatic symptoms (Hypothesis 1). Similarly, we expected to find that high cognitive empathy and low affective empathy would predict

low somatic symptom scores (hypothesis 2). Bullying victimization and perpetration were expected to predict high somatic symptoms (hypothesis 3). These relationships were expected to be found cross-sectionally and one year later. The results indicated higher scores in somatic symptoms in girls. It was found that higher scores in socio-emotional competencies were related to lower scores in somatic symptoms, both cross-sectionally and longitudinally. No significant relationships were found regarding cognitive empathy, while high affective empathy was correlated cross-sectionally and longitudinally with higher scores in somatic symptoms. Concerning bullying roles, victimization was found to be cross- and longitudinally related to more somatic symptoms, while perpetration was only cross-sectionally related. Regression analyzes showed that being a girl, being older, being a victim of bullying, and having high affective empathy predicted more somatic symptoms cross-sectionally and longitudinally. Low scores on responsible decision-making and self-awareness predicted more somatic symptoms.

The third study aimed to investigate the relationship between five antisocial factors (violence, property damage, substance abuse, status offenses, and theft) and the presence of somatic symptoms, using a longitudinal design with follow-up of a year. Although previous studies have linked antisocial behavior and somatic symptoms, the number of previous studies is low. In addition, research has been focused on antisocial behavior in general, and most studies have cross-sectional designs, making it difficult to understand the direction of the relationship. Study 3 included a sample of 384 students from eight schools in Cordoba and Seville (Spain), including cities and towns. The sample was selected by convenience sampling. 51.2% of the participants were girls, and the 48.8% were boys, aged between 11 and 17 years. It was expected to find that different antisocial behaviours would predict greater somatization (hypothesis 1), and the different

antisocial behaviors were expected to predict somatization to a different degree (hypothesis 2). High scores on theft, violence and substance use were associated with high scores on somatization cross-sectionally and one year later in boys and girls. Violence was the strongest predictor of somatization, being the factor of the antisocial behavior questionnaire that was especially and uniquely related to somatization. The present study revealed that violent behavior was more frequent in boys and that it was a predictor of somatization at both times.

The results of this thesis show that different antisocial behaviors are related to somatic symptoms, suggesting that some variables could act as protective or risk factors for both disorders.

Victimization at school is found to be a major problem with serious consequences. It was not only related to the perpetration of violent behavior at school but also at home. This points to the importance of the school context in the prevention of violent behavior. Social and emotional competencies are promising protective factors against violence. The results of this thesis suggest that training adolescents to reassess their goals and the consequences of their violent behavior could have an impact on the reduction of violence later in life. Possibly, violent children could benefit from acquiring new problem-solving strategies that are more beneficial to them than the use of their violent acts. If violent children and adolescents could compare and reassess the benefits and costs of their violent behaviors, they would see violence as a high-cost behavior and use other strategies to achieve their goals. As pointed out by Bandura (1973), individuals seek to maximize benefits and minimize costs by anticipating the consequences of prospective actions. However, parents are the first influence for problem-solving, so training parents in social

and emotional skills could be especially useful to prevent violence in children (Zych et al., 2020a).

Furthermore, the results of the studies presented in this thesis suggest that increasing social and emotional competencies at school could not only decrease violence at school and home but could also decrease somatic symptoms. The protective effect of socioemotional competencies could also be mediational. Some hypotheses suggest that greater affective empathy is related to greater somatic symptomatology through lower scores in socioemotional competencies (De Greek et al., 2012; MacDonald & Price, 2019). In this study, girls scored higher in somatic complaints and cognitive and affective empathy. These findings further justify the importance and need for social and emotional learning programs in schools as a tool to deal with different problems.

Anti-bullying programs are still needed. In this thesis, bullying victimization was a very influential risk factor for violence perpetration in different contexts, and for somatic symptoms. Different studies have shown that anti-bullying and cyberbullying interventions at school were effective in reducing bullying and cyberbullying (Chan & Wong, 2015; Gaffney et al., 2019; Gaffney et al., 2019b). Based on the results of this thesis, especially important to reduce somatic complaints could be anti-bullying interventions that consider victimized children with high affective empathy.

School victimization was an important factor in the development of somatic symptoms while bullying perpetration was not found to be a predictor for somatic symptoms. However, violent offenders in different contexts were at risk of developing somatic complaints. Specially, our third study pointed out that female bullies might be at higher risk of somatization than their non-aggressive peers, or male bullies. Therefore,

the expression of somatization in students could underlie other problem behaviors that may not be perceived by teachers, especially if they occur outside of school. Somatic symptoms at school should be considered a warning sign.

The results of the studies presented suggest that program to reduce violence at school could possibly be beneficial to reduce somatization since violent behavior was a strong predictor of somatization compared to other antisocial behaviors. Furthermore, the findings of our study suggest that early substance use prevention programmes might help reduce somatization in students. Given that antisocial behavior and somatization have been related in our study and the literature review, some variables may influence both problems. As previous research suggested, negative affect and alexithymia could lead to somatization and antisocial behavior (Manninen et al., 2011; Wilson et al., 1999), however, these variables were not tested in this research.

Future studies could focus on common factors that might predict antisocial behaviors and physical and mental health, including somatization or suicidal ideation. School-age stressors can have long-term negative consequences and their prevention is of vital importance, as well as the promotion of healthy development. The findings of this study should be included in intervention programs to reduce violence and control the expression of somatic symptoms to test their effectiveness.

MARCO TEÓRICO

Capítulo 1. Marco teórico

La infancia y adolescencia son periodos evolutivos de gran importancia, caracterizados por la presencia de múltiples cambios. Los estresores durante este periodo de desarrollo pueden tener consecuencias importantes a corto y largo plazo, dado que pueden interferir con el desarrollo óptimo de las personas y disminuir la calidad de vida del individuo (Luna & Molero, 2013). Por ello, el estudio de los problemas y estresores más frecuentes en edad escolar es crucial para fomentar un desarrollo saludable de las personas. A su vez, es fundamental conocer los factores de riesgo y protección de estos problemas para poder abordarlos.

Entre los problemas durante la etapa adolescente, la violencia y la somatización son especialmente importantes y frecuentes. Siendo así, un estudio longitudinal con población española señaló una mayor prevalencia de conductas antisociales entre los trece y quince años (Nasaescu at al., 2020b). Estos datos se reflejan también en la escuela, donde se afirma que alrededor de uno de cada tres estudiantes está involucrado en alguna forma de bullying (Modecki et al., 2014), lo que enfatiza la necesidad del estudio de las conductas antisociales en la adolescencia.

Por otro lado, se encontró que casi uno de cada diez estudiantes reportaba quejas físicas recurrentes (Garralda, 2010). Resulta de especial interés el estudio de la presencia de síntomas somáticos en población escolar, ya que las quejas somáticas podrían predecir una mala salud mental en la edad adulta temprana (Kinnunen et al., 2010). En este sentido, un estudio de cohorte prospectivo mostró que el 72% de los niños en edad escolar informaron al menos un síntoma somático por semana y que los síntomas somáticos predijeron alta ansiedad, depresión, baja calidad de vida y absentismo escolar (Saps et al.,

2009). Por lo tanto, la evidencia científica encuentra que las quejas somáticas son un problema frecuente en edad escolar y en la vida adulta.

Teniendo en cuenta la importancia de la prevención de la somatización y de la conducta antisocial, incluyendo la violencia en la adolescencia, resulta crucial descubrir si estos fenómenos están relacionados. Además, sigue siendo necesario analizar los factores de riesgo y de protección longitudinales para la violencia y los síntomas somáticos. Por ello, la presente tesis llena las lagunas en el conocimiento respecto a la relación entre la violencia y la somatización, y el estudio de sus factores de riesgo y de protección de manera longitudinal. A continuación, se delimitan los conceptos de violencia y sintomatología somática. Igualmente, se describen los hallazgos científicos centrados en los factores de riesgo y protección que podrían compartirse entre ellos. El objetivo es esclarecer la asociación entre la conducta antisocial, con especial atención a la violencia, y los síntomas somáticos y describir sus factores de riesgo y protección longitudinales. Investigar la existencia de factores de riesgo y protección de la violencia y de los síntomas somáticos podría ayudar al desarrollo de planes preventivos más eficaces y efectivos, traduciéndose en mejor calidad de vida de los adolescentes.

1.1. Diferentes formas de la violencia y sus predictores

La importancia de la violencia en el mundo radica en sus serias consecuencias en diversas esferas, englobando aspectos sociales, económicos, sanitarios y relacionales. La violencia es un complejo fenómeno psicosocial que se refiere al uso intencional de la fuerza física o el poder con el objetivo de causar daño de diversa índole a otros seres humanos (World Health Organization, 2002). Además, tiene carácter inmoral y es injustificada (Ortega, 2010). Las consecuencias negativas de la violencia son muy

extensas y debido a la multitud de problemas asociados a ella, no es posible conocer el impacto exacto que causa la violencia en la sociedad (Dahlberg & Krug, 2006).

La violencia es una conducta que puede expresarse en diferentes contextos y dirigirse hacia diferentes personas, lo que sugiere que deberían explorarse los ambientes de relevancia para establecer los potenciales factores de riesgo y protección asociados a ellos. Sin embargo, la mayoría de los estudios se centra en un solo contexto, lo que limita el conocimiento en profundidad del problema. Durante las etapas infantil y adolescente, los contextos socializadores más influyentes suelen ser la familia, escuela e iguales (Oetting et al., 1998). Referente a la forma de expresión de violencia en dichos contextos, en la escuela, puede manifestarse como agresiones hacia el profesorado y agresiones hacia otros estudiantes. En el hogar, se podría manifestar como agresiones hacia los padres y los hermanos. Aunque también, la violencia podría producirse en otros contextos (por ejemplo, en público) y manifestando otras conductas, como llevar un arma o lanzar piedras (Loeber et al., 1989).

1.1.1. Violencia en el hogar

Con respecto a la violencia en el hogar, la investigación generalmente se ha centrado en la violencia que los hombres ejercen contra las mujeres. Sin embargo, la violencia en el hogar puede tener lugar entre los diferentes miembros de una familia. Por ejemplo, la violencia filio-parental históricamente ha sido considerada un problema silencioso, pero hoy en día se califica como violencia doméstica (Miles & Condry, 2015). Referente a la etiología de la violencia de hijos a padres, se encontró que la violencia ejercida de los hijos contra familiares, como padres y hermanos podría desarrollarse a través del aprendizaje social, al verse la agresión como una forma de resolver conflictos

(Hoffman et al., 2005). Además, se encontró que la presencia de cualquier tipo de violencia en el hogar aumentaba el riesgo de otros tipos de violencia doméstica, como la violencia contra los hijos (Slep & O'leary, 2005). En este sentido, los resultados de una revisión meta-analítica de 19 estudios primarios mostraron que la probabilidad de desarrollar violencia filio-parental para los niños victimizados por los padres fue un 71% mayor que para los niños no victimizados (Gallego et al., 2019). La victimización parental suele ser un problema menos explorado que la victimización infantil, y conocer sus factores de riesgo y protección podría ayudar a tener una visión más completa del flujo de la violencia doméstica.

Otro tipo de violencia que ha suscitado poco interés es la violencia entre hermanos, ya que esta suele ser normalizada, aceptada y esperada por la sociedad (Khan & Rogers, 2015). Sin embargo, la literatura afirma que existen consecuencias derivadas de la perpetración de violencia entre hermanos. Se encontró que la victimización entre hermanos era, aunque menos dañina, más crónica que la victimización entre iguales (Finkelhor et al., 2006), además de relacionarse con la perpetración de violencia emocional y física en el noviazgo.

El estudio de factores que pudieran proteger de este tipo de violencia es necesario para la prevención de sus consecuencias presentes y futuras. La extrapolación de estas conductas disfuncionales a otros contextos estaría contribuyendo al ciclo de la violencia (Simonelli et al., 2002). La literatura indica que la prevención de la violencia en el hogar podría ser necesaria por sus graves consecuencias, y a su vez, podría evitar su generalización a otros contextos y en el tiempo. El estudio en profundidad de factores que podrían proteger del uso de la violencia en el hogar parece ser de gran importancia. Sin

embargo, aún se necesitan estudios multifactoriales y longitudinales para arrojar algo de luz sobre el tema.

1.1.2. Violencia en la escuela

La escuela es uno de los ambientes más influyentes para niños y adolescentes, ya que es un contexto constante y obligatorio durante el trayecto hacia la mayoría de edad. En la escuela, la violencia es considerada como el ejercicio del poder sobre los demás, sometiéndolos y logrando metas propias a través del comportamiento agresivo (Henry, 2000). Habitualmente, se ha estudiado de manera extensa la violencia entre los estudiantes incluyendo el bullying (Ortega-Ruiz et al., 2013), pero la violencia escolar también podría producirse hacia el profesorado. Un meta-análisis de 24 estudios empíricos realizado por Longobardi y colaboradores (2019) encontró que la victimización docente parece ser un problema prevalente y existente en diferentes partes del mundo. Se encontró que una alta tasa de violencia dirigida hacia el profesorado predijo consecuencias físicas en los docentes, como dolores de cabeza o fatiga, y emocionales, como culpa o tristeza (Wilson et al., 2011). Por tanto, el alcance de la violencia en la escuela podría tener consecuencias a diferentes niveles, afectando a la calidad docente y repercutiendo directa e indirectamente en la enseñanza. Estudios longitudinales sobre los factores de riesgo y protección de la violencia hacia el profesorado son necesarios para mejorar el clima escolar.

La violencia entre los estudiantes es un problema común e importante a nivel internacional (Craig et al., 2009). El bullying es un comportamiento agresivo frecuente, perpetrado por algunos estudiantes sobre sus compañeros que no pueden defenderse fácilmente y que es mantenido a largo plazo (Smith et al., 2002). La larga duración en el

tiempo se refleja en estudios. Por ejemplo, Zych y colaboradores (2020b), tras realizar un estudio longitudinal de seis años de duración con 916 participantes, afirmaron que el bullying es un comportamiento relativamente estable que puede durar muchos de los años escolares. Además de ser un fenómeno que se mantiene en el tiempo, también se trata de un problema frecuente, ya que los hallazgos meta-analíticos muestran que alrededor de uno de cada tres niños está involucrado en alguna forma de bullying (Modecki et al., 2014). A pesar de que la investigación en el campo ha sido fructífera, la violencia en la escuela es hoy en día un fenómeno con gran magnitud e importancia, y sigue siendo un problema presente en la adolescencia.

Los datos sugieren que el ámbito escolar es un contexto idóneo para lograr una prevención más eficaz o disminuir las potenciales consecuencias. Aunque existe una extensa literatura al respecto, la mayoría de los estudios en el campo han sido transversales, o se han centrado por separado en profesores o estudiantes, lo que limita el conocimiento global del fenómeno. Por ello, aunque la violencia entre estudiantes haya sido muy estudiada dada su gran prevalencia, aún se presentan algunas lagunas en el conocimiento. Por ejemplo, las consecuencias en el estado de salud de los agresores han sido menos estudiadas que las psicológicas, y generalmente, estas consecuencias han sido más exploradas en víctimas que en agresores.

La prevención de la violencia escolar también supone el estudio en profundidad de las consecuencias sufridas por los perpetradores. En este sentido, se encontró que los perpetradores tienen un mayor riesgo de delincuencia más adelante en la vida, y más riesgo de comportamientos suicidas incluyendo intentos suicidas y autolesiones (Ttofi et al., 2011). Por ello, el estudio de las consecuencias psicosomáticas en agresores podría proporcionar información adicional sobre el problema, fomentando una visión más

holística y ajustada a la realidad. También, el estudio de la influencia del contexto en la aparición de conductas violentas ayudaría a comprender mejor cómo disminuir la violencia en edad escolar y prevenir el daño y las posibles consecuencias negativas que se derivan del mismo.

1.1.3. La victimización de bullying como factor de riesgo para la violencia

Identificar factores de riesgo y protección es una tarea indispensable para la prevención de las conductas problema. El bullying es un problema frecuente en edad escolar y es un acto de violencia que es mantenido en el tiempo, con carácter injustificado e inmoral en el cual existe un desequilibrio de poder entre la víctima y el agresor (Ortega, 2010). La victimización se ha relacionado con la perpetración de violencia en muchos trabajos científicos (Walters, 2021). Además, se encontró que algunos adolescentes podrían ser más propensos a ser tanto víctimas como agresores de manera repetida, implicándose en ambos roles (Sullivan et al., 2016). El hecho de implicarse en ambos roles conllevaría mayores consecuencias. Lereya y colaboradores (2015) encontraron que aquellos jóvenes que se implicaban en ambos roles tenían un mayor riesgo de problemas de salud mental que aquellos que solo eran víctimas o agresores.

Por tanto, la prevención de la victimización parece esencial para reducir el ciclo de comportamiento violento y sus consecuencias. Así lo han determinado diversos meta-análisis. Entre ellos, Ttofi y colaboradores (2012) en una revisión sistemática y meta-análisis de 14 estudios longitudinales primarios encontraron que las víctimas de bullying tenían un tercio de más riesgo de ejercer la violencia en el futuro. Un meta-análisis de 23 estudios primarios realizado por Zych y colaboradores (2021b) encontró que la

victimización y perpetración de bullying estaban relacionadas con la participación en la violencia en el noviazgo.

Las consecuencias de la implicación en roles de perpetración y victimización de violencia escolar también se han asociado a comportamientos problemáticos más amplios. En este sentido, un estudio longitudinal con muestra española encontró que la victimización y perpetración previa del acoso escolar estaba relacionada con la violencia y otros comportamientos antisociales más adelante en la vida (Nasaescu et al., 2020a). Un estudio longitudinal de diez años determinó que las experiencias en la niñez de victimización de bullying predijeron conductas violentas y consumo de sustancias en la adolescencia (Kim et al., 2011).

Aunque los hallazgos anteriores evidencian la relación entre victimización escolar y agresión, la influencia del contexto en la victimización y el posterior desarrollo de agresión han sido menos estudiados. En un reciente estudio transversal de 166.351 adolescentes se encontró que ser víctima de bullying puede aumentar mucho las posibilidades de ser agresor bajo un contexto determinado, pero puede no tener influencia en otros. Por ejemplo, los autores señalaron que el apego escolar o el abuso por parte de los padres influirían en el desarrollo de conductas agresivas (Paez & Richmond, 2022). Sin embargo, el carácter transversal del estudio limita las conclusiones derivadas, siendo además necesario el estudio longitudinal de la influencia del contexto situacional en el desarrollo de conductas violentas. En este sentido, en el estudio anterior no se diferencian los roles de las víctimas ni el contexto en el que se sitúan.

Los datos revelan la extensión en el tiempo de la violencia y animan a investigar los predictores y consecuencias físicas y psicológicas en víctimas y agresores.

Especialmente es de interés el estudio en agresores, dado que aquellos que son a su vez víctimas de bullying podrían tener mayores riesgos que víctimas o agresores puros. Además, aunque existe una extensa literatura que determina la importancia de la victimización en el desarrollo de conductas violentas, son escasos los estudios centrados en la extensión en la que en víctimas de bullying desarrollan conductas violentas en contextos concretos.

1.1.4. La desconexión moral como un factor de riesgo para la violencia

Si bien la previa exposición y sufrimiento de violencia se ha relacionado ampliamente con el desarrollo futuro de conductas violentas, otros factores también han sido identificados como factores de riesgo para el desarrollo de conductas violentas. Entre ellos, la desconexión moral es uno de los constructos que clásicamente se ha asociado con comportamientos violentos en múltiples estudios (Falla et al., 2020; Romera et al., 2019). La desconexión moral fue definida por Bandura (1999) como un mecanismo cognitivo a través del cual el comportamiento inmoral se interpreta como benigno o digno. Las personas tienden a evaluar su comportamiento y a sancionarse cuando actúan de manera desacorde a su moralidad. Sin embargo, los mecanismos de desconexión moral aminoran las auto sanciones derivadas del uso de la violencia, por lo que se hace más probable que se continue con su uso al no verse castigado el comportamiento violento.

Según Bandura y colaboradores (1996), existen cuatro mecanismos de desconexión moral. El primero, la deshumanización, es el proceso cognitivo por el que la víctima es percibida como inferior y despojada de las cualidades humanas. El segundo, la minimización de las consecuencias, es un mecanismo a través del cual se ignoran las consecuencias negativas de los actos inmorales. El tercero, la reconstrucción, es el

mecanismo cognitivo por el cual la conducta perjudicial se hace aceptable al justificarla al servicio de valiosos propósitos sociales o morales. Por último, la difusión de la responsabilidad es un mecanismo a través del cual los perpetradores no asumen la responsabilidad de los efectos nocivos de sus acciones.

Diversos autores se han centrado en la relación entre desconexión moral y violencia. Un meta-análisis de 27 estudios primarios realizado por Gini y colaboradores (2014a) encontró que la desconexión moral se relacionó significativamente con el comportamiento agresivo, y los tamaños del efecto fueron mayores para los adolescentes que para los niños. Killer y colaboradores (2019), en un meta-análisis con cuarenta y siete estudios primarios, también encontraron relación entre ser perpetrador de bullying y una mayor desconexión moral. Ferriz-Romeral y colaboradores (2019), en un meta-análisis donde se incluyeron más de diez mil participantes, encontraron que la asociación entre menor desconexión moral y comportamiento violento era más fuerte cuanto más grave era el acto violento cometido.

Pese a que muchas revisiones sistemáticas y meta-análisis han reflejado el peso que la desconexión moral tiene en el desarrollo de conductas violentas, la importancia de cada mecanismo de desconexión moral en función del contexto debe ser estudiada todavía. Algunos estudios han estudiado la relación en un contexto específico, por ejemplo, Thornberg y colaboradores (2017) a través de un estudio transversal encontraron que, en la escuela, la desconexión moral se relacionó con una mayor victimización entre iguales. Sorrentino y Farrington (2019), en un estudio longitudinal con 251 adolescentes italianos, relacionaron la mayor desconexión moral con mayor agresión hacia profesores. En el hogar, también se ha relacionado transversalmente la desconexión moral con mayor violencia hacia los hermanos (Tanrikulu et al., 2015). Sin embargo, la mayoría de los

estudios se realizaron con un diseño transversal o con muestras no representativas, lo que limita los resultados. No obstante, recientemente Gini y colaboradores (2022) encontraron mediante un estudio longitudinal que la desconexión moral era un factor de riesgo para la agresividad en una muestra de más de mil adolescentes. Dada la influencia del contexto en el desarrollo y mantenimiento de las conductas, resulta necesario estudiar de manera longitudinal si en función del contexto en el que aparecen, los mecanismos de desconexión moral tienen una influencia diferencial y con ello, entender mejor los procesos cognitivos que fomentan la violencia en contextos determinados y diseñar programas preventivos más ajustados.

Si bien la desconexión moral favorece el desarrollo de conductas antisociales, por el contrario, el fomento de emociones morales podría actuar como protector contra el uso de violencia. Las emociones morales son aquellas emociones asociadas al beneficio de la comunidad o del prójimo (Haidt, 2003). Las emociones morales ayudarían a prevenir comportamientos agresivos al anticipar resultados negativos derivados de su uso (Arsenio, 2014), aspecto diferencial con la desconexión moral, donde se encuentran ausentes las consecuencias negativas debido a las argumentaciones cognitivas sesgadas que perpetúan y apoyan el uso de la violencia como herramienta eficaz. Por lo tanto, la literatura sugiere que la desconexión moral podría fomentar el uso de la violencia mientras que la mejora de las emociones morales podría contribuir a su disminución (Jambon & Smetana, 2020).

1.1.5. Empatía y competencias socioemocionales como factores de protección contra la violencia

El estudio de factores de protección es esencial para disminuir la violencia y aminorar sus consecuencias. En este sentido, uno de los factores protectores más

estudiados ha sido la empatía. La empatía se puede dividir en dos dimensiones, empatía cognitiva y empatía afectiva. La empatía cognitiva se refiere a la capacidad de comprender los estados mentales o sentimientos de los demás. La empatía afectiva se define como la capacidad de experimentar realmente los sentimientos de otras personas (Hojat et al., 2002; Jollife & Farrington, 2006).

La relación entre mayor empatía y menor riesgo de violencia se ha establecido en diversos estudios. Un meta-análisis llevado a cabo por Zych y colaboradores (2019c), en el cual se revisaron 53 estudios empíricos, reveló que aquellos estudiantes que eran agresores de bullying tenían puntuaciones más bajas en empatía afectiva y cognitiva. Referido a agresores sexuales, un meta-análisis de 25 estudios primarios realizado por Morrow (2020) encontró que éstos tenían puntuaciones más bajas en empatía cognitiva, pero no en empatía afectiva. Una revisión sistemática y meta-análisis de 35 estudios primarios encontró que los delincuentes violentos tenían baja empatía, estando la empatía cognitiva más relacionada con la agresión (Jolliffe & Farrington, 2004). Diez años después, Van Langen y colaboradores (2014), en una revisión sistemática y meta-analisis de 38 estudios primarios, también encontraron una mayor relación de la baja empatía cognitiva en comparación a la empatía afectiva con la agresión.

Diversos estudios transversales han encontrado relación en este sentido. La baja empatía cognitiva también se relacionó con un mayor riesgo de reincidencia en un estudio con 144 perpetradores de violencia en pareja (Romero-Martínez et al., 2016). Se encontró que la alta empatía protegía contra la violencia a hombres y mujeres en un estudio con muestras de adolescentes delincuentes y no delincuentes (Broidy et al., 2003). Sin embargo, un reciente estudio longitudinal con muestra española de Nasaescu y colaboradores (2021) no encontró que la empatía cognitiva o afectiva fueran predictores

de las conductas antisociales. Aunque la relación entre baja empatía cognitiva y mayor riesgo de violencia se ha evidenciado en algunos estudios, la relación referente a la baja empatía afectiva y mayor agresión presenta más interrogantes. Además, la escasez de estudios de corte longitudinal que analicen influencia del contexto o se centren en colectivos menos estudiados, como padres, hermanos o profesores hacen que sea necesaria más investigación en el tema.

De especial interés se presenta el estudio de las competencias socioemocionales, que han sido asociadas con un menor comportamiento violento (Vega et al., 2022; Zych et al., 2019b). El concepto de competencia emocional se refiere a la capacidad de utilizar las habilidades emocionales de manera positiva en situaciones de la vida real de acuerdo con las necesidades de cada momento (Saarni, 1999). En el caso de la competencia social, supondría la capacidad de integrar el pensamiento, el sentimiento y el comportamiento para lograr tareas sociales en un contexto (Topping et al., 2000). Según uno de los modelos más utilizados a nivel internacional (CASEL, 2012), las competencias socioemocionales pueden dividirse en cinco amplias áreas de competencia incluyendo el autoconocimiento, autocontrol, conciencia social, habilidades para relacionarse y toma de decisiones responsable. Todas ellas están interrelacionadas (CASEL, 2012).

La primera de ellas es el autoconocimiento, definido como la habilidad de identificar las propias emociones y su influencia en el comportamiento en diferentes contextos. El segundo, el autocontrol, supone la capacidad de gestionar y regular las emociones para lograr metas. El tercero, la conciencia social, es definido como la capacidad de entender los sentimientos de los demás, comprendiendo diferentes perspectivas según el contexto. El cuarto, las habilidades para relacionarse, suponen la capacidad de establecer y mantener relaciones deseables con otras personas en diferentes

ambientes. Por último, la toma de decisiones responsables sería la habilidad de tener en cuenta los beneficios y perjuicios de cada elección a la hora de tomar una decisión, teniendo en cuenta el bienestar personal y colectivo.

Aunque las competencias sociales y emocionales parecen ser protectoras contra las conductas violentas, los estudios se han centrado en su mayoría en constructos afines. Un constructo afín y más estudiado en relación a ellas ha sido la inteligencia emocional, definida como el conjunto de habilidades incluyendo percepción, facilitación, comprensión y regulación emocional (Mayer & Salovey, 1997). En este sentido, un meta-análisis de Vega y colaboradores (2021), con 17 estudios primarios, de los cuales solo tres tuvieron corte longitudinal, encontró que la inteligencia emocional era protectora contra agresiones. A la misma conclusión llegaron Garcia-Sancho y colaboradores (2014) en un meta-análisis de 19 estudios transversales primarios. Referido a la competencia social, un meta-análisis en el que se incluyeron 46.828 participantes encontró que la mayor competencia social se relacionaba con menores problemas de conducta (Hukkelberg et al., 2019). También, una revisión sistemática de meta-análisis encontró que diferentes competencias sociales y emocionales protegen a los niños y adolescentes frente a comportamientos violentos como el acoso escolar y el acoso cibernético (Zych et al., 2019b). Sin embargo, los estudios rigurosos que asocien las diferentes competencias socioemocionales en su conjunto con la perpetración de violencia son escasos y más investigación es requerida.

Un estudio transversal con muestra española encontró que los niños que cometieron violencia contra sus padres tenían un menor nivel de competencias sociales y emocionales y una menor capacidad para identificar, expresar y controlar las emociones (Contreras & Cano, 2016). Si bien, dichos resultados no permiten establecer una relación

de causalidad dado su carácter transversal. Se encontró a través de un estudio longitudinal que las intervenciones para promover las habilidades sociales y emocionales reducen los comportamientos violentos en preescolares (Gower et al., 2014), lo que señala el potencial protector de esta variable frente a comportamientos violentos. La evidencia pone de manifiesto la relación de las diferentes competencias socioemocionales con menor violencia, si bien, la mayoría de los estudios poseen un diseño transversal o eluden a constructos afines, lo que limita el conocimiento de la relación. Son necesarios más estudios de corte longitudinal para establecer si las diferentes competencias sociales y emocionales protegen contra diferentes conductas violentas dirigidas a diferentes colectivos, y la extensión en la que lo hacen.

1.2. Los síntomas somáticos y sus predictores

La somatización ha sido clásicamente estudiada desde el marco psicoanalítico, y fue definida por primera vez a principios del siglo XX, dónde se señaló que algunos trastornos psicológicos producen trastornos físicos (Marin & Carron, 2002). Desde entonces, los problemas somáticos se han estudiado utilizando diferentes enfoques psicológicos. Haciendo un repaso de la literatura, el Manual Diagnóstico y Estadístico de los Trastornos Mentales de la Asociación Psiquiátrica Americana (APA) lo ha definido en sus diferentes versiones según se indica.

En el DSM III-R, los síntomas somáticos se incluyeron en las clasificaciones diagnósticas como parte del trastorno somatoforme, que incluía la presencia de múltiples síntomas somáticos o la creencia de estar enfermo (APA, 1987). Dolor, fatiga, mareos y disnea fueron los síntomas más comunes entre los pacientes diagnosticados con el trastorno somatoforme (Lipowski, 1987).

En la siguiente versión, el DSM IV, se actualizaron los criterios del trastorno somatoforme (APA, 2000), incluyendo los síntomas percibidos que no podían ser completamente explicados por la etiología orgánica, incluso si un paciente fue diagnosticado con una enfermedad física. Además, el diagnóstico del trastorno somatoforme en el DSM IV requirió la presencia de al menos cuatro síntomas de dolor, dos síntomas gastrointestinales, un síntoma sexual y un síntoma pseudoneurológico durante más de un año.

Finalmente, en la actual versión DSM 5, el trastorno de síntomas somáticos se define como síntomas vinculados a pensamientos, sentimientos o comportamientos excesivos relacionados con la salud que interfieren en la vida diaria, lo que lleva al deterioro de las relaciones sociales y familiares (APA, 2013). Esta nueva conceptualización es más completa en cuanto a la duración y el número de criterios requeridos, ya que requiere un mínimo de seis meses de duración y ninguna combinación sintomática especial, aunque los síntomas descritos más frecuentemente en la población son cefaleas, mareos, dolor abdominal e insomnio (Cornellà i Canals, 2008, Ordoñez et al., 2015). Estos síntomas no se pueden explicar completamente médicamente, y generalmente tienen un curso crónico (Heinrich, 2004).

La somatización en sí misma constituye un grave problema de salud pública, puesto que la prevalencia de esta sintomatología es alta y afecta tanto a individuos como a sociedades con sus consecuencias. La Asociación Americana de Psiquiatría (APA) estima que la tasa de prevalencia del trastorno de síntomas somáticos en la población adulta general es de alrededor del 5% al 7% (APA, 2013). En población escolar, se encontraron tasas de prevalencia entre el 2% y el 10% para quejas físicas recurrentes. Sin embargo, cuando se trataba de quejas somáticas aisladas, el porcentaje se elevaba al 50%

(Garralda, 2010). Así mismo, otro estudio encontró que el sesenta por ciento de los estudiantes encuestados reportaron dolor en los últimos tres meses (Haraldstad et al., 2011).

El estudio de los factores que pueden derivar en la aparición de síntomas somáticos es de gran interés, ya que la presencia de sintomatología somática se ha asociado a diversos problemas que afectan a la calidad de vida. Se encontró que niños con dolor somático informaron una mayor intensidad y duración del dolor que los niños con dolor orgánico (Cozzi et al., 2017). Se encontró que las personas que informaban de niveles altos en síntomas somáticos también mostraban niveles bajos en el estado de salud percibido y usaban más servicios médicos, en comparación con los encuestados con otros problemas como ansiedad, depresión o enfermedades médicas (Tomenson et al., 2013). Otros estudios encuentran que las personas que reportan quejas somáticas tienden a utilizar más servicios de atención primaria (Leutgeb et al., 2018), y utilizan el doble de recursos médicos que la población general (Barsky et al., 2005). Además, las personas que refieren más síntomas somáticos tienden a tener niveles más bajos de satisfacción con la vida (Noyes et al., 1995) asociándose con un mayor riesgo de suicidio (Fang et al., 2019). Un estudio realizado por Koch y colaboradores (2009) encontró que el 43% de los pacientes de medicina general con quejas somáticas inexplicables continuaron teniendo las mismas quejas somáticas un año después e informaron una baja calidad de vida percibida. Los datos de las diferentes investigaciones sugieren que los síntomas somáticos acaban causando un gran coste en los ámbitos personal, económico y social.

Referente a los factores causantes de la sintomatología somática, la literatura indica que las causas son misceláneas y no pueden explicarse por una sola variable (Kellner, 1990). Algunos de los factores etiológicos para este trastorno han sido la

exposición a eventos traumáticos (Elklit & Christiansen, 2009), la vivencia de experiencias de abuso sexual (Bonvanie et al., 2015) o experiencias de acoso escolar (Malhi & Bharti, 2021). Algunos autores refieren que los síntomas somáticos también podrían ser un comportamiento aprendido realizado para llamar la atención (Silber, 2011).

1.2.1. Victimización y agresión de bullying como predictores de somatización

Los factores estresantes escolares han demostrado ser uno de los factores ambientales más comunes para el desarrollo y mantenimiento de los trastornos somáticos (Teo et al., 2008). El acoso escolar es un factor estresante importante con carácter estable y graves repercusiones descritas tanto a corto como a largo plazo, y que es prevalente en diferentes países (Zych et al., 2017). Por tanto, el bullying podría estar relacionado con los síntomas somáticos.

Efectivamente, la literatura indica que los síntomas somáticos pueden derivarse de experiencias de victimización previas. Varios trabajos han encontrado relación entre ser víctima de acoso escolar y una alta prevalencia de síntomas somáticos. Entre ellos, un meta-análisis realizado por Gini y colaboradores (2014b) con 17 estudios primarios transversales y 3 longitudinales encontró que la victimización de bullying se relacionó con dolores de cabeza tanto en estudios transversales como longitudinales. Una revisión realizada por Sansone y Sansone (2008) concluyó que las víctimas de bullying con frecuencia muestran síntomas somáticos como dolor de garganta, resfriado, tos, dolores de cabeza, problemas de sueño, dolor abdominal, enuresis y sensación de fatiga, entre otros. Moore y colaboradores (2017) publicaron un meta análisis con 57 estudios longitudinales y 108 estudios transversales en el que establecieron una relación entre ser

víctima de bullying y mayor prevalencia de síntomas somáticos, siendo los más frecuentes dolores de barriga y dificultades para dormir.

Referente a la asociación temporal entre la victimización y los síntomas somáticos, Fekkes y colaboradores (2006), en un estudio longitudinal de dos recogidas al inicio y fin del curso escolar y muestra de preadolescentes, encontraron que aquellos que fueron acosados desarrollaron más síntomas somáticos seis meses después, sin embargo, los preadolescentes con síntomas somáticos no sufrieron más acoso en ese periodo de tiempo. No obstante, otro estudio con adolescentes de carácter longitudinal de cinco años de duración realizado por Lee y Vaillancourt (2019) mostró que la victimización de acoso escolar predijo los síntomas somáticos y que los síntomas somáticos también predijeron más victimización. Sin embargo, los estudios anteriormente referidos han encontrado la relación entre síntomas somáticos y violencia en víctimas, pero no lo han estudiado en agresores. Dada la gran interrelación entre los roles de victimización y agresión, resulta necesario explorar si en el caso de los agresores, también existe relación con la sintomatología somática.

Se encuentra que la literatura sobre la relación entre agresión y síntomas somáticos es escasa, si bien, algunos estudios han encontrado relaciones entre síntomas somáticos y perpetración de violencia. A destacar, un meta-análisis de Gini y Pozzoli (2009) centrado en la relación entre el acoso escolar y los síntomas somáticos, dónde fueron incluidos 11 estudios primarios y se encontró que tanto la victimización como la perpetración del acoso estaban relacionados con los síntomas somáticos. En contra, otro meta-análisis posterior de estos mismos autores, con seis estudios longitudinales y 24 transversales, reveló que tan solo la victimización de bullying se relacionaba con síntomas somáticos en proyectos transversales y longitudinales, teniendo un riesgo los adolescentes victimizados dos veces

mayor que los agresores de manifestar síntomas somáticos (Gini & Pozzoli, 2013). A su vez, un estudio transversal realizado con adolescentes reclusos encontró que aquellos que eran víctimas y agresores reportaban más síntomas somáticos que aquellos que eran víctimas puras (Ireland, 2005). Algunos estudios señalan la relevancia de la aparición de síntomas somáticos en perfiles agresores. En este sentido, un estudio de Glaser y colaboradores (2005) encontró que los jóvenes agresores que tenían mayor sintomatología somática estaban en riesgo de tendencias suicidas y señalan la necesidad de atender a este colectivo.

Por lo tanto, las consecuencias psicosomáticas de la violencia han sido más estudiadas en víctimas, siendo la literatura más limitada y ambivalente en agresores (Malhi & Bharti, 2022). En este sentido, los resultados centrados en la relación entre agresión de bullying y somatización no son concluyentes. Así, la investigación muestra que la victimización del acoso escolar es un factor de riesgo para los síntomas somáticos, pero la relación entre somatización y perpetración es menos clara, aunque parece conllevar consecuencias negativas importantes. Actualmente, el número de estudios longitudinales centrados en la relación entre el bullying y los síntomas somáticos sigue siendo bajo pese a la importancia de ambos problemas.

1.2.2. Competencias socioemocionales y empatía como predictores de síntomas somáticos

Uno de los factores que más se han relacionado con la aparición de síntomas somáticos ha sido la gestión emocional. Diversos estudios encontraron que las personas con alexitimia alta, caracterizada por dificultades para identificar y comunicar emociones, tenían más quejas de salud que las personas con alexitimia baja. De Gucht y Heiser (2003), en un estudio transversal con 377 pacientes de atención temprana encontraron que

particularmente, la dificultad para identificar sentimientos tenía relevancia en la aparición de quejas de salud medicamente inexplicables. También se han observado hallazgos similares en población escolar, por ejemplo, Jellesma y colaboradores (2009) encontraron que los niños con síntomas somáticos tenían puntuaciones más altas en alexitimia, teniendo un mayor peso la dificultad en expresar emociones en la relación entre las variables. Un estudio con niños italianos encontró que los síntomas somáticos se asociaron positivamente con mayores puntuaciones en alexitimia y con un mayor riesgo de establecer y mantener relaciones sociales indeseables (Cerutti et al., 2017).

Un constructo estrechamente ligado y opuesto al de alexitimia, es el de competencia emocional. Algunos estudios mostraron que un bajo nivel de competencia emocional estaba relacionado con peor salud. Entre ellos, Mavroveli y colaboradores (2007), en un estudio transversal con una muestra de 282 adolescentes alemanes, señalaron que la inteligencia emocional se relacionaba con menores síntomas somáticos reportados. El entrenamiento en competencias emocionales resultó ser efectivo para reducir las quejas somáticas en un estudio experimental llevado a cabo por Nelis y colaboradores (2011). Referidos a población adolescente española, un estudio transversal realizado por Rieffe y colaboradores (2009), con una muestra de 441 estudiantes, encontró que la baja conciencia emocional estaba relacionada de manera única con las quejas somáticas. Igualmente, Ordoñez y colaboradores (2015), en un estudio transversal realizado con una muestra de 1134 estudiantes, encontró que el desajuste personal y los problemas con la discriminación de las emociones contribuyeron a la predicción de las quejas somáticas. Se encontró que las competencias sociales y emocionales son un predictor de la salud física y mental en un estudio transversal de Ciarrochi y colaboradores (2003). Aunque algunos estudios sugieren que las competencias sociales y emocionales

pueden actuar como un factor protector contra las quejas somáticas, sus diseños transversales no han permitido establecer el orden temporal entre los síntomas somáticos y las competencias sociales y emocionales, lo que limita el conocimiento sobre su potencial protector.

Otro constructo que ha sido estudiado en relación con la sintomatología somática es la empatía. La evidencia científica sugiere que la empatía afectiva podría estar relacionada con más síntomas somáticos, y a su vez, se han planteado variables mediadoras. Un estudio encontró que una mayor empatía afectiva en estudiantes universitarios se asoció con más síntomas internalizantes, y que dicha relación podría explicarse por dificultades en la regulación emocional (MacDonald & Price, 2019). Similarmente, Oliva y colaboradores (2014), a través de un estudio transversal con adolescentes españoles, encontró que la relación entre empatía y síntomas somáticos en el caso de las chicas estaba mediada por la claridad emocional, sugiriendo que la empatía afectiva sería una característica prosocial siempre que fuese acompañada de otras habilidades referidas al autoconocimiento y regulación emocional. De Greek y colaboradores (2012) encontraron que los pacientes con síntomas somáticos mostraron una actividad cerebral anormal y deterioro en el reconocimiento de emociones, junto con puntuaciones altas en angustia empática. La angustia empática fue definida como ansiedad e incomodidad al percibir la experiencia negativa de otras personas. Por tanto, la evidencia científica parece sugerir que las competencias socioemocionales podrían ejercer una influencia determinante en la expresión de síntomas somáticos ante la manifestación de empatía afectiva. Sin embargo, siguen siendo necesarios estudios longitudinales que puedan respaldar esta afirmación.

Referente a la relación con empatía cognitiva en particular, la literatura es muy escasa. Si bien, un estudio realizado con cuidadores de adultos mayores encontró que aquellos con alta empatía cognitiva consideraban que la situación de atención era menos estresante, estaban menos deprimidos, tenían una mayor salud física percibida e informaron una mayor satisfacción con la vida que los cuidadores con baja empatía cognitiva (Lee et al., 2001). Por lo tanto, la empatía cognitiva podría ser un potencial factor protector frente a los síntomas somáticos, de manera diferencial a la empatía afectiva, aunque se necesitan estudios que lo confirmen.

La escasez de estudios sobre factores de riesgo y protección de los síntomas somáticos, junto a su alta prevalencia, hacen que más estudios longitudinales sean necesarios para comprender la sintomatología somática y poder diseñar mejores programas de intervención, lo que se traduciría en mejoras en la calidad de vida a distintos niveles. Se trata de un problema con tendencia a la cronificación y que afecta desde a menores en el ámbito escolar, a pacientes en atención primaria, como a la satisfacción vital de cualquier persona que lo padece.

1.3. Relación entre conductas antisociales y somatización

La implicación en conductas violentas puede relacionarse con el desarrollo de otras conductas problemáticas, categorizadas como antisociales. El comportamiento antisocial es definido como un patrón de comportamientos que implican la violación de los derechos de las personas de diferentes maneras. Daño, robo, violencia, uso de sustancias y engaño a la autoridad son algunas de las principales conductas antisociales (Loeber y cols., 1989). La relación del uso de la violencia con otros comportamientos dañinos incrementa su importancia y repercusión. Por ello, en la actualidad, la conducta

antisocial es considerada un problema en todo el mundo, dadas las consecuencias que tiene para las víctimas y para los perpetradores (Hemphill et al., 2014).

Aunque este tipo de conductas son perjudiciales e importantes durante todo el ciclo vital, y por tanto, son objeto de estudio en cualquier etapa, el estudio de las conductas antisociales en la adolescencia resulta particularmente de interés, ya que es el período en el que las conductas antisociales alcanzan su punto máximo (Moffitt, 2018). Además, se considera el período en el que coexisten la mayoría de los perfiles de agresores (Jolliffe et al., 2017), por lo que el estudio de factores de riesgo y protección y consecuencias durante la niñez y adolescencia resultarían esenciales para su prevención.

Algunos investigadores han encontrado que el trastorno de personalidad antisocial tiene una alta comorbilidad con la somatización, encontrándose que ambos aparecen juntos en familiares más de lo esperado por el azar (Lilienfeld, 1992). Así lo reflejaron Bornstein y Gold (2008) en una revisión sistemática y meta-análisis. En este sentido, en una muestra de adultos diagnosticados con trastorno de personalidad antisocial, el 25% de los hombres y el 8.2% de las mujeres también fueron diagnosticados como somatizadores (Smith et al., 1991). La relación entre ambos constructos se ha constatado desde hace más de treinta años, hallándose que la conducta antisocial y la somatización eran más frecuentes en los niveles socioeconómicos más bajos, comenzaban temprano en la vida, tenían un curso crónico y se asociaban con el comportamiento suicida (Cloninger, 1978). En la actualidad, una revisión sistemática ha mostrado que la somatización y el comportamiento antisocial tenían similitudes biológicas, como niveles bajos de serotonina (Espiridion & Kerbel, 2020).

Aunque se ha encontrado que ambos trastornos parecen estar relacionados, también se ha encontrado que existen diferencias entre chicos y chicas en la prevalencia de síntomas somáticos y conductas antisociales. La somatización tiende a ser más frecuente en las mujeres, mientras que el comportamiento antisocial es más frecuente en los hombres (Castro et al., 2012). En este sentido, destaca un estudio donde se encontró que las hijas que fueron adoptadas y tenían padres biológicos con problemas de comportamiento antisocial, tenían más probabilidades de tener síntomas más somáticos (Cadoret et al., 1976). Un estudio de Cauffman y colaboradores (2007) encontró que los síntomas somáticos fueron dos veces más frecuentes en niñas detenidas que en niños detenidos. Sin embargo, Smith y colaboradores (1991) encontraron que era más frecuente el diagnóstico de somatización entre los hombres antisociales que entre las mujeres. Por el contrario, Castro y colaboradores (2012) encontraron que ni el rol de género femenino ni el masculino predecían los síntomas somáticos, mientras que el sexo femenino fue un factor protector de conducta antisocial y el sexo masculino predijo más comportamiento antisocial. El conocimiento de la influencia del género en la relación es necesario, ya que podría repercutir en la asociación entre ambos y en la eficacia de los planes preventivos.

Algunos estudios han mostrado que diversas conductas antisociales contribuyen a la presencia de síntomas somáticos en población escolar. Beiter y colaboradores (1991) en un estudio transversal encontraron que los niños con más quejas somáticas también tenían un mayor riesgo de comportamientos antisociales como el uso de sustancias, la actividad sexual temprana y la delincuencia. Loeber y Burke (2011) mostraron que los problemas de conducta en la infancia se relacionaron con la presencia de diferentes problemas internalizantes a largo plazo, como la depresión o la ansiedad. Posteriormente un meta análisis reveló que, aunque las manifestaciones psicosomáticas han sido

identificadas en agresores en algunos estudios, la relación no era concluyente (Gini & Pozzoli, 2013), si bien, estudios posteriores han vuelto a encontrar relación. Por ejemplo, un estudio transversal con una muestra representativa de población adolescente israelí encontró que los comportamientos de riesgo y violación de normas estaban relacionados con la somatización (Scharf et al., 2016).

Se ha hipotetizado que los individuos con un alto comportamiento antisocial tienden a experimentar mayor afecto negativo, definido como la tendencia a percibirse a sí mismo y al mundo negativamente. El alto grado de afecto negativo podría aumentar el grado de angustia percibida ante la exposición a eventos estresantes y con ello, aumentar la somatización (Wilson et al., 1999). En relación con lo anterior, se reveló que el afecto negativo estaba relacionado con las quejas somáticas, pero no con la salud objetiva, y era un predictor más fuerte de somatización para los hombres que para las mujeres (Castro et al., 2012; Watson & Pennebaker, 1989).

Diversas competencias emocionales se han asociado a ambos problemas. En este sentido, la alexitimia ha sido estrechamente ligada al desarrollo de sintomatología internalizante, y se ha asociado altamente con la somatización y con el comportamiento antisocial. Manninen y colaboradores (2011) encontraron que adolescentes agresores tenían niveles más altos de alexitimia que la población general y a su vez, la alexitimia se relacionó con más síntomas somáticos. También, Tille y Rose (2007), encontraron que los síntomas somáticos eran una patología común entre los delincuentes primerizos y los adolescentes reincidentes, y se planteó que podría deberse a la expresión de ira interna. Estos hallazgos dotan de gran importancia a la gestión emocional en relación con la prevención de dichos trastornos, sin embargo, no permiten establecer un orden en la relación para determinar si la conducta antisocial actuaría como factor de riesgo para el

desarrollo de síntomas somáticos o viceversa. Recientemente, Yang (2020) encontró que la regulación emocional mediaba en la relación entre la agresión psicológica y los síntomas somáticos en un estudio longitudinal, si bien, las características muestrales y el corto intervalo entre tiempos de estudio hacen necesaria la confirmación de estos resultados.

Dada la escasez y antigüedad de estudios sobre el tema, todavía se necesitan nuevos estudios que se centren explícitamente en la relación entre las diferentes conductas antisociales y somatización, ya que la mayoría de ellos contemplan la conducta antisocial en general. Además, en su mayoría tienen diseños transversales que imposibilitan establecer el orden de aparición de los problemas incluyendo las quejas somáticas y el comportamiento antisocial. Sin embargo, hallazgos previos señalan que el comportamiento antisocial podría aparecer primero y conducir a la somatización (Yang, 2020). Con el objetivo de conocer si las diversas conductas antisociales tienen relación con la somatización, la presente tesis explorará la relación de diferentes conductas antisociales de manera longitudinal con los síntomas somáticos. Concretamente, se explorará la relación de daño a la propiedad, violencia, robos, delitos de estado y abuso de sustancias con el incremento de síntomas somáticos.

1.4. Beneficios del estudio

Las conductas antisociales y los síntomas somáticos son problemas frecuentes con consecuencias importantes. Las conductas antisociales pueden afectar a diferentes contextos en la adolescencia. Algunos de los contextos más influyentes durante esta etapa son la escuela y el hogar. En la escuela, la disminución de la violencia entre iguales es uno de los retos más compartidos entre las diferentes instituciones, además, la agresión

hacia los docentes es un problema que también aparece en este contexto y que requiere atención. En el hogar, las agresiones a padres y hermanos son problemas sigilosos que afectan a familias (Miles & Condry, 2015). Por ello, estudiar los factores de riesgo y de protección comunes para la violencia en los diferentes contextos podría arrojar información de interés para el desarrollo de planes preventivos más específicos, ya que la aparición de conductas antisociales podría relacionarse con los elementos contextuales, como el familiar, académico o social. Por lo tanto, estas conductas estarían influidas por diferentes factores de riesgo y protección en función de los contextos en los que suceden (Hong & Espelage, 2012).

La somatización es considerada, como la depresión y ansiedad, un problema internalizante (Herskovic & Matamala, 2020). El interés de su estudio radica, entre otras cuestiones, en su asociación con una menor satisfacción vital y con otras patologías mentales. Siendo así, algunos estudios encuentran que la presencia de sintomatología somática se asocia a una mayor probabilidad de sufrir otros desórdenes mentales y se considera un indicador de peor pronóstico para las mismas, como depresión o ansiedad (Bekhuis et al., 2016; Herskovic & Matamala, 2020). Sin embargo, la carencia de estudios centrados en factores de riesgo y protección limitan el conocimiento y las posibilidades de intervención. Por ello, esta tesis aportará resultados longitudinales basados en variables que podrían estar relacionadas con la sintomatología somática en base a los estudios anteriores.

La literatura anteriormente revisada identifica algunos factores de riesgo y protección para la sintomatología somática y el uso de la violencia. Encontrar factores de protección que podrían promoverse para prevenir ambos problemas mejoraría la potencia de estos. Por ejemplo, se encuentra que la victimización de bullying se ha relacionado

tanto con un mayor riesgo de ejercer la violencia como con la aparición de síntomas somáticos. Aunque la victimización de bullying se ha relacionado tanto con el desarrollo de conductas violentas como con somatización, la relación entre estos dos es inconclusa. La investigación en la relación entre dichos factores podría arrojar un poco de luz en la comprensión de un fenómeno tan complejo y dañino como es el bullying, repercutiendo en la calidad de vida de las personas implicadas y en la eficacia de los planes preventivos.

Un alto nivel de competencias sociales y emocionales podría ser un factor protector para ambos problemas, aunque la escasez de estudios y el carácter transversal de la mayoría de ellos hacen que sea necesaria más investigación para apoyar esta afirmación. Además, el predominio del estudio de constructos afines, como alexitimia e inteligencia emocional, limita el conocimiento de la relación. Sin embargo, el estudio de las competencias socioemocionales como factor protector es respaldado por resultados empíricos, como los de Wilson y colaboradores (1999), quienes encontraron que la alta afectividad negativa percibida de los agresores facilitaría la aparición de síntomas somáticos. Un estudio transversal encontró que la inteligencia emocional se relacionaba con los síntomas somáticos incluso controlando la afectividad negativa (Andrei & Petrides, 2013). En este sentido, la alta inteligencia emocional también se ha relacionado con menores conductas antisociales en adolescentes en un estudio transversal (Petrides et al., 2006). Dada la similitud entre ambos constructos y la importancia de las competencias sociales, el estudio longitudinal de las competencias socioemocionales como factor protector para ambos problemas parece prometedor.

Por tanto, el estudio de la relación entre los síntomas somáticos y las conductas antisociales en edad escolar, y el conocimiento de la existencia de factores que puedan ser de riesgo y protección para ambos, permitiría elaborar planes de prevención más

potentes y precisos. También, conocer qué factores de riesgo y protección son más influyentes en la aparición de conductas violentas, en función del contexto o víctima objetivo, podría ayudar a enfocar los planes educativos para favorecer los factores protectores y reducir los factores de riesgo.

OBJETIVOS, HIPÓTESIS Y METODOLOGÍA

Capítulo 2. Objetivos, hipótesis y metodología

2.1. Objetivos e hipótesis

Dada su alta prevalencia y la escasez de estudios empíricos longitudinales, el objetivo de la presente tesis doctoral es avanzar en el conocimiento en factores de riesgo y protección de conducta antisocial y síntomas somáticos en edad escolar, así como el estudio de la relación entre ambos problemas. Para ello, se han llevado a cabo tres estudios independientes, pero a su vez interrelacionados, con carácter longitudinal.

Los objetivos de los tres estudios fueron los siguientes:

1. Explorar los factores de riesgo y de protección para las conductas violentas dirigidas a diferentes víctimas, en función del contexto (Estudio 1).

2. Estudiar los factores de riesgo y de protección de los síntomas somáticos (Estudio 2).

3. Comprender la relación entre diversas conductas antisociales y síntomas somáticos (Estudio 3).

Estudio 1 (Espejo-Siles, Zych, Farrington & Llorent, 2020)

Disminuir la violencia es un objetivo importante para la sociedad actual. Aunque el tema haya sido explorado en diferentes estudios, la mayor parte de la investigación en el campo se ha realizado siguiendo un diseño transversal, se ha visto limitada por incluir un único contexto o ha considerado un número limitado de predictores. Por ello, esta investigación tuvo como objetivo describir, a través de un estudio longitudinal, cómo

diferentes variables predicen la violencia en diferentes contextos, tales como en la escuela o en el hogar. Identificar los factores de riesgo y protección es esencial para prevenir y disminuir la violencia. Este trabajo investigó hasta qué punto la empatía y las competencias sociales y emocionales, la desconexión moral y la victimización son factores protectores o de riesgo para el desarrollo de diversas conductas violentas un año después.

Hipótesis: Se esperaba encontrar que las competencias sociales y emocionales y la empatía fuesen factores protectores (hipótesis 1) y la desconexión moral y la victimización factores de riesgo (hipótesis 2) para la violencia en diferentes contextos. Así mismo, se esperaba que la influencia de los factores de riesgo y de protección tuvieran un peso diferencial en función de la conducta violenta (hipótesis 3).

Estudio 2 (Espejo-Siles, Zych & Llorent, 2020)

Los síntomas somáticos están presentes y prevalecen en diferentes grupos de edad y tienen un impacto negativo en los ámbitos personal, económico y social. Aunque la investigación centrada en los síntomas somáticos haya sido fructífera, todavía existen lagunas apremiantes en el conocimiento longitudinal de factores de riesgo y protección. Varios estudios han encontrado relaciones entre las competencias sociales y emocionales, la empatía y el acoso escolar con la presencia de sintomatología somática. Sin embargo, la mayoría de estos estudios fueron transversales, y sus resultados no son concluyentes. El presente estudio se centra en las relaciones entre las competencias sociales y emocionales, la empatía, el acoso escolar, considerando roles de victimización y agresión, y los síntomas somáticos, analizando las relaciones directas y únicas entre los síntomas

somáticos y estos factores de riesgo y de protección. Además, estas relaciones se estudiaron transversal y longitudinalmente, con un año de seguimiento.

Hipótesis: Sobre la base de la revisión de la literatura, se esperaba encontrar que las puntuaciones altas en competencias sociales y emocionales predijeran puntuaciones bajas en síntomas somáticos (hipótesis 1). Del mismo modo, se esperaba encontrar que la alta empatía cognitiva y la baja empatía afectiva predijeran puntuaciones bajas en síntomas somáticos (hipótesis 2). Se esperaba que la victimización y perpetración del bullying predijeran más síntomas somáticos (hipótesis 3). Estas relaciones se esperaban encontrar transversalmente y un año después.

Estudio 3 (Espejo-Siles, Farrington, Zych & Llorent, 2022)

La somatización y el comportamiento antisocial son problemas frecuentes en las escuelas y en la sociedad en general. Los estudios que relacionan el comportamiento antisocial con la somatización son escasos y la mayoría de ellos poseen diseños transversales, lo que dificulta conocer la dirección de la relación. A pesar de esto, hay estudios que sugieren que el comportamiento antisocial podría ser un predictor de somatización. Por lo tanto, este estudio se centró en la relación entre los cinco factores que componen el comportamiento antisocial (violencia, daño a la propiedad, abuso de sustancias, delitos de estatus y robo) y la presencia de síntomas somáticos, utilizando un estudio longitudinal con un seguimiento de un año.

Hipótesis: Se esperaba encontrar que diferentes comportamientos antisociales predicen una mayor somatización (hipótesis 1). A su vez, se esperaba que los diferentes

comportamientos antisociales estudiados predigan somatización en diferente grado (hipótesis 2).

2.2. Metodología

Los estudios que componen la presente tesis doctoral tienen carácter longitudinal y siguen una metodología cuantitativa mediante encuestas. La población de referencia ha sido estudiantes de educación primaria y secundaria de Córdoba y Sevilla. A continuación, se detallan los participantes de cada estudio.

2.2.1. Participantes

Estudio 1

El Estudio 1 es una investigación longitudinal de un año de seguimiento, con una muestra de 871 estudiantes de diferentes escuelas de Córdoba y Sevilla (España). La muestra fue seleccionada por muestreo de conveniencia. Los estudiantes estaban matriculados en los cursos 1º, 2º, 3º y 4º de Educación Secundaria. El presente trabajo tuvo dos tiempos de recogida de datos. En la primera recogida de datos (T1), se midieron todas las variables predictoras y la muestra estuvo compuesta por 1270 estudiantes, siendo el 47.8% de las participantes chicas y el 52.2% chicos, con edades comprendidas entre los 9 y 16 años (M = 12.17, DT = 1.88). La variable violencia se midió en la segunda recogida de datos (T2) junto a las demás variables que fueron medidas en T1. En el segundo tiempo, la muestra se compuso de 871 estudiantes, siendo el 49.9% chicas con edades comprendidas entre 10 y 17 años (M = 12.99, DT = 1.87). La tasa de abandono de T1 a T2 fue del 31.4%. Las razones para el abandono fueron diversas: algunos códigos eran imposibles de emparejar, algunos estudiantes no asistieron a clase porque había una

ola de calor en el área geográfica, o simplemente no acudieron a clase porque eran los últimos días del trimestre.

Se compararon los estudiantes que no pudieron seguirse en T2 con los estudiantes que se mantuvieron con respecto a sus puntuaciones T1 en las variables analizadas en este estudio. La prueba t de Student mostró que los estudiantes que no pudieron seguirse en T2, en comparación con los estudiantes que se mantuvieron, tenían niveles más bajos de competencias sociales y emocionales como autoconciencia (t = 3.61, d = .29, p < .05), autogestión y motivación (t = 3.09, d = .22, p < .05), conciencia social (t = 3.06, d = .20, p < .05), toma de decisiones (t = 2.32, d = .15, p < .05) emociones morales (t = 2.86, d = .19, p < .05), y puntuaciones más altas en violencia contra maestros (t = 2.11, d = .14, p < .05), padres (t = 2.45, d = .18, p < .05) y otros estudiantes (t = 3.64, d = .25, p < .05), fueron más ruidosos en público (t = 3.25, d = .23, p < .05), portaban más armas (t = 2.67, d = .19, p < .05) y lanzaban más piedras sobre alguien (t = 3.28, d = .23, p < .05) en T1. Por tanto, sí hubo diferencias entre los participantes que pudieron seguirse y los que no, aunque los tamaños del efecto para estas diferencias fueron bastante pequeños (la ds de Cohen < .30) y no se espera que hayan influido sustancialmente en los resultados del estudio.

Estudio 2 y Estudio 3

Los estudios 2 y 3 se llevaron a cabo con una muestra de 384 estudiantes de ocho escuelas de Andalucía (España) incluyendo ciudades y pueblos. La muestra fue seleccionada por muestreo de conveniencia. En el tiempo 1, los alumnos estaban matriculados en 6º de Educación Primaria o 1º, 2º y 3º de Educación Secundaria

Obligatoria y, en el tiempo 2, los alumnos estaban matriculados en los grados 1º a 4º de Secundaria Obligatoria En T1, el 51.2% de los participantes fueron chicas, y el 48.8% chicos, con edades comprendidas entre 11 y 17 años (*M* = 12.94, *DT* = 1.41). Los participantes estaban matriculados en el último año de Educación Primaria (30.1%) y en los cursos 1º, 2º y 3º de Educación Secundaria (69.9%). En la segunda recogida de datos (T2) los participantes tenían entre 12 y 18 años (*M* = 13.94, *DT* = 1.42), y estaban matriculados en los grados 1º, 2º, 3º y 4º de Educación Secundaria.

Las muestras iniciales en T1 incluyeron a 698 participantes (tasa de abandono del 44.99%). En general, se encontraron las dificultades esperadas en el seguimiento de los estudiantes en una encuesta anónima durante dos años escolares. Las razones para la pérdida de la muestra fueron varias. Dado que los cuestionarios eran anónimos, éstos se emparejaron a través de códigos que no siempre fueron legibles, y no todos los estudiantes estuvieron presentes durante la segunda recogida por varios motivos (por ejemplo, muchos estudiantes cambiaron de escuela, algunos estudiantes faltaron a clase porque fueron a un viaje escolar, los cuestionarios se completaron en los últimos días del trimestre y algunos estudiantes estuvieron ausentes, hubo una ola de calor y los estudiantes faltaron).

En el Estudio 2, la prueba MCAR de Little, que incluyó las variables del estudio, mostró evidencia de que los datos faltaban completamente al azar ($\chi2_{(1258)} = 1270.54$, $p = .397$). Además, la prueba t de Student que comparó las puntuaciones en las variables T1 entre los participantes que permanecieron en el estudio y los que abandonaron mostró que las diferencias entre estos dos grupos no fueron significativas.

En el Estudio 3, se realizó una prueba t de Student para comparar a los participantes que permanecieron en el estudio y los que abandonaron las variables T1. Las comparaciones mostraron que las diferencias entre estos dos grupos no fueron significativas en los comportamientos antisociales totales (t = -1.40; p = .17), Robo (t = -1.41; p = .18), Comportamiento del daño (t = -1.20; p = .28), Violencia (t = -.14; p = .89), Uso de sustancias (t = -.65; p = .52) y Engañar a figuras de autoridad (t = -1.98; p = .05).

2.2.2. Instrumentos

Los datos obtenidos en la presente tesis doctoral han sido recopilados a través de cuestionarios de autoinforme, en los que se han utilizado diferentes instrumentos validados, los cuales se muestran en la siguiente tabla y se detallan a continuación.

Tabla 1. *Cuestionarios utilizados en cada estudio.*

Instrumentos y autores	Estudio
Cuestionario de Competencias Sociales y Emocionales (SEC-Q; Zych et al., 2018)	1, 2
Escala Básica de Empatía (Jolliffe & Farrington, 2006)	1, 2
European Bullying Intervention Project Questionnaire (Ortega-Ruiz et al., 2016)	1, 2
Derogatis Symptom Checklist Revised (Derogatis & Unger, 2010)	2, 3
Self-Reported Antisocial Behavior Questionnaire (Loeber et al., 1989).	1, 3
Moral Disengagement Scale (Bandura et al., 1996).	1
Escala de Emociones Morales (Álamo et al., 2019).	1

- *Cuestionario de Competencias Sociales y Emocionales* (SEC-Q; Zych et al., 2018). Este cuestionario fue utilizado para medir las competencias socioemocionales de los participantes en los estudios 1 y 2. El instrumento contiene 16 ítems divididos en 4 subescalas: *Autoconciencia* con 4 ítems (por ejemplo, "Sé etiquetar mis emociones"; Estudio 1: T1 α = .59; Estudio 2: T1 α = .62, T2 α = .72); *Autogestión y motivación*, con 3 ítems (por ejemplo, "Sé motivarme"; Estudio 1: T1 α = .59; Estudio 2: T1 α = .59, T2 α = .62); *Conciencia social y comportamiento prosocial,* con 6 ítems (por ejemplo, "Tengo buenas relaciones con mis compañeros de clase"; Estudio 1: T1 α = .64; Estudio 2: T1 α = .60, T2 α = .73), y *Toma de decisiones responsables*, con 3 ítems (por ejemplo, "Tomo decisiones analizando cuidadosamente las posibles consecuencias"; Estudio 1: T1 α = .63; Estudio 2: T1 α = .71, T2 α = .74). El cuestionario fue respondido en una escala Likert de 5 puntos que varió de 1 (muy en desacuerdo) a 5 (muy de acuerdo). Este cuestionario mostró muy buenos valores totales de alfa de Cronbach (Estudio 1: T1 α = .78; Estudio 2: T1 α = .78, T2 α = .83).

- *La Escala de Empatía Básica* (Jolliffe & Farrington, 2006) es probablemente la escala de empatía más utilizada en todo el mundo. Fue utilizada en los estudios 1 y 2 para medir la empatía de los encuestados. Se compone de dos factores: *Empatía afectiva* (9 ítems, por ejemplo, sentirse triste después de estar con un amigo que estaba triste) y *Empatía cognitiva* (11 ítems, por ejemplo, comprender la felicidad del amigo). La escala consta de 20 ítems en total con una escala de respuesta Likert de 5 puntos que va desde 1 (totalmente en desacuerdo), hasta 5 (totalmente de acuerdo), con buenos alfas de Cronbach en Empatía Cognitiva (Estudio 1: T1 α =

.70; Estudio 2: T1 α = .70, T2 α = .74) y Empatía Afectiva (Estudio 1: T1 α = .67; Estudio 2: T1 α = .74, T2 α = .76).

- *European Bullying Intervention Project Questionnaire* (Ortega-Ruiz et al., 2016) es un instrumento de medida del acoso cara a cara (por ejemplo, golpear, amenazar, destruir cosas, insultar, difundir rumores y exclusión social) con 7 ítems centrados en la *victimización* y 7 ítems enfocados en la *perpetración*. Este instrumento fue utilizado en los estudios 1 y 2 de la presente tesis. Los ítems fueron respondidos en una escala Likert de 5 puntos que varió de 0 (nunca) a 4 (más de una vez a la semana), referidos a comportamientos del año escolar pasado. El cuestionario mostró buenos valores alfa de Cronbach en victimización (Estudio 1: T1 α = .85; Estudio 2: T1 α = .84, T2 α = .86) y perpetración (Estudio 2: T1 α = .73, T2 α = .82).

- *Derogatis Symptom Checklist Revised* (Derogatis & Unger, 2010) es uno de los instrumentos más utilizados para evaluar diferentes síntomas psicopatológicos. Para los estudios 1 y 3 se utilizó la escala de somatización. Esta escala está compuesta por 12 ítems con una escala de respuesta Likert de 5 puntos, que van desde 0 (nada) a 4 (mucho). Los ítems se centran en diferentes síntomas corporales (cardiovasculares, respiratorias, gastrointestinales) y dolor físico (dolor de cabeza, lumbago, muscular). Esta escala mostró un buen valor alfa de Cronbach (Estudio 2: T2 α = .81; Estudio 3: T2 α = .81).

- *Self-Reported Antisocial Behavior Questionnaire* (Loeber et al., 1989). Este es un conocido cuestionario de comportamiento antisocial que incluyó 32 preguntas referidas a comportamientos que han sido emitidos en los últimos 6 meses,

respondidas en una escala Likert de 4 puntos de 1 (nunca) a 4 (más de 3 veces). El cuestionario fue utilizado en el Estudio 1 (cuestionario completo) y 3 (escala de violencia), y tiene una estructura de cinco factores: *Daños* con 5 ítems (por ejemplo, "¿Has roto, dañado o destrozado algo que pertenecía a tu escuela queriendo?" T1 α = .65; T2 α = .58) *Robo* con 9 artículos, (por ejemplo, "¿Ha tomado algo de una tienda sin pagar por ello?" T1 α = .72; T2 α = .73), *Violencia* con 7 elementos (por ejemplo, "¿Has golpeado a otros niños o te has metido en una pelea física con ellos?" (Estudio 3: T1 α= .59; T2 α = .60; Estudio 1: T2 α =.63), *Engañar a figuras de autoridad* con 5 ítems (por ejemplo, "Has hecho trampa en un examen escolar" T1 α= .55; T2 α = .57) y *uso de sustancias* con 6 artículos (por ejemplo, "¿Ha fumado marihuana?" T1 α= .76; T2 α= .79). Este cuestionario mostró un muy buen valor alfa de Cronbach total en la muestra del Estudio 3 (T1 α = .81, T2 α = .78).

- *Moral Disengagement Scale* (Bandura et al., 1996). Se utilizó una versión corta de este cuestionario con 19 ítems (Zych et al., 2020a) para explorar los mecanismos de desconexión moral en el Estudio 1. Este cuestionario tiene una escala de respuesta Likert de 5 puntos que varía de 1 (totalmente en desacuerdo) a 5 (totalmente de acuerdo) agrupada en 3 dominios: *Deshumanización*, con 7 ítems (por ejemplo, "Algunas personas merecen ser tratadas como animales"; T1 α = .68); *Minimizar las consecuencias*, con 4 ítems (por ejemplo, "Burlarse de alguien en realidad no le hace daño"; T1 α = .57); y *Reconstrucción* con 8 elementos (por ejemplo, "Está bien luchar para proteger a tus amigos"; T1 α = .77). La escala tuvo un alto valor alfa de Cronbach (T1 α =. 86).

- *Escala de Emociones Morales* (Álamo et al., 2019). Esta escala informa sentimientos que podrían aparecer junto con transgresiones morales, y fue usada en el Estudio 1. Se compone de 5 ítems, tales como "Me siento culpable si he hecho daño a un compañero" y se respondió en una escala Likert de 5 puntos que va desde 1 (muy en desacuerdo) a 5 (muy de acuerdo). Tuvo un valor Alfa de Cronbach adecuado (α = .68).

2.2.3. Diseño y Procedimiento

Las escuelas fueron seleccionadas por muestreo de conveniencia. Se estableció contacto con los directores y se explicaron los objetivos del estudio al equipo directivo. Tras ello, se obtuvo la aprobación del centro y el consentimiento de los padres. Antes de comenzar a rellenar el cuestionario, se informó a los participantes sobre el carácter anónimo, confidencial y voluntario. Los cuestionarios se administraron a través de una encuesta de papel y lápiz en un ambiente tranquilo durante las horas normales de clase, completándose en alrededor 40 minutos. Los investigadores recogieron la encuesta y supervisaron el proceso. Ni los profesores ni ningún agente externo tuvieron acceso a los cuestionarios individuales o datos de los estudiantes.

Todos los estudios de la presente tesis tienen un carácter longitudinal prospectivo, y fueron aprobados por el Comité de Ética de la Universidad de Córdoba siguiendo todos los principios éticos nacionales e internacionales. Además, se cumplieron con las normas éticas de la Declaración de Helsinki y las recomendaciones de la Ley Orgánica 3/2018 de protección de datos.

2.2.4. Análisis de datos

Los análisis estadísticos de los estudios que componen la presente tesis doctoral se han realizado principalmente con el programa PASW IBM 24. El programa FACTOR (Lorenzo-Seva & Ferrando, 2013) fue utilizado para comprobar la fiabilidad de las escalas utilizadas. A continuación, se detallan los análisis propios de cada estudio.

Estudio 1 (Espejo-Siles, Zych, Farrington & Llorent, 2020)

A través de la prueba *t* de Student se compararon los grupos para verificar si había relaciones entre los predictores y las variables dependientes. Las variables dependientes se derivaron de la escala de violencia del Self-Reported Antisocial Behavior Questionnaire (Loeber et al., 1989). Estas variables fueron golpear al maestro, golpear a los hermanos, golpear a los padres, golpear a estudiantes, ser ruidoso en público, portar armas y lanzar piedras. Las variables se dicotomizaron como *nunca* versus *una vez o más* con el objetivo de facilitar la interpretación de los resultados y teniendo en cuenta la falta de distribución normal en dichas variables. Se realizaron análisis de regresión logística por pasos para explorar relaciones únicas entre los predictores y las variables dependientes dicotomizadas. Género y la edad se introdujeron como variables de control en la regresión. Los de valor $p < .10$ se informaron en los resultados porque pueden ser clínicamente relevantes para mejorar la práctica, incluso si no alcanzan significación estadística de $p < .05$ (Thiese et al., 2016). Se calcularon los índices de fiabilidad alfa de Cronbach y omega de McDonald.

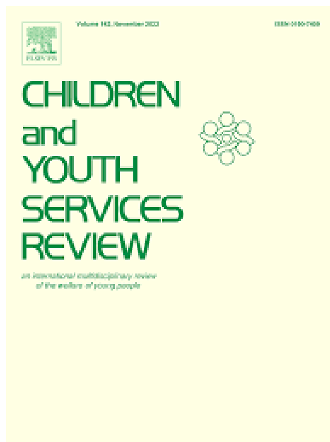
Estudio 2 (Espejo-Siles, Zych & Llorent, 2020)

En primer lugar, se realizaron análisis descriptivos. Se calcularon las medias y las desviaciones estándar y se utilizó la prueba *t* de Student para comparar chicos y chicas en ambos tiempos (T1 y T2). Las relaciones entre la somatización y otras variables (es decir, la perpetración y victimización del bullying, la empatía y las competencias sociales y emocionales) se analizaron con correlaciones de Pearson. Se realizaron análisis de regresión lineal para probar si las variables del estudio estaban relacionadas de manera única con la somatización. Las correlaciones y los análisis de regresión se realizaron de forma transversal y longitudinal. Se calcularon también los índices de fiabilidad alfa de Cronbach y omega de McDonald.

Estudio 3 (Espejo-Siles, Farrington, Zych & Llorent, 2022)

Se realizaron análisis descriptivos, calculándose las medias y las desviaciones típicas. Se utilizó la prueba *t* de Student para comparar a los participantes que permanecieron en ambos tiempos T1 y T2 con los participantes que abandonaron. Se realizaron correlaciones de Pearson para explorar las relaciones entre la somatización y los factores resultantes del cuestionario de comportamiento antisocial en chicos y chicas. Se realizaron análisis de regresión lineal para comprobar si diversas conductas antisociales y las variables de control (sexo y edad) estaban relacionados de forma única con la somatización. Las correlaciones y los análisis de regresión se probaron transversal y longitudinalmente. La *d* de Cohen se calculó utilizando la calculadora de tamaño del efecto de Campbell Collaboration para describir el tamaño de cada efecto significativo. Se calcularon los índices de fiabilidad alfa de Cronbach y omega de McDonald.

Capítulo 3. Estudio 1. Moral disengagement, victimization, empathy, social and emotional competencies as predictors of violence in children and adolescents



Espejo-Siles, R., Zych, I., Farrington, D. P., & Llorent, V. J. (2020). Moral disengagement, victimization, empathy, social and emotional competencies as predictors of violence in children and adolescents. *Children and Youth Services Review*, *118*, 105337.

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3.1. Abstract

Decreasing violence is an important objective for the society. Although the topic has been addressed in different studies, most of them are cross-sectional, focus on one context or include few variables. This research aims to investigate to what extent moral disengagement and victimization are risk factors, and empathy and social and emotional competencies are protective factors for the development of violent behavior one year later in different contexts, such as school or home. Children and adolescents were the target population since violent behavior usually starts early in life. A sample of 871 students from different schools in Andalusia (Spain) was selected for this longitudinal research with a year of follow-up. Moral disengagement was more important in the prediction of violent behaviors and peer violence than in direct violence towards adults. Bullying victimization was a risk factor for violence one year later at home and at school. Differences in empathy and social and emotional competencies between perpetrators and non-perpetrators were found. Male gender and a young age were predictors of violence. Reducing victimization at school could be important in decreasing violence in different contexts in the future. Training parents in social and emotional competencies could be useful for the young people who learn the strategies for problem solving from parents. Teaching more prosocial strategies for problem solving to young people with violent behavior could help them to re-evaluate the benefits and costs of violence and to decrease the use of moral disengagement.

3.2. Introduction

The importance of violence in the world derives from the number of consequences that it has for social, economic, health and relational aspects. It is not possible to know the exact impact that violence causes since it has many associated problems (Dahlberg & Krug, 2006). Violence refers to the use of physical force or threat to cause harm to other human beings (Elliott et al., 1998). It can be expressed in different scenarios and toward different people. This study is focused on school violence, (hitting teachers and hitting other students), home violence (hitting parents and hitting siblings) and other violent behaviors (being rowdy in public, carrying a weapon, and throwing rocks). At school, violence is the exercise of power over others and achieving one's own goals through aggressive behavior (Henry, 2000). It can take place among students (e.g., bullying) and toward teachers. Teacher victimization appears to be an international problem (Sorrentino & Farrington, 2019). A meta-analysis conducted by Longobardi et al. (2019) found that a high rate of physical and nonphysical violence directed toward teachers predicted physical and emotional damage (Wilson et al., 2011). Violence among students, known as bullying perpetration and victimization, is a common problem in different countries (Craig et al., 2009). Meta-analytic findings show that around one out of three children are involved in some forms of bullying (Modecki et al., 2014). Violence has several consequences for victims, such as health consequences (Espejo-Siles et al., 2020); and for perpetrators, who had a greater risk of offending later in life and more risk of suicidal behavior such as suicidal attempts and self-injuries (Ttofi et al., 2011). Even though research in the field has been fruitful, violence in and out of school is still an important problem and there are still many gaps in knowledge that need to be addressed. Most of the studies in the field have been cross-sectional or are focused separately on teachers or

students. Longitudinal studies focused on different types of violent behavior are still needed to better understand how to decrease violence, since some violent behaviors such as bullying are relatively stable behaviors that can last throughout the school years (Zych et al., 2020).

Regarding violence at home, research is usually focused on violence that men perpetrate against women. However, violence can take place among different members of a family. That is the case of child to parent violence, which has historically been a hidden problem but nowadays it is considered as domestic violence (Miles & Condry, 2015). Violence against parents and siblings could develop through social learning, seeing aggression as a way to solve conflicts (Hoffman et al., 2005). Results of a meta-analytic review showed that the probability of developing child-to-parent violence for children victimized by parents was 71% higher than for non-victimized children. (Gallego et al., 2019). The presence of any kind of domestic violence increases the risk of other kinds of domestic violence, such as violence against children (Slep & O'leary, 2005). Violence among siblings is usually normalized, accepted and expected by the society (Khan & Rogers, 2015). Nevertheless, sibling victimization was found to be less harmful but more chronic than peer victimization (Finkelhor et al., 2006) and it was related to the perpetration of emotional and physical dating violence, contributing to the cycle of violence (Simonelli et al., 2002). Prevention of violence at home is necessary to prevent violence in other contexts but multifactorial and longitudinal studies are still needed to shed some light on the topic.

3.2.1. Risk factors for violence

Some research has focused on predictors of violence, identifying risk factors. Moral disengagement has been associated with violent behaviors. It is defined as a

cognitive mechanism through which immoral behavior is interpreted as benign or worthy (Bandura, 1999). Some of these mechanisms described by Bandura et al., (1996) are dehumanization, which means that a victim is perceived as inferior and divested of human qualities. Minimization of consequences is a mechanism through which perpetrators do not assume the responsibility of the harmful effects of their actions. Reconstruction, makes detrimental conduct acceptable by portraying it in the service of valued social or moral purposes. A meta-analysis con- ducted by Gini et al., (2014) found that moral disengagement was significantly correlated with aggressive behavior and the effect sizes were larger for adolescents than for children. At school, moral disengagement was related to more peer victimization (Thornberg et al., 2017). Moral socialization begins in the family environment (Marzana et al., 2016) and families with a poor emotional bond may contribute to attitudes and beliefs which are expressive of moral disengagement (Mazzone & Camodeca, 2019).

Studies suggest that prior victimization can predict violence. Childhood experiences were found to be risk factors for adolescent violence and child maltreatment was related to violence perpetration (Duke et al., 2010). Adolescents who perpetrate violence against their parents or siblings experienced a high amount of childhood adversity (Nowakowski-Sims, 2019). Costa et al. (2015), in a systematic review, found that domestic violence, including its perpetration and victimization, were predicted by childhood family problems and other adverse early life experiences. The patterns and covariates of longitudinal variation in offending and victimization outcomes were similar (Sullivan et al., 2016). A meta- analysis performed by Zych et al., (2020) found that bullying victimization and perpetration was related to the involvement in dating violence. Also, youngsters who were both victims and offenders had a higher risk of mental health

problems than those who were only victims or offenders (Lereya et al., 2015). Previous school bullying victimization and perpetration is related to violence and other antisocial behaviors later in life (Nasaescu et al., 2020; Ttofi et al., 2012). Therefore, the prevention of victimization is essential to reduce the cycle of violent behavior and its consequences.

3.2.2. Protective factors against violence

Some studies have focused on protective factors against violence. High empathy was found to be protective against violence for males and females (Broidy et al., 2003). Cognitive empathy is the ability to understand the mental states or feelings of others and affective empathy is the ability to actually experience the feelings of other people (Hojat et al., 2002; Jolliffe & Farrington, 2006). A systematic review and meta-analysis found that violent offenders had low empathy (Jolliffe & Farrington, 2004). Low empathy was also related to a greater risk of recidivism in antisocial perpetrators (Romero-Martínez et al., 2016). High empathy was a protective factor for bullying and cyberbullying (Zych et al., 2020).

Moral emotions are those emotions associated with the benefit of the community or a person other than the percipient (Haidt, 2003). Moral emotions help to prevent aggressive behaviors by anticipating negative outcomes (Arsenio, 2014). Literature suggests that, by im- proving moral emotions, physical aggression could decrease (Jambon & Smetana, 2020).

Emotional competence is the ability to use emotional skills in a positive way in real life situations according to the needs of each moment (Saarni, 1999). Social competence is the capacity to integrate thinking, feeling, and behavior to achieve social tasks in a context (Topping et al., 2000). A study found that children who committed violence against their parents had a lower level of social and emotional competencies and

a lower ability to identify, express, and control emotions (Contreras & Cano, 2016). Also, witnessing domestic violence in childhood was related to emotional dysregulation which, in turn, was related to impaired social functioning (Katz et al., 2007). Different social and emotional competencies were also found to protect children and adolescents against violent behaviors such as bullying and cyberbullying (Zych et al., 2019b). Interventions to promote social and emotional skills were found to reduce violent behaviors (Gower et al., 2014).

3.2.3. The current study

Decreasing violence is an important objective that current society needs to achieve. Although this topic has been explored, most of the research in the field was conducted with a cross-sectional design, is limited to one context or includes a small number of predictors. Violence is influenced by environments and different variables. This research aims to investigate, through a longitudinal study, how different factors predict violence in different contexts, such as at school or at home. Identifying risk and protective factors is essential to prevent and decrease violence. Children and adolescents were the target population since violent behavior usually starts early in life. The outcomes selected in this study come from a validated scale of a validated questionnaire, and they include hitting teachers, hitting other students, hitting parents, hitting siblings, being rowdy in public, carrying a weapon, and throwing rocks. This research investigates to what extent empathy and social and emotional competencies, moral disengagement and victimization are protective or risk factors for the development of violent behavior one year later. Our hypotheses were that social and emotional competencies are protective factors and moral disengagement and victimization are risk factors.

3.3. Method

3.3.1. Participants

A sample of 871 students from different schools in Cordoba and Seville (Spain) was selected by convenience sampling for this longitudinal research with a year of follow-up. The current study is com- posed of two study waves. In the first wave of data (T1), all the predictor variables were measured. In a sample of 1270 students, 47.8% of the participants were girls and 52.2% of the participants were boys, aged between 9 and 16 years (M = 12.17, SD = 1.88). Violence was measured in the second wave of data (T2). In a sample of 871 retained students, 49.9% were girls and 50.1% were boys aged between 10 and 17 years (M = 12.99, SD = 1.87). The attrition rate from T1 to T2 was 31.4%. Reasons for attrition were diverse: some codes were impossible to match; some students were dismissed because there was a wave of heat in the geographic area, or they did not come because it was the last days of term.

Students who were dropped in T2 were compared with students who were kept regarding their T1 scores in variables analyzed in this study. Student´s t-test showed that students who were dropped in T2, compared to students who were kept, had lower levels of social and emotional competencies such as self-awareness ($t = 3.61$, $d = 0.29$, $p < .05$,), self-management and motivation ($t = 3.09$, $d = 0.22$, $p < .05$), social awareness ($t = 3.06$, $d = 0.20$, $p < .05$), decision making ($t = 2.32$, $d = 0.15$, $p < .05$) moral emotions ($t = 2.86$, $d = 0.19$, $p < .05$), reported higher scores in violence against teachers ($t = 2.11$, $d = 0.14$, $p < .05$), parents ($t = 2.45$, $d = 0.18$, $p < .05$)

and other students ($t = 3.64$, $d = 0.25$, $p < .05$), have been more rowdy in public ($t = 3.25$, $d = 0.23$, $p < .05$), carried weapon ($t = 2.67$, $d = 0.19$, $p < .05$) and thrown more rocks on somebody ($t = 3.28$, $d = 0.23$, $p < .05$) in T1. Effect sizes of these

differences were rather small and, given that this study focuses on relations among variables, it is unlikely that these differences affected the results.

3.3.2. Measures

Self-Reported Antisocial Behavior Questionnaire (SRA; Loeber et al., 1989). This is a well- known antisocial behavior questionnaire referring to behaviors that have been carried out in the past 6 months. Items are answered on a 4- point Likert scale ranging from 1 (Never) to 4 (more than 3 times). For this study, the violence scale with 7 items was used (e.g., "Have you hit other kids or gotten into a physical fight with them?") which contains items referred to school violence, (hitting teacher and hitting students), home violence (hitting parents and hitting siblings) and other violent behaviors (being rowdy in public, carrying a weapon, and throwing rocks) It has a Cronbach́ alpha at T2 of .63. This alpha value is acceptable in light of the fact that the constituent variables are not measured on normally distributed interval scales, so that the maximum possible value of inter-item correlations is much less than 1. This depresses the alpha value.

The Mechanisms of Moral Disengagement Scale (Bandura et al., 1996). A short version of this questionnaire with 19 items was used for this study. This scale has a 5-point Likert response scale ranging from 1 (totally disagree) to 5 (totally agree) grouped into 3 domains: Dehumanization, with 7 items (e.g., "Some people deserve to be treated as animals"; T1 $\alpha = .68$); Minimizing consequences, with 4 items (e.g., "It is fine to say little lies because actually it does not hurt"; T1 $\alpha = .57$); and Reconstruction with 8 items (e.g., "It is fine fight to protect your friends"; T1 $\alpha = .77$). The scale had a high Cronbach's alpha value (T1 $\alpha = .86$).

Moral emotions scale (Álamo, et al., 2019). The scale reports feelings that could appear alongside moral transgressions. It was answered on a 5-point Likert scale ranging

from 1 (strongly disagree) to 5 (strongly agree), with 5 items like “I feel guilty if I hurt another student” (T1 α = .68).

The European Bullying Intervention Project Questionnaire (Ortega-Ruiz et al., 2016) is a measure of face-to-face bullying. For this study, the victimization scale was used. It is composed by 7 items answered on a 5-point Likert scale ranging from 0 (never) to 4 (more than once a week). Students were asked to respond thinking about the past school year behaviors. The questionnaire had a high Cronbach's alpha (victimization T1 α = .85).

The Basic Empathy Scale (Jolliffe & Farrington, 2006) is composed of two factors: Affective Empathy (11 items, e.g., feeling sad after staying with a friend who was sad) and Cognitive Empathy (9 items, e.g., understanding friend’s happiness). It is probably the most widely used empathy scale worldwide. The scale consists of 20 items in total, each answered on a 5-point Likert response scale ranging from 1 (totally disagree) to 5 (totally agree), with a Cronbach́ alpha for Affective Empathy at T1 of .70 and for Cognitive Empathy at T1 of .67.

The Social and Emotional Competencies Questionnaire (SEC-Q; Zych et al., 2018) contains 16 items divided into 4 subscales: Self-awareness, with 4 items (e.g., “I know how to label my emotions”, T1 α = .59); Self-management and motivation, with 3 items (e.g., “I know how to motivate myself”, T1 α = .59); Social awareness and prosocial behavior with 6 items (e.g., “I have good relationships with my classmates”, T1 α = 0.64); and Responsible decision-making with 3 items (e.g., “I make decisions analyzing carefully possible consequences”, T1 α = .63). The questionnaire was answered on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). This questionnaire had a high Cronbach's alpha with the current sample (T1 α = .78).

3.3.3. Design and procedure

This is a longitudinal study with two waves of data. Data from the first wave (T1) were collected in June 2017 and data from the second wave (T2) were collected in June 2018. All the variables were measured at both times, and the variables Moral disengagement, Moral emotions, Victimization, Empathy and Social and emotional competencies were selected in T1 and the outcome variable, Violence, was selected in T2. T1 and T2 questionnaires were matched through an anonymous code. Schools were selected by convenience sampling. Head teachers were contacted, and the objectives of the study were explained to them. Consents were obtained and participants were informed that their participation was voluntary, and that the information given was anonymous and confidential. Questionnaires were administered during the regular classroom hours and were completed in around 45 min. Questionnaires were filled out as a paper-and-pencil survey in a quiet environment. Researchers collected the survey and supervised the process. Teachers or peers did not have access to the individual questionnaires or data of the students. The study was approved by the Ethics Committee of the University of Cordoba and followed all the national and international ethical standards.

3.3.4. Data analysis

Data analyses were carried out using the PASW IBM 24 software. Groups were compared through Studentś*t*-test to check if there were relations between the predictors and the outcome variables. The out- come variables were derived from the violence scale of the Self- Reported Antisocial Behavior Questionnaire (Loeber et al., 1989). These variables were hitting teachers, hitting students, hitting siblings, hitting parents, being rowdy in public, carrying a weapon and throwing rocks and they were dichotomized as never versus once or more. Forward stepwise logistic regression analyses were performed

to explore unique relations between predictors and dichotomized outcome variables. Gender and age were entered as control variables in the regression. P- values less than 0.10 are reported in the results because they may be clinically relevant for improving practice (Thiese et al., 2016).

3.4. Results

Relations between predictors and outcome variables are shown in Table 1. Differences in Moral disengagement were found in most of the outcome variables. The uninvolved group scored lower in *Dehumanization, Minimization of consequences* and *Reconstruction*, compared to the participants who reported *Hitting teacher, Hitting students, Being rowdy in public, Carrying a weapon,* and *Throwing rocks*. The uninvolved participants scored lower in *Minimization of consequences* compared to those who reported *Hitting siblings*. In *Moral emotions*, the uninvolved students scored higher compared to the participants who reported *Hitting students, Being rowdy in public, Carrying a Weapon* and *Throwing rocks*. Uninvolved students scored lower in *Victimization* compared to those who reported the students who reported *Hitting parents, Hitting siblings, Hitting students* and *Carrying a weapon.*

The uninvolved students scored higher in *Cognitive* and *Affective empathy* compared to the participants who reported *Carrying a weapon* and *Throwing rocks*. The uninvolved students scored higher in *Cognitive empathy* compared to those who reported *Being rowdy in public*. The uninvolved students scored higher in *Affective empathy* compared to those who reported *Hitting students*. In *Social and Emotional Competencies*, differences were found for most of the outcome variables, where the uninvolved group scored higher than the group that perpetrated violent behaviors at least once. Uninvolved

students scored higher in *Social awareness* compared to the participants who reported *Hitting parents.* Uninvolved students scored higher in *Responsible decision making* compared to the participants who reported *Hitting parents* and *Hitting siblings*. Uninvolved students scored higher in *Self-awareness, Social-awareness* and *Responsible decision making* compared to the participants who reported *Hitting students* and *Being rowdy in public*. Uninvolved students scored higher in *Self-management and motivation* compared to the participants who reported *Carrying a weapon* and uninvolved students scored higher in *Self-awareness* and *Social awareness* compared to the participants who reported *Throwing rocks.*

Table 1. Predictors versus outcome variables.

	Hitting teacher			Hitting parents			Hitting siblings			Hitting students			Rowdy in public			Carrying a weapon			Throwing rocks		
	Never M(SD)	Once/ more M(SD)	*t*	Never M(SD)	Once/ more M(SD)	*t*	Never M(SD)	Once/ more M(SD)	*t*	Never M(SD)	Once/ more M(SD)	*t*	Never M (SD)	Once/ more M(SD)	*t*	Never M(SD)	Once/ more M(SD)	*t*	Never M(S D)	Once/ more M(SD)	*t*
Dehumanization	13.76 (4.90)	16.04 (5.16)	-2.33*	13.78 (4.92)	15.36 (4.73)	n/s	13.55 (4.85)	14.18 (5.01)	n/s	13.39 (4.81)	15.16 (5.02)	-4.57**	13.43 (4.85)	15.29 (4.90)	-4.55**	13.70 (4.86)	15.81 (5.46)	-3.01**	13.58 (4.87)	15.53 (4.90)	-3.90**
Minimizat. consequen.	6.75 (2.74)	8.00 (3.03)	-2.25*	6.77 (2.76)	7.42 (2.75)	n/s	6.61 (2.72)	7.03 (2.80)	-2.22*	6.52 (2.65)	7.60 (2.93)	-5.00**	6.48 (2.55)	7.88 (3.08	-6.21**	6.71 (2.70)	8.06 (3.41)	-3.36**	6.63 (2.63)	7.85 (3.31)	-4.36**
Reconstruction	15.13 (5.37)	17.60 (6.67)	-2.25*	15.23 (5.46)	14.53 (4.67)	n/s	14.95 (5.36)	15.55 (5.52)	n/s	14.49 (5.15)	17.46 (5.66)	-7.05**	14.76 (5.40)	16.83 (5.23)	-4.58**	15.06 (5.40)	17.41 (5.59)	-2.95**	14.87 (5.29)	17.54 (5.85)	-4.83**
Moral emotions	21.81 (3.10)	20.76 (3.96)	n/s	21.79 (3.10)	21.21 (3.64)	n/s	21.89 (3.09)	21.64 (3.15)	n/s	22.08 (2.89)	20.87 (3.60)	5.02**	21.97 (2.99)	21.06 (3.51)	3.55**	21.83 (3.04)	20.69 (4.18)	2.56*	21.90 (3.03)	20.94 (3.61)	3.04**
Victimization	12.25 (5.80)	14.00 (6.85)	n/s	12.23 (5.83)	14.69 (5.74)	-2.34*	11.78 (5.52)	12.95 (6.15)	-2.94**	11.84 (5..62)	13.67 (6.24)	-4.01**	12.18 (5.79)	12.75 (6.05)	n/s	12.19 (5.81)	13.96 (5.95)	-2.13*	12.17 (5.81)	13.25 (6.03)	n/s
Cognitive Empathy	36.39 (5.35)	34.76 (5.89)	n/s	36.36 (5.37)	35.00 (5.85)	n/s	36.42 (5.30)	36.17 (5.49)	n/s	36.47 (5.33)	35.86 (5.51)	n/s	36.54 (5.27)	35.58 (5.72)	2.09*	36.56 (5.17)	32.71 (7.11)	4.87**	36.51 (5.43)	35.07 (4.85)	2.54*
Affective Empathy	39.00 (7.58)	38.40 (7.19)	n/s	39.02 (7.54)	37.97 (8.04)	n/s	39.00 (7.59)	39.00 (7.54)	n/s	39.74 (7.48)	36.71 (7.36)	5.02**	39.14 (7.61)	38.46 (7.40)	n/s	39.22 (7.55)	35.20 (6.82)	3.63**	39.31 (7.65)	36.87 (6.55)	3.10**
Self-awareness	16.49 (2.50)	15.89 (2.94)	n/s	16.47 (2.52)	15.89 (2.54)	n/s	16.57 (2.49)	16.31 (2.56)	n/s	16.62 (2.49)	15.97 (2.55)	3.35**	16.59 (2.47)	15.94 (2.65)	3.12**	16.50 (2.47)	15.90 (3.15)	n/s	16.52 (2.54)	16.04 (2.39)	1.98*
Self-manag. and motivation	12.49 (2.09)	12.75 (2.11)	n/s	12.51 (2.06)	12.14 (2.65)	n/s	12.46 (2.10)	12.53 (2.07)	n/s	12.53 (2.08)	12.36 (2.11)	n/s	12.51 (2.11)	12.41 (2.01)	n/s	12.53 (2.07)	11.92 (2.33)	2.02*	12.53 (2.09)	12.24 (2.05)	n/s
Social-awareness and PB	24.36 (3.25)	23.04 (3.46)	2.08*	24.34 (3.22)	23.40 (4.17)	n/s	24.49 (3.15)	24.09 (3.40)	n/s	24.68 (3.15)	23.33 (3.40)	5.28**	24.53 (3.18)	23.57 (3.45)	3.52**	24.37 (3.22)	23.61 (3.77)	n/s	24.44 (3.28)	23.50 (3.05)	2.81**
Responsible decision-	10.77 (2.64)	9.85 (2.96)	n/s	10.77 (2.61)	9.53 (3.22)	2.68**	10.93 (2.68)	10.48 (2.59)	2.45*	10.89 (2.56)	10.24 (2.86)	3.15**	10.85 (2.66)	10.27 (2.56)	2.65**	10.76 (2.62)	10.35 (3.07)	n/s	10.78 (2.64)	10.42 (2.70)	n/s

Notes: *$p < .05$, **$p < .01$. * full name of variables, by order, are: Dehumanization, Minimizing of consequences, Reconstruction, Moral emotions, Victimization, Cognitive Empathy, Affective Empathy, Self-awareness, Self-management and motivation, Social-awareness and prosocial behavior and Responsible decision-making.

Tables 2a and 2b show forward stepwise regression results. Regarding Moral disengagement, higher scores in *Dehumanization* predicted higher scores in Carrying a weapon (B = 0.06, SE = 0.03, p = .079). Higher scores in *Minimization of consequences* predicted high scores in *Hitting siblings* (B = 0.06, SE = 0.03, p = .085), *Being rowdy in public* (B = 0.17, SE = 0.04, p = .001) and in the total score of *Violence*, composed by all the outcomes (B = 0.06, SE = 0.04, p = .077). Higher scores in *Reconstruction* predicted high scores in *Hitting students* (B = 0.06, SE = 0.02, p = .001) and *Throwing rocks* (B = 0.07, SE = 0.02, p = .003). Higher scores in *Victimization* predicted higher scores in *Hitting parents* (B = 0.07, SE = 0.03, p = .029), *Hitting siblings* (B = 0.05, SE = 0.02, p = .002), *Hitting students* (B = 0.05, SE = 0.02, p = .007), *Throwing rocks* (B = 0.04, SE = 0.02, p = .036) and in the total score of *Violence* (B = 0.07, SE = 0.02, p = .001). Scoring high in *Cognitive and Affective empathy* predicted low scores in *Carrying a weapon* (B = −0.09, SE = 0.03, p = .003; B = −0.06, SE = 0.03, p = .026).

Regarding social and emotional competencies, high scores in *Self-management and motivation* predicted high scores in *Hitting teacher* (B = 0.26, SE = 0.16, p = .10), Hitting siblings (B = 0.11, SE = 0.04, p = .01) and a higher score in the total score of *Violence* (B = 0.11, SE = 0.05, p = .017). Higher scores in *Social awareness* predicted lower scores in *Hitting students* (B = −0.07, SE = 0.03, p = .033). Higher scores in *Responsible decision making* predicted lower scores in *Hitting teacher* (B = −0.21, SE = 0.09, p = .025), *Hitting siblings* (B = −0.10, SE = 0.03, p = .007), Being *Rowdy in public* (B = −0.07, SE = 0.04, p = .064) and the total score of *Violence* (B = −0.09, SE = 0.04, p = .011). Higher scores in *Moral emotions* predicted lower scores in *Hitting students* (B = −0.07, SE = 0.03, p = .059). An older *age* predicted lower scores in *Hitting parents* (B = −0.28, SE = 0.14, p = .045), *Hitting siblings* (B = −0.17, SE = 0.05, p = .001) and in the total score of *Violence* (B = −0.10, SE = 0.05, p = .035). Male *gender* predicted

higher scores in *Hitting students* (B = 0.98, SE = 0.22, *p* = .001), *Throwing rocks* (B = 0.64, SE = 0.28, *p* = .022) and in the total score of *Violence* (B = 0.50, SE = 0.18, *p* = .005).

Table 2a. Forward stepwise regression among predictors of study variables.

	Hitting teacher			Hitting parents			Hitting siblings			Hitting students		
	B	SE	*p*	B	SE	*p*	B	SE	*p*	B	SE	*p*
Dehumanization	-	-	-	-	-	-	-	-	-	-	-	-
Minimization cons.	-	-	-	-	-	-	.06(5)	.03	.085	-	-	-
Reconstruction	-	-	-	-	-	-	-	-	-	.06(1)	.02	.001
Moral emotions	-	-	-	-	-	-	-	-	-	-.07(5)	.03	.059
Victimization	-	-	-	.07(1)	.03	.029	.05(1)	.02	.002	.05(4)	.02	.007
Cognitive empathy	-	-	-	-	-	-	-	-	-	-	-	-
Affective empathy	-	-	-	-	-	-	-	-	-	-	-	-
Self-awareneness	-	-	-	-	-	-	-	-	-	-	-	-
Motivation	.26(2)	.16	.10	-	-	-	.11(4)	.04	.010	-	-	-
Social awareness	-	-	-	-	-	-	-	-	-	-.07(3)	.03	.033
Resp. Decisión	-.21(1)	.09	.025	-	-	-	-.10(3)	.03	.007	-	-	-
Age	-	-	-	-.28(2)	.14	.045	-.17(2)	.05	.001	-	-	-
Gender	-	-	-	-	-	-	-	-	-	.98(2)	.22	.001

Notes: numbers in parenthesis after B values show the order of entry in the logistic regression. * full name of variables, by order, are: Dehumanization, Minimizing of consequences, Reconstruction, Moral emotions, Victimization, Cognitive empathy, Affective empathy, Self-awareness, Self-management and motivation, Social-awareness and prosocial behavior and Responsible decision-making.

Table 2b. Forward stepwise regression among predictors of study variables.

	Rowdy in public			Carrying a weapon			Throwing rocks			Total violence		
	B	SE	*p*	B	SE	*p*	B	SE	*p*	B	SE	*p*
Dehumanization	-	-	-	.06(3)	.03	.079	-	-	-	-	-	-
Minimization	.17(1)	.04	.001	-	-	-	-	-	-	.06(6)	.04	.077
Reconstruction	-	-	-	-	-	-	.07(1)	.02	.003	-	-	-
Moral emotions	-	-	-	-	-	-	-	-	-	-	-	-
Victimization	-	-	-	-	-	-	.04(3)	.02	.036	.07(1)	.02	.001
Cognitive empathy	-	-	-	-.09(1)	.03	.003	-	-	-	-	-	-
Affective empathy	-	-	-	-.06(2)	.03	.026	-	-	-	-	-	-
Self-awareness	-	-	-	-	-	-	-	-	-	-	-	-
Motivation	-	-	-	-	-	-	-	-	-	.11(5)	.05	.017
Social awareness	-	-	-	-	-	-	-	-	-	-	-	-
Resp. decision	-.07(2)	.04	.064	-	-	-	-	-	-	-.09(4)	.04	.011
Age	-	-	-	-	-	-	-	-	-	-.10(3)	.05	.035
Gender	-	-	-	-	-	-	.64(2)	.28	.022	.50(2)	.18	.005

Notes: numbers in parenthesis after B values show the order of entry in the logistic regression. * full name of variables, by order, are: Dehumanization, Minimizing of consequences, Reconstruction, Moral emotions, Victimization, Cognitive empathy, Affective empathy, Self-awareness, Self-management and motivation, Social-awareness and prosocial behavior and Responsible decision-making.

3.5. Discussion

The main aim of this study was to investigate to what extent moral disengagement and victimization were risk factors, and to what extent empathy and social and emotional competencies were protective fac- tors against violence. Results support in general the initial hypotheses. However, high self-management and motivation, one of the factors of the social and emotional questionnaire, predicted more violence to- wards teachers and siblings and total violence. This factor refers to having motivation to follow one's own objectives despite difficulties. In all the outcomes where self-management and motivation was a risk factor, responsible decision making appeared as a protective factor. Responsible decision making refers to thinking about advantages and disadvantages before making a decision and not making reckless decisions. Therefore, considering these two predictors together, it is possible that the use of violence directly towards people was related to the tendency to make impulsive decisions and a blind motivation to achieve one's own objectives without thinking about the disadvantages or negative consequences. Other studies showed that violence is multicausal and that many predictors and the interactions among them should be considered at the same time to fully understand it (Zych et al., 2020).

Moral disengagement was more important in the prediction of violent behaviors and peer violence than in direct violence towards adults. Higher scores in moral disengagement were found in youngsters who engaged in violence at school and in violent behaviors (being rowdy in public, carrying a weapon or throwing rocks). Conversely, these differences were not significant in violence at home, where a young age was a predictor. In agreement with a meta-analytic review by Gini et al. (2014), the effect sizes for moral disengagement are larger for adolescents than for children. It is possible that

the difference in moral disengagement found between contexts was related to the young age of the perpetrators. This study also showed that male gender was a predictor of violence. This is congruent with the tendency of males to have more moral disengagement (Paciello et al., 2008; Zych & Llorent, 2019) and to suffer more victimization than females (Finkelhor et al., 2007).

Victimization at school was a risk factor for developing violent behaviors at home (hitting parents and siblings) and also at school (hitting students). Previous studies showed that victimization increased the risk of later violence by about one-third (Ttofi et al., 2012). Some victims are motivated to become violent offenders as a consequence of their experiences of victimization, even victims who have no previous history of violent behavior (Apel & Burrow, 2011). Victimization was the strongest predictor in the model with all the outcome variables in this study. This research supports the cycle of violence (Widom, 1989), where children who have been victimized could accept violence as a strategy to deal with daily problems, likely without thinking about the negative consequences of this behavior. The use of violence contributes to the development and maintenance of other problems, such as somatization (Espejo-Siles et al., 2020). Reducing victimization at school is essential to decrease violence at home and school, and decreasing its consequences later in life.

Higher scores in empathy were a protective factor against carrying a weapon one year later. Non-perpetrators scored higher than perpetrators, suggesting that empathy promotion could help decrease violence. In line with this, Zych et al. (2019) in a systematic review and meta-analysis found that high empathy and different social and emotional competencies were protective against bullying and cyberbullying, but research findings regarding this relation are inconsistent. Nevertheless, empathy was not a protective factor against violence in the current study. McPhedran (2009) found that the

relation between low empathy and violence was stronger for older participants, so the current results may be related to the younger age of the participants.

Social and emotional competencies were protective against violence. At home, youngsters who perpetrate violence had lower scores in responsible decision taking. At school, youngsters who perpetrate violence had a lower level of social awareness. Lower social awareness was also a predictor of student hitting one year later. These results show that there are differences in social and emotional competencies scores between perpetrators and non-perpetrators, suggesting that since scores are different in both groups, programs to increase social and emotional competencies of perpetrators could have an effect in reducing violence in different contexts, as shown by some previous studies (Durlak et al., 2011).

This study has strengths, such as a longitudinal design which allows genuine predictions, but it also has limitations. Self- reports could have response bias even if students were told that their responses were anonymous and confidential. Some students were missed in the second wave, and some codes were impossible to match, so the final sample was smaller than the sample in the first wave. Some of the measures used in the study had a relatively low reliability; therefore, more research is needed to investigate the extent to which these results can be replicated.

Moreover, students who dropped out of the second wave had worse social and emotional competencies and reported more violence in wave 1. Nevertheless, it is unlikely that these problems affected the results as this study did not evaluate a program and it focused on relations among variables that remain unchanged. Linear regression was carried out, but other types of relations such as interactions among variables were not explored and could be included in future studies. Victimization at home was not measured in this study and could also be an interesting factor to explore in future.

Implications for policy and practice can be derived from this study. Victimization at school had an important place in the prediction of violence one year later at home and at school. Reducing victimization at school could be important in decreasing violence in different contexts in the future. Differences in social and emotional competencies and empathy were found between perpetrators and non-perpetrators; there- fore, programs to promote these competencies at school could have an effect in decreasing violent behaviors. Training parents in social and emotional competencies could be especially useful, since children learn firstly at home and from parents the strategies for solving problems (Zych et al., 2020). Especially, training adolescents in re- evaluating their goals and the consequences of their violent behavior could have an impact on decreasing violence later in life. Bandura (1973) suggested that human behavior is regulated by anticipated consequences of prospective actions, with individuals aiming to maximize benefits and minimize costs. It might be possible that teaching different strategies for solving problems to violent children and adolescents could help them compare and re-evaluate the benefits and costs that the violent behavior has, and consequently, decrease the use of moral disengagement since violence could be seen as a high-cost behavior. Future longitudinal research is needed to include findings of the current study in intervention programs to decrease violence and test their effectiveness.

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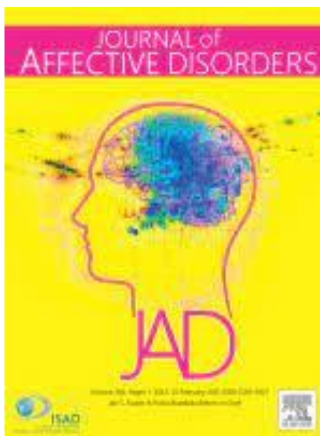
Capítulo 4. Estudio 2. Social and emotional competencies, empathy, bullying perpetration and victimization as longitudinal predictors of somatic symptoms in adolescence.



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4.1. Abstract

Somatic symptoms are an important adolescent health problem that affects individuals and the society as a whole. Although research focused on somatic symptoms has been very fruitful, studies about their longitudinal predictors are still in their early stages. The present study focuses on the relations between social and emotional competencies, empathy and bullying, and the presence of somatic symptoms concurrently and one year later. The sample consisted of 384 Spanish adolescents, who participated in a longitudinal study with a one-year follow-up. Validated questionnaires were used to assess social and emotional competencies, bullying, empathy and somatic complaints. High scores in social and emotional competencies were related to low scores in somatic symptoms one year later. High affective empathy predicted more somatic symptoms concurrently and one year later. Bullying victimization was related to more somatic symptoms concurrently and one year later. Other reports could be useful to further validate the results obtained with self-reports. Non-linear relations could be tested. Representative samples could be used in future studies. These results suggest that it may be important to promote social and emotional competencies and reduce bullying to decrease somatic symptoms. More studies are needed to understand the impact of high affective empathy on somatic symptoms.

Keywords: somatic symptoms, empathy, social and emotional competencies, bullying

4.2. Introduction

Many authors have been interested in the relation between mental processes and physical health throughout the history. Somatization was first defined at the beginning of the 20th century when, using the psychoanalytic framework, it was pointed out that some psychological disorders produce physical disorders (Marin & Carron, 2002). Since then, somatic problems have been studied using different psychological approaches.

Somatic symptoms were included in the diagnostic classifications of the DSM III-R as a part of the somatoform disorder that included the presence of multiple somatic symptoms or the belief of being sick (APA, 1987). Pain, fatigue, dizziness and dyspnea were the most common symptoms among patients diagnosed with the somatoform disorder (Lipowski, 1987).

The DSM IV updated the criteria of the somatoform disorder (APA, 2000), including the perceived symptoms that could not be fully explained by the organic etiology even if a patient was diagnosed with a physical disease. In addition, the diagnosis of the somatoform disorder in the DSM IV required the presence of at least four pain symptoms, two gastrointestinal symptoms, one sexual symptom and one pseudoneurological symptom for more than a year.

In the current version of the diagnostic manual, the DSM 5, somatic symptom disorder is defined as symptoms linked to thoughts, feelings or excessive behaviors related to health that interfere in a daily life, leading to deterioration in social and family relationships (APA, 2013). This new conceptualization is more comprehensive regarding the duration and the number of criteria required, since it requires a minimum of six-month duration and no special symptomatic combination, although the most frequent symptoms

in the population are headaches, dizziness, abdominal pain and insomnia (Cornellà i Canals, 2008, Ordoñez et al., 2015).

The American Psychiatric Association (APA) estimates that the prevalence rate of somatic symptom disorder in general adult population is around 5% to 7% (APA, 2013). In children and adolescents, studies reported prevalence rates between 2% and 10% for recurrent physical complaints. However, when it comes to isolated somatic complaints, the percentage rises to 50% (Garralda, 2010). Thus, somatic symptoms are present and prevalent in children and adults.

Somatic symptoms impact individuals and societies, and they constitute a serious public health problem. It was found that people who score high in somatic symptoms score low on the perceived health status and use more medical facilities, when compared to respondents with other problems such as high anxiety, depression or medical illnesses (Tomenson et al., 2013). People who report somatic complaints tend to utilize more primary care services (Leutgeb et al., 2018). A study conducted by Koch et al., (2009) found that 43% of general practice patients with unexplained somatic complains continued to have the same somatic complaints one year later and reported low perceived quality of life.

A prospective cohort study showed that 72% of school-aged children reported at least one somatic symptom per week and that somatic symptoms predicted high anxiety, depression, low quality of life, and school absenteeism (Saps et al., 2009). Another study discovered that children with somatic pain reported higher intensity and longer duration of pain than the children with organic pain (Cozzi et al., 2017). Children with more somatic complaints also had higher risk of problem behaviors such as substance use, early sexual activity and delinquency (Beiter et al., 1991). Thus, somatic symptoms have

serious consequences for individuals and the society as a whole, with detrimental impact on health, education and wellbeing.

4.2.1. Bullying as a risk factor for somatic symptoms

Some studies focused on risk and protective factors for somatic disorders in children and adolescents. School stressors have proven to be one of the most common environmental factors for the development and maintenance of somatic disorders (Teo et al., 2008). Bullying is a frequent long-term aggressive behavior perpetrated by some students on their peers who cannot defend themselves easily (Smith et al., 2002). Bullying is an important school stressor as it is relatively stable, it can last for several school years (Zych et al., 2020) and it can have serious short- and long-term consequences (Zych et al., 2017).

Several studies have found a relationship between being a victim of school bullying and a high prevalence of somatic symptoms. Among them, a meta-analysis conducted by Gini et al. (2014) with 17 cross-sectional and 3 longitudinal primary studies found that bullying victimization was related to headaches both concurrently and longitudinally. A review conducted by Sansone and Sansone (2008) concluded that the victims of bullying frequently show somatic symptoms such as sore throat, cold, cough, headaches, sleep problems, abdominal pain, enuresis and feeling of fatigue, among others.

Another meta-analysis focused on the relation between bullying and somatic symptoms in general included 11 primary studies and showed that both bullying victimization and perpetration were related to somatic symptoms (Gini & Pozzoli, 2009). A newer meta-analysis by Gini and Pozzoli (2013) with 6 longitudinal and 24 cross-sectional studied showed that bullying victimization was related to somatic symptoms in cross-sectional and longitudinal projects.

A prospective cohort study conducted by Fekkes et al. (2006) found that bullied children developed more somatic symptoms six months later, but children with somatic symptoms alone were not more bullied six months later. A five-year cohort study conducted by Lee and Vaillancourt (2019) showed that bullying victimization predicted somatic symptoms and that somatic symptoms also predicted victimization. Thus, research shows that bullying victimization and perpetration are risk factors for somatic symptoms, although the number of longitudinal studies focused on the relation between bullying and somatic symptoms is still low.

4.2.2. Social and emotional competencies, and empathy as protective factors against somatic symptoms

The number of studies about protective factors against somatic symptoms is still low. Some studies suggest that social and emotional competencies can act as a protective factor against somatic complaints. Among them, a cross-sectional study with adolescents conducted by Rieffe et al., (2009) found that emotional awareness was uniquely related to somatic complains. Referring to the school population, a study conducted by Ordoñez et al. (2015) found that personal maladjustment and problems with the discrimination of emotions contributed to the prediction of somatic complaints.

Several studies found that people with high alexithymia, characterized by difficulties in identifying and communicating emotions, had more health complaints than people with low alexithymia (De Gucht & Heiser, 2003; Jellesma et al., 2009). Similar findings have also been observed in the school population, where alexithymia was found to be positively associated with somatic symptoms and with an increased risk of establishing and maintaining undesirable social relationships (Cerutti et al., 2017).

Emotional competencies are defined as emotional skills applied in a prosocial way to real life situations according to the needs of each moment (Saarni, 1999). Some studies showed that a low level of emotional competence is related to poor health (Martins, Ramalho & Morin, 2010; Mavroveli et al., 2007; Nelis et al., 2011, Ysern, 2016). Social and emotional competencies were found to be a predictor of physical and mental health (Ciarrochi et al., 2003). These studies found that social and emotional competencies are related to health, but their cross-sectional designs do not make it possible to establish the temporal order between the somatic symptoms and social and emotional competencies.

Empathy was defined as a process that makes it possible to understand and share emotions of other people (Davis, 1994). Empathy can be divided in two factors (Jolliffe & Farrington, 2006) such as affective empathy (sharing emotions of other people) and cognitive empathy (understanding emotions of other people). Some studies suggest that there are different neural circuits for affective empathy and cognitive empathy (Singer, 2006).

Cognitive empathy is considered an essential prerequisite for desirable interpersonal functioning (Bailey et al., 2008). It was found that cognitive empathy acted as a modulator of vicarious pain produced by affective empathy (Lamm et al., 2007). A study conducted with caregivers of older adults found that those with high cognitive empathy considered the care situation less stressful, were less depressed, had greater perceived physical health, and reported higher life satisfaction than caregivers with low cognitive empathy (Lee et al., 2001). Thus, cognitive empathy could be related to less somatic symptoms.

Very little is known about the relation between affective empathy and somatic symptoms. De Greek et al. (2012) found that patients with somatic symptoms showed

abnormal brain activity and impairment in emotion recognition together with high scores in empathic distress defined as anxiety and discomfort when perceiving other people´s negative experience. A recent study found that greater affective empathy in college students was associated with internalizing symptoms, and that the relation could be explained by difficulties in emotional regulation (MacDonald & Price, 2019). Thus, excessive affective empathy could be related to more somatic symptoms, but new studies are needed to confirm this.

4.2.3. The current study

Somatic symptoms are present and prevalent in different age groups, and they have a negative personal, economic and social impact. Although research focused on somatic symptoms has been fruitful, there are still pressing gaps in knowledge related to longitudinal risk and protective factors. Several studies found relations among social and emotional competencies, empathy and bullying with the presence of somatic symptomatology. However, most of these studies were cross-sectional and their results are inconclusive.

Although bullying is a known risk factor, social and emotional competencies are less studied and there are very few studies focused on empathy and somatic symptoms. Thus, the current study focuses on the relations among social and emotional competencies, empathy, bullying and somatic symptoms, analyzing direct and unique relations between somatic symptoms and these risk and protective factors. Moreover, these relations are studied cross-sectionally and longitudinally, one year later.

Based on the literature review, we expect to find that high scores in social and emotional competencies predict low scores in somatic symptoms (hypothesis 1). Similarly, it is expected to find that high cognitive empathy and low affective empathy

predict low scores in somatic symptoms (hypothesis 2). Bullying victimization and perpetration are expected to predict high somatic symptoms (hypothesis 3). These relations are expected to be found cross-sectionally and one year later.

4.3. Method

4.3.1. Participants

Questionnaires were distributed at two waves to a sample of 384 students from schools in Andalusia (Spain). The first wave of data (T1) was collected at the end of 2016/2017 school year. In T1, 51.2% of the participants were girls and 48.6% of the participants were boys aged between 11 and 17 years (M = 12.94, SD = 1.41). Participants were enrolled in the last year of primary education (30.1%) and in Grades 1, 2 and 3 of the Secondary Education (69.9%). The second wave of data (T2) was collected at the end of 2017/2018 school year. In T2, participants were aged 12 and 18 years (M = 13.94, SD = 1.42). They were enrolled in Grades 1, 2, 3, and 4 of secondary education.

The initial sample in T1 included 698 participants (attrition rate of 44.99%), but given that the questionnaires were anonymous, T1 and T2 were matched through codes that were not always legible. Moreover, many students changed schools and not all the students were present during the second wave (e.g., two groups of students were on a school trip, many students were dismissed in their final days of Grade 4 of secondary education, several air conditioning machines were broken and students were dismissed during a heat wave, some students were absent for unknown reasons). In general, no specific reasons for attrition were identified besides the expected difficulties in following-up students in an anonymous survey during two school years. Little´s MCAR test including the study variables showed evidence that data were missing completely at random ($\chi^2_{(1258)}$ = 1270.54, p = .397). Also, Student´s t-test comparing scores in T1

variables between the participants who remained in the study and those who dropped out showed that differences between these two groups were not significant.

4.3.2. Measures

Social and Emotional Competencies Questionnaire (SEC-Q; Zych et al., 2018) contains 16 items divided in 4 subscales: Self-awareness with 4 items (e.g., "I know how to label my emotions"; T1 α = .62, T2 α =.72); Self-management and motivation with 3 items (e.g., "I know how to motivate myself"; T1 α = .59, T2 α =.62); Social-awareness and prosocial behavior with 6 items (e.g., "I have good relationships with my classmates"; T1 α = .60, T2 α =.73), and Responsible decision-making with 3 items (e.g., "I make decisions analyzing carefully possible consequences"; T1 α = .71, T2 α =.74). The questionnaire was answered on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). This questionnaire showed a very good Cronbach's alpha value with the current sample (T1 α = .78, T2 α =.83).

The Basic Empathy Scale (Jolliffe & Farrington, 2006) is probably the most widely used empathy scale worldwide. It is composed of two factors: Affective Empathy (9 items, e.g., feeling sad after being with a friend who was sad) and Cognitive Empathy (11 items, e.g., understanding friend´s happiness). The scale consists of 20 items in total with a 5-point Likert response scale ranging from 1 = (totally disagree), to 5 = (totally agree), with good Cronbach´s alphas (Cognitive Empathy T1 α = .70, T2 α = .74; Affective Empathy T1 α = .74, T2 α = .76).

The European Bullying Intervention Project Questionnaire (Ortega-Ruiz et al., 2016) is a measure of face-to-face bullying (e.g., hitting, threatening, destroying things, insulting, rumor spreading, and social exclusion) with 7 items focused on victimization and 7 items focused on perpetration. The items were answered on a 5-point Likert scale

ranging from 0 (never) to 4 (more than once a week). Students were asked to respond about the past school year behaviors. The questionnaire showed good Cronbach's alpha values (victimization T1 $\alpha = .84$, T2 $\alpha = .86$, perpetration T1 $\alpha = .73$, T2 $\alpha = .82$).

Derogatis Symptom Checklist Revised (Derogatis, 2010) is one of the most frequently used instruments to assess different psychopathological symptoms. For this study, the somatization scale was used. This scale is composed of 12 items with a 5-point Likert response scale, ranging from 0 (nothing) to 4 (much). Items focus on different corporal dysfunctions (cardiovascular, respiratory, gastrointestinal) and physical pain (headache, lumbago, muscular). This scale showed a good Cronbach's alpha value ($\alpha = .81$).

4.3.3. Design and procedure

The current study is a part of a longitudinal project with two waves of data. The first wave was collected in in June 2017 (T1) and the second wave was collected in June 2018 (T2). Predictors were measured at T1 and T2, and somatization was measured at T2.

Schools were selected by convenience sampling. Head teachers were contacted and the objectives of the study were explained. Participation in the study was approved by each school board and parental consents were obtained. The study was authorized by the Ethics Committee of the University of Cordoba and followed all the national and international ethical standards.

Participants were previously informed that the study was anonymous, and confidential and that the participation was voluntary. Participants´ assents were obtained. Questionnaires were administered as a pen-and-pencil survey during the regular classroom hours collected and supervised by the researchers. They were completed in

around 45 minutes. The teachers did not have access to the individual questionnaires or data of the students.

4.3.4. Data analysis

Data analyses were carried out using the PASW IBM 24 software. First, descriptive analyses were conducted. Means and standard deviations were calculated and the Student's t-test was used to compare boys and girls in both waves (T1 and T2).

Relations between somatization and other variables (i.e., bullying perpetration and victimization, empathy and social and emotional competencies) were tested with Pearson correlations. Linear regression analyses were carried out to test if the study variables were uniquely related to somatization. Correlations and regression analyses were performed cross-sectionally and longitudinally.

4.4. Results

Table 1 shows descriptive statistics for all the variables included at both waves of this study for the total sample, males, and females. Females scored higher than males in *Cognitive empathy* at both waves (T1 d = .40, 95% CI =.18 - .62; T2 d = .44, 95%CI =.24 - 65) and *Affective empathy* at both waves (T1 d = .62, 95%CI = .40 - .83; T2 d = .77, 95%CI =.55 - 98). *Bullying perpetration* was significantly higher in males at both waves (T1 d = -.79, 95% CI= -1.00 - -.58; T2 d = -.32, 95%CI = -.52 - -.11).

Self-awareness was higher in males than females at T2 only (d = -.50, 95%CI = -.71 - -.29). *Social-awareness and prosocial behavior* was higher in females at T1 only (d = .33 95%CI = .13 - .54). *Somatization* was only measured at T2 and it was significantly higher in females (d = .49, 95%CI = .29 - .70).

Table 1. Means, standard deviations and gender comparisons in the study variables in Time 1 and Time 2.

	Time 1					*Time 2*				
	Girls M (SD)	*Boys M (SD)*	*Total M (SD)*	*t*	*d* (95% CI)	*Girls M (SD)*	*Boys M (SD)*	*Total M (SD)*	*t*	*d* (95% CI)
Self-awareness	16.31 (2.26)	16.36 (2.49)	16.32 (2.37)	-.23	-.02 (-.22, .18)	15.82 (2.72)	16.45 (2.48)	16.12 (2.62)	-2.32*	-.50 (-.71, -.29)
Self-motivation and self-management	12.32 (2.13)	12.36 (2.06)	12.34 (2.09)	-1.66	-.02 (-.22, .18)	11.85 (2.43)	12.22 (2.21)	12.03 (2.33)	-1.56	-.16 (-.36, .04)
Social awareness and prosocial behavior	24.47 (3.05)	23.65 (3.16)	24.10 (3.11)	2.48*	.33 (.13, .54)	23.90 (3.85)	23.48 (3.20)	23.70 (3.55)	1.13	.11 (-.09, .32)
Responsible decision making	10.37 (2.61)	10.59 (2.80)	10.47 (2.70)	-.78	-.08 (-.29, .12)	10.57 (2.64)	10.77 (2.57)	10.67 (2.61)	-,74	-.08 (-.28, .13)
Total social and emotional competencies	63.72 (6.88)	63.07 (8.03)	63.41 (7.45)	.80	.09 (-.13, .30)	62.04 (8.97)	63.31 (7.33)	62.64 (8.23)	-1.45	-.15 (-.36, .06)
Affective empathy	40.99 (6.72)	33.56 (7.46)	38.89 (7.42)	5.83**	.62 (.40, .83)	41.30 (7.09)	36.37 (6.66)	38.89 (7.30)	6.78**	.77 (55, .98)
Cognitive empathy	37.17 (5.22)	36.03 (5.32)	36.62 (5.28)	2.00*	.40 (18, .62)	37.32 (4.94)	35.47 (5.56)	36.41 (5.30)	3.36**	.44 (.24, .65)
Total empathy	78.52 (10.22)	72.84 (10.93)	75.83 (10.93)	4.78**	.54 (.31, .76)	78.82 (10.69)	71.88 (10.46)	75.47 (11.12)	6.09**	.66 (.44, .87)
Bullying victimization	11.70 (5.17)	12.36 (5.62)	12.02 (5.40)	-1.18	-.12 (-.32, .08)	11.15 (4.51)	11.82 (5.68)	11.48 (5.12)	-1.26	-.13 (-.33, .07)
Bullying perpetration	8.76 (2.22)	10.17 (3.76)	9.45 (3.15)	-4.38**	-.79 (-1.0, -.58)	9.01 (2.92)	10.40 (4.43)	9.67 (3.76)	-3.57**	-.32 (-.52, -.11)
Somatization						14.41 (9.44)	10.47 7.85)	12.51 (8.89)	4.45**	.49 (.29, .70)

**p* < .05, ** *p* < .01

Table 2 shows Pearson correlation coefficients between the predictors and somatization. These correlations are shown for the cross-sectional relations and for the relations between the predictors and somatization one year later. Most of the correlations are in the expected direction. High level of *Social and emotional competencies* was related to low *Somatization* cross-sectionally (r = -.21, p <.01) and one year later (r = -.11, p <.05). *Cognitive empathy* was not found to be related to *Somatization* whereas high *Affective empathy* was related to high *Somatization* cross-sectionally (r = .16, p <.01) and one year later (r = .13, p <.05). *Bullying victimization* was related to high *Somatization*

cross-sectionally (r = .20, p <.01) and one year later (r = .16, p <.01). *Bullying perpetration* was related to high *Somatization* cross-sectionally (r = .11, p <.05).

Table 2. Cross-sectional and longitudinal correlations between Social and Emotional Competencies, Empathy, Bullying and Somatization.

	Cross-sectional correlations with somatization *r*	*Longitudinal correlations with somatization one year later* *r*
Self-awareness	-.18**	-.13*
Self-management and motivation	-.23**	-.11*
Social awareness and prosocial behaviour	-.11*	.01
Responsible decision-making	-.10*	-.15**
Total score in social and emotional competencies	-.21**	-.11*
Affective empathy	.16**	.13*
Cognitive empathy	.03	-.01
Bullying perpetration	.11*	.09
Bullying victimization	.20**	.16**

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

Table 3 shows the results of linear regression analyses with *Social and emotional competencies, Empathy and Bullying* as cross-sectional and longitudinal predictors of *Somatization*. The regression models were statistically significant in the cross-sectional analysis ($F_{(10)}$= 6.61; p < 0.01; $R^2 = .16$) and in the longitudinal analysis ($F_{(10)}$= 5.21; p < 0.01; $R^2 = .14$).

Regression analyses showed that being a female was related to more *Somatization* both cross-sectionally (β = .18, p <.01) and longitudinally (β = .19, p <.01). Being *older* was related to more *Somatization* cross-sectionally (β = .17, p <.01) and longitudinally (β = .18, p <.01).

A low score in *Responsible Decision-making* (β = -.15, p <.05) and *Self-awareness* (β = -.14, p <.05) were predictors of *Somatization* one year later. Scoring high on *Affective Empathy* was related to more *Somatization* cross-sectionally (β = .20, p <.01) and one year later (β = .16, p <.05). High *Bullying victimization* was also a predictor of *Somatization* cross-sectionally (β = .12, p <.05) and one year later (β = .15, p <.05).

Table 3. Linear regression analyses with gender, age, Social and Emotional Competencies, Empathy and Bullying as cross-sectional and longitudinal predictors of Somatization.

	Cross-sectional relation with somatization		*Longitudinal relation with somatization one year later*	
	β	t	β	t
Male gender	-.18**	-3.05	-.19**	-3.12
Age	.17**	3.06	.18**	3.10
Self-awareness	-.14*	-2.10	-.12	-1.74
Self-motivation and self-management	-.12	-1.85	.02	.35
Social awareness and prosocial behavior	-.00	-.02	.13	1.77
Responsible decision making	-.01	-.08	-.15*	-2.18
Affective empathy	.20**	2.93	.16*	2.35
Cognitive empathy	-.07	-1.02	-.10	-1.47
Bullying victimization	.12*	1.90	.15*	2.11
Bullying perpetration	.11	1.68	.00	.04

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

4.5. Discussion and Conclusions

The objective of this study was to describe the relation between social and emotional competencies, empathy and bullying with somatic symptoms in adolescents. This was done cross-sectionally and longitudinally. High scores in self-awareness, self-motivation and self-management, social awareness and prosocial behavior, and responsible decision making were found to be related to a lower score in somatization

cross-sectionally and one year later. Regression analyses showed that low self-awareness and low responsible decision making were uniquely related to high somatic symptoms.

Previous studies found that social and emotional competencies were protective against different problem behaviors. For example, Larsson and Frisk (1999) found that a high score in social competence was related to a lower prevalence of internalizing symptoms. Emotional intelligence was found to be related to a lower risk of suicide (Quintana-Orts et al., 2019) and social and emotional learning programs reduced different problem behaviors in schools (Divecha & Brackett, 2019). Thus, it is possible that programs that promote social and emotional competencies, especially self-awareness and responsible decision making could be a promising approach for reducing somatic symptoms in adolescents.

This study also aimed at understanding the relation between empathy and somatization. It was found that scoring high in affective empathy was related to high scores in somatization cross-sectionally and one year later. Previous findings related to empathy and somatic symptoms were contradictory. A study conducted with functional magnetic resonance found that emotional empathy facilitates the somatic representation of other people's mental states, and as a result, reflects more vigorously the observed physical and mental states (Nummenmaa et al., 2008). It is possible that excessive affective empathy acts as a risk factor (MacDonald & Price, 2019) and cognitive empathy as a protective or modulating factor (Lamm et al., 2007; Lee, Brennan & Daly, 2001) for somatic symptoms. The current study did not find a significant relation between cognitive empathy and somatic symptoms. In general, more studies are needed to clarify the relation between empathy and somatization.

The current project also focused on bullying perpetration and victimization as possible risk factors for somatization. The results showed that students who scored high in somatization scored high in bullying victimization cross-sectionally and longitudinally. Bullying perpetration was only related to somatization cross-sectionally and this relation was not significant after including the covariates in the regression analyses. Several previous studies found the relation between bullying and somatic symptoms (Gini et al., 2014). It was also found that victimization was related to poor health in victims, which improved after bullying ceased (Lovell & Lee, 2011).

It was found that female gender and an older age predicted somatization, both longitudinally and transversally. Girls also scored higher in cognitive and affective empathy. Results of this study could support hypotheses that suggest that high affective empathy is linked to high somatic symptoms through low scores in socioemotional competencies (De Greek et al., 2012; MacDonald & Price, 2019). In the current study, boys scored higher than girls in self-awareness, a dimension of socioemotional competencies questionnaire. Possibly, somatic symptoms could decrease in girls increasing self-awareness, however, more studies are needed to prove it.

Various studies found that victims of bullying have a high level of affective empathy compared to non-victims (Zych et al., 2019a; Zych et al., 2019b). The current study found that victims of bullying and adolescents with high affective empathy score high in somatization. It is possible that victimized children become excessively empathetic and share other people´s emotions to the extent in which they themselves develop somatic symptoms. Thus, dynamic relations among these variables should be studied in future.

This study has important strengths such as an analysis of several risk and protective factors using a cross-sectional and longitudinal research design. Nevertheless, it also has some limitations. Some of these limitations are related to the use of self-reports, although the study was anonymous and participants filled in the questionnaires individually in a silent environment, response bias is possible. The longitudinal design is an important strength of this study, but there is around 40% of attrition. There was no specific reason for attrition (e.g., participants changing schools, participants on school trip, heat wave, anonymous code was not always legible), and it is unlikely for the results to be affected by not retaining a higher number of participants. Nevertheless, it would have been desirable to retain more participants.

In this study, linear relations were analyzed and it would be interesting to study if there are other types of relations among the studied variables including some more dynamic interactions or non-linear relations. Longitudinal and cross-sectional relations between predictors and somatization were studied, but it was not possible to analyze the relation between change in predictors and change in somatization. Future projects with bigger representative samples could be conducted to confirm the results of the current study.

This study has some implications for policy and practice. It was found that social and emotional competencies are protective factors against somatic symptoms which justifies even further the need for social and emotional learning programs in schools. Bullying victimization is a risk factor for somatic symptoms and thus, more anti-bullying programs should be conducted. Evidence showed that this can be done through the whole-school anti-bullying and anti-cyberbullying interventions that were found to be effective in reducing school bullying and cyberbullying (Chan & Wong, 2015; Gaffney et al.,

2019a; Gaffney et al., 2019b). Tailored interventions that take into account victimized children with high affective empathy could be especially important.

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Capítulo 5. Estudio 3. Antisocial behavior as a longitudinal predictor of somatization in adolescent

Espejo-Siles, R., Farrington, D. P., Zych, I., & Llorent, V. J. (2022). Antisocial Behavior as a Longitudinal Predictor of Somatization in Adolescents. *Victims & Offenders*. Online first.

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5.1. Abstract

Antisocial behavior and somatization are common problems in schools that have several consequences. However, the relation among these problems is not clear. This longitudinal research aims to better understand whether antisocial behavior is related to and predicts somatization, in order to prevent and reduce both disorders in young people. A longitudinal study with a one-year follow-up was carried out with students from several schools in Spain (N = 384). Validated questionnaires were used to assess antisocial behavior and somatization. Descriptive, correlational and linear regression analyses were performed. Most of the antisocial behaviors had significant correlations with somatization in both waves of the study. High scores in theft, violence and substance use were related to high scores in somatization cross-sectionally and one year later, in boys and girls. Female gender, high scores in violence and high scores in status offenses were related concurrently to more somatic symptoms. Female gender, high scores in violence and high scores in substance use predicted more somatic symptoms one year later. Antisocial behavior was found to be highly related to somatization. Early substance use prevention programs and programs to decrease violence at school could help reduce substance use, violence and somatization in students.

Keywords Antisocial behavior; somatization; adolescents; violence; longitudinal study

5.2. Introduction

Somatization has traditionally been considered the somatic manifestation of psychological distress (Bridges & Goldberg, 1985). Nowadays, following DSM 5 (APA, 2013, p. 311), somatization is defined as somatic symptom disorder, which is composed of significant somatic complaints accompanied by excessive and disproportionate health-related thoughts, feelings, and behaviors regarding these complaints. These symptoms cannot be fully explained medically and usually have a chronic course (Heinrich, 2004).

Somatic complaints are a frequent problem at school age. Sixty percent of students reported pain in the last three months (Haraldstad et al., 2011). Patients with somatic complaints use twice the medical resources as the general population (Barsky et al., 2005), causing a high economic and social cost. People who report more somatic symptoms tend to have lower levels of life satisfaction (Noyes et al., 1995) and these symptoms are associated with a higher suicide risk (Fang et al., 2019). Attending to these complaints is important since somatic complaints could predict poor mental health in early adulthood (Kinnunen et al., 2010).

Even though somatic complaints are a prevalent and influential problem, it is not clear how the problem begins. The causes of somatization are miscellaneous and cannot be explained by just one variable (Kellner, 1990). Somatization has been related to exposure to traumatic events (Elklit & Christiansen, 2009), sexual abuse (Bonvanie et al., 2015) or being bullied (Espejo-Siles et al., 2020). Somatic symptoms could also be a learned behavior performed to get attention (Silber, 2011).

It was found that disruptive behavior was related to somatization (Scharf et al., 2016). Previous research suggested that offending led to poor health, rather than the reverse (Farrington, 1995). Furthermore, behavior problems in childhood were related to

the presence of different problems on the long-term, such as depression or anxiety (Loeber, & Burke, 2011).

5.2.1. Antisocial behavior and somatization

Antisocial behavior is a pattern of behaviors that involve the violation of people´s rights in different ways. It includes damage, theft, violence, substance use and status offenses (Loeber et al., 1989) and it is considered an issue worldwide, having consequences for offenders and victims (Hemphill et al., 2014). At school, antisocial behavior has been related to academic failure (McEvoy & Welker, 2000) Similarly, for somatizers, academic performance and peer relationships are less satisfactory, and this could lead to long-term unemployment and psychopathology (Karkhanis & Winsler, 2016). Thus, antisocial behavior and somatization could be frequent at school ages and they can have several consequences. As several consequences can be derived from these behaviors, research on the prevention of antisocial behavior and somatization is especially needed in young people to avoid short- and long-term consequences.

Several researchers have found that antisocial personality disorder has a high comorbidity with somatization (Bornstein & Gold, 2008). In adults diagnosed with antisocial personality disorder, 25% of men and 8.2% of women were also diagnosed as somatizers (Smith et al., 1991). Somatic symptoms were twice as frequent in detained girls as in boys (Cauffman et al, 2007). A study found that somatic symptoms were a common pathology among first offenders and recidivist teenagers, and this could be due to the expression of internal rage (Tille & Rose, 2007).

Other factors have been associated with both somatization and antisocial behavior. Individuals with high antisocial behavior tend to experience a high rate of negative affect, which is a tendency to perceive oneself and the world negatively. This could increase the

degree of emotional distress from exposure to stressful events and it could increase somatization (Wilson et al., 1999). Negative affect was found to be related to somatic complaints, but not to objective health (Watson & Pennebaker, 1989) and was a stronger predictor of somatization for men than for women. Impulsivity was another variable related to both problems (Castro et al., 2012).

Frick et al. (1995) found a shared predisposition to behavioral disinhibition and sensation seeking for somatization and antisocial behavior. Alexithymia –which means "no words for feelings"- has been highly associated with somatization, and alexithymia has been associated with antisocial behavior (Manninen et al., 2011). Moreover, both disorders appear together in relatives more than expected by chance, and this suggests that both problems could have a common genetic etiology (Lilienfeld, 1992). It was found that girls who were adopted and had biological parents with antisocial behavior problems were more likely to have more somatic symptoms (Cadoret et al., 1976). A recent systematic review showed that somatization and antisocial behavior had biological similarities such as low serotonin levels (Espiridion & Kerbel, 2020), Nevertheless, somatization tends to be more frequent in women, while antisocial behavior is more frequent in men. Both are more frequent in the lower socioeconomic categories, begin early in life, have a chronic course, and are associated with suicidal behavior (Cloninger, 1978).

Studies that explicitly focus on the relation between antisocial behavior and somatization are still needed as most of them are cross-sectional and cannot establish the ordering of somatic complaints and antisocial behavior. However, previous findings point out that antisocial behavior could appear first and lead to somatization (Espejo-Siles et al., 2020; Yang, 2020).

5.2.2. The current study

Somatization and antisocial behavior are frequent problems in schools and in the society. Studies relating antisocial behavior to somatization are rare and most of them are cross-sectional, making it difficult to know about the direction of the relationship. Despite this, there are findings which suggest that antisocial behavior could be a predictor of somatization instead of the reverse. Thus, the aim of this study is to investigate the relationship between the five factors on the self-reported antisocial behavior questionnaire (Loeber et al., 1989) and somatization using a longitudinal study with a one-year follow-up. We expect to find that different antisocial behaviors predict greater somatization, and we hope that this research contributes to the efforts to decrease both problems in the school population.

5.3. Method

5.3.1. Participants

The sample was selected by convenience and it was composed in both waves of 384 students from eight schools in Cordoba and Seville (Spain), including cities and towns. At time 1, students were enrolled in 6 grade of Primary Education or grades 1 to 3 of Secondary Compulsory Education and, at time 2, they were enrolled in Secondary grades 1 to 4. In the first wave of data collection (T1), 51.2% of the participants were girls and 48.6% of the participants were boys aged between 11 and 17 years (M = 12.94, SD = 1.41). In the second wave of data collection (T2), participants were aged between 12 and 18 years (M = 13.94, SD = 1.42).

The sample in T1 included 698 participants. The attrition rate between T1 and T2 was 45%. Some specific reasons for attrition were identified (e.g., some students were dismissed because they went for a school trip, questionnaires were completed in the last

days of term and some students were absent, some identification codes were impossible to match, there was a heat wave and students were dismissed). A Student´s t-test was carried out to compare the participants who remained in the study and those who dropped out on T1 variables. The comparisons showed that differences between these two groups were not significant in Total Antisocial behaviors (t = -1.40; p = .17), Theft (t = -1.41; p = .18), Damage behavior (t = -1.20; p = .28), Violence (t = -.14; p = .89), Substance use (t = -.65; p = .52) and Status offenses (t = -1.98; p = .05). Difficulties were expected in following-up students in an anonymous survey during two school years.

5.3.2. Measures

Derogatis Symptom Checklist Revised (Derogatis & Unger, 2010) is used to assess different psychopathological symptoms. The somatization scale was selected for this study. This scale is composed of 12 items with a 5-point Likert response scale, ranged from 0 (nothing) to 4 (much). Items are focused on different bodily dysfunctions (e.g., headaches, chest pains, lumbago). The scale had a good Cronbach´s alpha (α = .81).

Self-Reported Antisocial Behavior Questionnaire (Loeber et al.,1989). This is a well-known antisocial behavior questionnaire which included 32 questions referring to behaviors that have been carried out in the last 6 months, responded on a 4-point Likert scale ranging from 1 (Never) to 4 (more than 3 times). The questionnaire has a five-factor structure: *Damage behavior* with 5 items (e.g., “Have you on purpose broken or damaged or destroyed something belonging to a school?” T1 α = .65; T2 α= .58) *Theft* with 9 items, (e.g., “Have you taken something from a store without paying for it?” T1 α= .72; T2 α= .73), *Violence* with 7 items (e.g., “Have you hit other kids or gotten into a physical fight with them?” T1 α= .59; T2 α= .60), *Status offenses* with 5 items (e.g., “Have you cheated on a school test” T1 α= .55; T2 α= .57) and *Substance use* with 6 items (e.g., “Have you

smoked marijuana?" T1 α= .76; T2 α= .79). This questionnaire showed a very good total alpha value in the current sample (T1 α = .81, T2 α =.78).

5.3.3. Design and procedure

This is a longitudinal study with two waves of data. Data from the first wave (T1) were collected in June 2017 and data from the second wave (T2) were collected in June 2018. Antisocial behavior was measured in both waves, T1 and T2, while somatization was measured in T2.

Schools were selected by convenience sampling. Head teachers were contacted, and the objectives of the study were explained. After obtaining parental consents, participants were previously informed that the study was anonymous and confidential, and that the participation was voluntary. Questionnaires were administered as a paper-and-pencil survey in a quiet environment during the regular classroom hours and were completed in around 45 minutes. Researchers collected the survey and supervised the process. The teachers did not have access to the individual questionnaires or data of the students. The study was authorized by the Ethics Committee of the University of Cordoba and followed all the national and international ethical standards.

5.3.4. Data analysis

Data analyses were carried out using the PASW IBM 24 software. Descriptive analyses were conducted. Means and standard deviations were calculated, and Student's t-test was used to compare boys and girls in T1 and T2, and the participants who remained in the study with those who dropped out. Pearson correlations were performed to explore relations between somatization and the factors of the antisocial behavior questionnaire in boys and girls. Linear regression analyses were carried out to test if the factors of the antisocial behavior questionnaire and control variables (gender and age) were uniquely

related to somatization. Correlations and regression analyses were tested cross-sectionally and longitudinally. Cohen´s d was calculated using the Campbell Collaboration Effect Size Calculator to discover the size of each significant effect.

5.4. Results

Gender comparisons for all the study variables and waves are shown in descriptive statistics in Table 1. The *Damage* score was higher in males than females in both waves (T1 *d* = -.23, 95% CI = -.38 - -.10; T2 *d* = -.22, 95% CI = -.38 - -.10). Males also scored higher in *Violence* in both waves (T1 *d* = -.41, 95% CI = -.55 - -.27; T2 *d* = -.29, 95% CI = -.43 - -.15). Males scored higher in *Total antisocial behavior* at T1 (*d* = -.21, 95% CI = -.35 - -.07). *Somatization* was higher for females at T2 (*d* = .45, 95% CI = .31 - .60).

Table 1. Means, standard deviations and gender comparisons in Time 1 and Time 2.

	Time 1				*Time 2*			
	Females M(SD)	*Males M (SD)*	*t*	*d* (95% CI)	*Females M (SD)*	*Males M (SD)*	*t*	*d* (95% CI)
Damage	5.55 (1.27)	5.92 (1.74)	-2.31*	-.23 (-.38, -.10)	5.61 (1.33)	5.97 (1.65)	-2.28*	-.22 (-.38, -.10)
Theft	10.64 (2.43)	10.70 (3.00)	-.19	-.02 (-.16, .12)	10.71 (2.88)	10.98 (3.00)	-.87	-.09 (-.23, .05)
Violence	8.57 (2.08)	9.62 (2.92)	-3.91**	-.41 (-.55, -.27)	8.54 (2.12)	9.25 (2.76)	-2.79*	-.29 (-.43, -.15)
Substance use	7.41 (2.77)	7.62 (2.74)	-.72	-.08 (-.22, .07)	8.41 (3.61)	8.46 (3.60)	-.13	-.01 (-.16, .13)
Status offenses	6.70 (2.02)	6.54 (2.16)	.75	.08 (-.07, .22)	7.04 (2.10)	7.21 (2.58)	-.71	-.07 (-.21, .07)
Total antisocial	38.34 (7.67)	40.18 (9.71)	-1.91*	-.21 (-.35, -.07)	40.08 (8.92)	41.27 (10.36)	-1.14	-.12 (-.26, .02)
Somatization					14.41 (9.44)	10.48 (7.83)	4.44**	.45 (.31, .60)

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

Table 2 shows the cross-sectional and longitudinal correlations between factors of the antisocial behavior questionnaire and somatization in boys. Cross-sectional correlations showed that higher scores on any antisocial behavior were related to higher somatization. This was true for *Damage* ($r = .26$, $p < .01$), *Theft* ($r = .19$, $p < .01$), *Violence* ($r = .30$, $p < .01$), *Substance use* ($r = .21$, $p < .01$), *Status offenses* ($r = .28$, $p < .01$) and the *Total score in antisocial behavior* ($r = .29$, $p < .01$). Longitudinal correlations showed that higher scores on *Damage* ($r = .16$, $p < .05$), *Theft* ($r = .15$, $p < .05$), *Violence* ($r = .23$, $p < .01$), *Substance use* ($r = .28$, $p < .01$), and the *Total score in antisocial behavior* ($r = .30$, $p < .01$) were related to higher *Somatization* one year later.

Table 2 also shows the cross-sectional and longitudinal correlations between factors of the antisocial behavior questionnaire and somatization in girls. Cross-sectional correlations showed that higher scores on *Theft* ($r = .14$, $p < .05$), *Violence* ($r = .17$, $p < .05$), *Substance use* ($r = .31$, $p < .01$), *Status offenses* ($r = .29$, $p < .01$) and the *Total score in antisocial behavior* ($r = .30$, $p < .01$) were related to higher somatization. Longitudinal correlations showed that higher scores on *Violence* ($r = .18$, $p < .05$), *Substance use* ($r = .26$, $p < .01$), *Status offenses* ($r = .22$, $p < .01$) and the *Total score in antisocial behavior* ($r = .26$, $p < .01$) were related to higher *Somatization* one year later.

Table 2. Cross-sectional and longitudinal correlations between Damage, Theft, Violence, Substance use, Status offenses and Somatization in boys and girls.

	Cross-sectional correlations with somatization *r*		*Longitudinal correlations with somatization one year later* *r*	
	Boys	*Girls*	*Boys*	*Girls*
Damage	.26**	.10	.16*	.05
Theft	.19**	.14*	.15*	.11
Violence	.30**	.17*	.23**	.18*
Substance use	.21**	.31**	.28**	.26**
Status offenses	.28**	.29**	.07	.22**
Total score Antisocial behavior	.29**	.30**	.30**	.26**

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

Linear regression analyses with gender, age and different antisocial behaviors are shown in Table 3. The cross-sectional analysis showed that *Female gender* (β = .24, p < .01), *Violence* (β = .16, p < .05) and *Status offenses* (β = .15, p < .05) were uniquely related to *Somatization*. The longitudinal analysis showed that *Female gender* (β = .29, p < .01), being *older* (β = .12, p < .05), *Violence* (β = .25, p < .01) and *Substance use* (β = .21, p < .01) were predictors of *Somatization* one year later. The regression models were statistically significant in the cross-sectional analysis ($F_{(7)}$= 7.77; p < .01; $R^2 = .14$) and in the longitudinal analysis ($F_{(7)}$= 9.28; p < .01; $R^2 = .17$).

Table 3. Linear regression analyses with Gender, Age, Damage, Theft, Violence, Substance use and Status offenses as cross-sectional and longitudinal predictors of Somatization.

	Cross-sectional relation with somatization		*Longitudinal relation with somatization one year later*	
	β	*p*	*β*	*p*
Male Gender	-.24**	.001	-.29**	.001
Age	.05	.387	.12*	.038
Damage	.01	.948	-.07	.339
Theft	-.07	.329	-.04	.562
Violence	.16*	.028	.25**	.001
Substance use	.11	.088	.21**	.002
Status offenses	.15*	.036	-.02	.799

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

5.5. Discussion and Conclusions

The purpose of this longitudinal study was to explore the relationship between different antisocial behaviors and somatization. This advances knowledge on both problems and can be useful to decrease them in the school population. We expected to find that some antisocial behaviors were related to and could predict somatization. Results supported the initial hypotheses. Most of the antisocial behaviors had significant correlations with somatization in both waves of the study. High scores in theft, violence and substance use were related to high scores in somatization cross-sectionally and one year later in boys and girls. High scores in damage were related to high scores in somatization cross-sectionally and one year in boys, but not in girls. High scores in status offenses were related to high scores in somatization cross-sectionally in boys but also one year later in girls. Findings of this research are consistent with hypotheses that suggest that somatization and antisocial behavior are related, and it is possible that some factors could influence both problems (Castro et al., 2012).

Violence was the strongest predictor of somatization, and it was more frequent in males. Despite this fact, female gender was found to be a predictor of somatization. This finding is consistent with the existing literature, where females usually have a higher level of somatization than males (Ladwig et al., 2001). It is possible that factors other than antisocial behavior led to somatization in females, such as depression or anxiety, or that cultural patterns could mean that males with somatic complaints do not seek medical advice as much as females (Kroenke & Spitzer, 1998). Results of this study showed that female offenders had more risk of somatization than males, supporting previous studies (Cauffman et al., 2007), and this highlights the necessity of interventions in both problems that could include gender as an important variable.

The association between violence and somatization has usually been studied for violence exposure rather than perpetration. Previous research established a strong relationship between violence exposure and the suffering of somatization (Hart et al., 2013). However, little is known about the relation between violent behavior and somatization. The present study revealed that violent behavior was more frequent in boys and that it was a predictor of somatization in both waves. In fact, violence was the factor of the antisocial behavior questionnaire that was especially and uniquely related to somatization. Garofalo et al. (2018) found a high level of difficulties in identifying feelings in aggressive offenders. Difficulties in identifying feelings have been associated with increased negative affect, which could increase somatic symptoms (Bailey & Henry, 2007). The fact that negative affect could lead to poor health has been described by Salovey (2000). It is possible that negative emotions derived from violent behaviors could lead to the suffering of somatization (Musaph, 1974).

Substance use was related in both waves to somatization and it was a predictor of somatization. Martin et al. (1982) found that, in women offenders, somatic symptoms and

substance abuse were highly prevalent with active criminality. At follow-up, somatic symptoms and substance abuse were still prevalent even after criminality had decreased. A review conducted by Hassan and Ali (2011) suggested that the presence of somatic symptoms in substance users might represent an underlying primary anxiety disorder. A longitudinal study indicated that substance use had more somatic consequences for girls than boys (Gårdvik et al., 2021). These findings pointed out the comorbidity and the chronic course of substance use and somatization and the necessity of intervention.

Previous research had not found any relationship between somatization and status offenses (Benner et al., 2010). However, in this study, it was found that status offenses correlate with and were uniquely related to somatization, especially in girls. It is possible that status offenses in girls are related to problems in romantic or familial relationships, including behaviors such as running away from aversive home environments, and that kind of behaviors could underlie traumatic and stressful experiences (McGill & Stefurak, 2021). Therefore, it is possible that the relation between somatization and status offenses in girls could be related to anxiety and trauma (Elklit & Christiansen, 2009). There is not enough literature on this topic, and future studies are needed to better understand the relation between status offenses and somatization.

This study has some limitations. Although questionnaires were completed in a quiet and private environment, response bias is possible. Longitudinal analyses were carried out, but only linear relations were explored. Somatization was measured only in the second wave, and therefore, it was not possible to analyze the relation between correlates and somatization in the first wave. The final sample was smaller than the initial one. Furthermore, there is not much literature about somatization and antisocial behavior, making it difficult to draw conclusions. Future research with a larger sample is needed to replicate these results.

Implications for policy and practice can be derived from this study. Somatization is a frequent problem at school age. Antisocial behavior is a problem with serious consequences for students. In this research, antisocial behavior was found to be related to somatization, suggesting that some common variables might be related to both disorders. The current study has a longitudinal design which could establish which of the antisocial factors were the most important in predicting somatization. Substance use predicted somatization a year later. Thus, early substance use prevention programs could help to reduce both problems in students.

Results showed that violent behavior is a predictor of somatization. Therefore, programs to decrease violence at school could have an effect on reducing somatization, especially in female offenders, the group which has the higher risk of somatization. Furthermore, the expression of somatization could underlie other behaviors that may not be perceived by teachers if happens outside of school. Therefore, somatic symptoms at school should be considered as a warning signal. Previous research found that the promotion of socioemotional competences could decrease somatic complaints at school (Espejo-Siles et al., 2020). As previous research suggested, negative affect and alexithymia could lead to somatization and antisocial behavior (Manninen et al., 2011; Wilson et al., 1999), but these variables were not tested in this research. Future research is needed to confirm if these variables could influence both problems to decrease them at school. Future studies could focus on common factors that could predict antisocial behaviors and physical and mental health including somatization or suicide ideation.

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DISCUSIÓN

Capítulo 6. Discussion

6.1. General discussion

Somatization and antisocial behavior are common problems at school age, with several negative consequences. Although these problems are prevalent and important throughout the lifespan, adolescence is a critical period. Prevention during the adolescence could decrease the prevalence rates of chronic disorders and somatic complaints. Also, adolescence is a period when problem and antisocial behaviors peak. Therefore, prevention is essential in this period, and consequently, a lot of research had focused on protective and risk factors for somatization or antisocial behavior in adolescence. Nevertheless, longitudinal research on protective and risk factors is still needed, aside from shedding light on the relation between somatization and antisocial behavior.

This doctoral thesis included three independent and related studies which aimed to explore predictors of somatic complaints in adolescents, predictors for developing violent behaviors at home and school, and the relation between different antisocial behaviors and somatic complaints. The objectives were to explore the relation between different antisocial behaviors and the presence of somatic complaints, with special attention to the relation between violence and somatic complaints, and to identify common longitudinal risk and protective factors for somatic complaints and for violent behaviors in different contexts. Discovering some common protective and risk factors for different problems would contribute to the development of accurate and effective preventive programs. Therefore, the study of the relationship between different antisocial behaviors and somatic symptoms in adolescence would advance knowledge on both

problems, and it can be useful to decrease them in the school population, and therefore, to decrease their prevalence during the life spam.

The relation between different antisocial behaviors and somatization

The high frequency in which antisocial behavior co-occurs with somatic complaints encouraged to explore their relation. To achieve this, five different groups of antisocial behavior were described, and then, the relations between damage, theft, violence, status offenses and substance abuse with somatization were explored. It was found that most of the antisocial behaviors tested had significant correlations with somatization. Specifically, the strongest relations were found for high scores in theft, violence, and substance use. They were related to high scores in somatization cross-sectionally and one year later in boys and girls. It was also found that scoring high in damage was related to high scores in somatization cross-sectionally and one year later in boys, but not in girls. High scores in status offenses were related to high scores in somatization cross-sectionally in boys but also one year later in girls. Findings of this study are consistent with previous research that suggested that somatization and antisocial behavior are related, and it is possible that some factors could influence both problems (Castro et al., 2012).

Substance use is a common problem behavior among minors (Järvinen & Room, 2017). Results of our investigation pointed out that substance use was not only related to somatization in both waves, but it was also a longitudinal predictor of somatization. Some research has found similar results. Martin et al. (1982) found that, in female offenders, somatic symptoms and substance abuse were highly prevalent during active criminality. At follow-up, somatic symptoms and substance abuse were still prevalent even if offending decreased. In line with this, a longitudinal study carried out by Gårdvik et al.

(2021) indicated that substance use had more somatic consequences for girls than boys. Some explanations have been proposed. For example, a review conducted by Hassan and Ali (2011) suggested that the presence of somatic symptoms in substance users might represent an underlying primary anxiety disorder. Anxiety disorders tend to be more frequent in females (Remes et al., 2016). Literature and findings of this thesis pointed out to the comorbidity and the chronic course of substance use and somatization, and therefore, the necessity of intervention in both problem behaviors.

Status offenses are usually understood as behaviors that are not allowed in minors, although the same behaviors are allowed in adults (Steinhart, 1996). Some previous studies did not find any relationship between somatization and status offenses (Benner et al., 2010). However, in our third study, status offenses correlated with and were uniquely related to somatization, especially in girls. McGill and Stefurak (2021) stated that status offenses in girls could be related to problems in romantic or familial relationships, which include behaviors such as running away from aversive home environments, and that kind of behaviors could underlie traumatic and stressful experiences. Similarly, Elklit et al. (2009) found, in a sample of traumatized adults, a high prevalence of somatic symptoms. Therefore, it is possible that the relation between somatization and status offenses in girls could be related to experiences of anxiety or trauma. There is not enough literature on this topic, and future studies are needed to better understand the relation between status offenses and somatization.

Violence and somatic symptoms

The relation between the exposure to violence and suffering from somatization has been found in different studies (Hart et al., 2013). In school population, bullying victimization has been considered an important predictor of somatization. Previous

research has established a strong relationship between bullying victimization and somatic symptoms (Gini et al., 2014b). Moreover, it was found that, when bullying ceased, the health in victims improved (Lovell & Lee, 2011). In line with these studies, results of our second study showed that students who scored high in somatization scored high on bullying victimization cross-sectionally and longitudinally.

In line with this, violence perpetration was a factor included in the antisocial behavior questionnaire, and it was the strongest predictor of somatization among all the studied antisocial factors. This highlights the importance of violence perpetration in the surge of somatic complaints. Nevertheless, inconclusive results were found in this thesis regarding the relation between violence perpetration and somatization, since bullying perpetration was only related to somatization cross-sectionally in the second study presented in this thesis, and the relation was not significant after including the covariates in the regression analyses. Previous studies have found that bullying perpetration predicts somatic complaints. Literature also showed that results regarding this relation are inconclusive, showing that little is known about the relation between violent behaviors and somatic complaints, and there is a need of more investigation. A possible explanation could be that bullying roles tend to converge. For example, some perpetrators are also victims at some point (Zych et al., 2020b) and the relation between victimization and somatic complaints is well established (Moore et al., 2017). Other explanation could be the fact that violence perpetration is a broader concept that includes more behaviors than bullying perpetration.

In this sense, violence can be considered a broader concept than bullying perpetration because it could happen in other contexts rather than in school, and it could be perpetrated against different people other than schoolmates. In fact, violence is a more general concept that englobes several targets and contexts, as it could happen in different

places and towards different people. Nevertheless, the involvement in bullying roles is one of the most prevalent violent behaviors in youngsters (Modecki et al., 2014). For this reason, the influence of being victimized at school on violent behaviors was also explored.

Being victimized at school had been related to more somatic symptoms (Gini et al., 2014b), but also, with the development of violent behaviors. Previous studies showed that victimization increased the risk of later violence by about one-third (Ttofi et al., 2012). Thus, it was analyzed to what extend victimization at school and other predictors could be risk factors for the perpetration of violence towards other people such as parents and siblings (violence at home), teachers and schoolmates (violence at school). Also, some problem behaviors towards the society in general were explored. Our study revealed that victimization was the strongest predictor of violence in the final model with all the outcome variables. Results pointed out that victimization at school was a risk factor for developing violent behaviors at home (hitting parents and siblings) and at school (hitting students), highlighting the great impact that victimization has on violent behavior in different contexts and towards different targets.

The findings of this thesis support the existence of the cycle of violence (Widom, 1989), where children who have been victimized could accept violence as a strategy to deal with daily problems, likely without thinking about the negative consequences of this behavior. Some victims may be motivated to become violent offenders because of their experiences of victimization, even victims who have no previous history of violent behavior (Apel & Burrow, 2011). Reducing victimization at school could potentially decrease violence at home and school, and decrease its consequences later in life, including somatic complaints.

Violence was the strongest predictor of somatization in the third study and violence was more frequent in males. Despite this fact, female gender was a predictor of somatization. Females tend to have a higher level of somatization than males according to the literature (Ladwig et al., 2001). Since causes of somatization are miscellaneous, it is possible that factors other than antisocial behavior led to somatization in females, such as depression or anxiety, or that cultural patterns could mean that males with somatic complaints do not seek medical advice as much as females (Kroenke & Spitzer, 1998). Results of our third study showed that female offenders had more risk of somatization than males, supporting previous studies (Cauffman et al., 2007). This highlights the necessity of interventions in both problems that could include gender as an important variable.

Empathy and its relation to violence and somatic symptoms

Results regarding the relation between empathy, violent behaviors and somatic complaints are not clear. Regarding the protective potential of empathy in relation to different violent behaviors, our study found that higher scores in affective and cognitive empathy were a protective factor against carrying a weapon one year later. Nevertheless, empathy was not found to be a protective factor against any other violent behavior. However, descriptive analyses showed that non-perpetrators scored higher in empathy than perpetrators, suggesting that empathy promotion could potentially help decrease violence. In line with this, Zych et al. (2019b), in a systematic review and meta-analysis, found that high empathy and different social and emotional competencies were protective against bullying and cyberbullying, but research findings regarding this relation are inconsistent. It is possible that the relation between empathy and violence could be mediated by socioemotional competences, found in relation to somatic complaints by

MacDonald and Price (2019). Nevertheless, this was not explored in our studies. Other explanation may be the age of the participants. In this sense, McPhedran (2009) found that the relation between low empathy and violence was stronger for older participants, so the current results may be influenced by the younger age of the participants.

Our second study did not find a relation between cognitive empathy and somatization. It was found that adolescents with higher affective empathy and victims of bullying scored higher on somatization. It is possible that victimized children become excessively empathetic and share other people´s emotions to the extent to which they themselves develop somatic symptoms. In this sense, various studies found that victims of bullying have a high level of affective empathy compared to non-victims (Zych & Llorent, 2019; Zych et al., 2019c). Nevertheless, relations among these variables should be studied in future.

Previous findings related to empathy and somatic symptoms were contradictory. In this sense, a study conducted with functional magnetic resonance found that emotional empathy facilitates the somatic representation of other people's mental states, and as a result, reflects more vigorously the observed physical and mental states (Nummenmaa et al., 2008). Affective and cognitive empathy may play different roles in the development of somatic symptoms. MacDonald and Price (2019) showed that it is possible that excessive affective empathy could act as a risk factor of somatic complaints when there is a deficit in emotion regulation. Other authors propose that cognitive empathy could act as a protective or modulating factor for the development of somatic symptoms (Lamm et al., 2007; Lee et al., 2001). Our study did not find a significant relation between cognitive empathy and somatic symptoms, and it found that scoring high in affective empathy was related to higher scores in somatization cross-sectionally and one year later. More studies are needed to clarify the relation between empathy and somatization.

Social and emotional competencies and their relation to violence and somatization

Previous studies found that social and emotional competencies were protective against different problems. For example, Larsson and Frisk (1999) found that a high score in social competence was related to a lower prevalence of internalizing symptoms. Emotional intelligence was found to be related to a lower risk of suicide (Quintana-Orts et al., 2019) and social and emotional learning programs reduced different problem behaviors in schools (Divecha & Brackett, 2019).

Differences in scores in social and emotional competencies were found between offenders and non-offenders. At home, youngsters who perpetrated violence had lower scores in responsible decision making. At school, youngsters who perpetrated violence had a lower level of social awareness. Lower social awareness was also a predictor of student hitting one year later. These differences in social and emotional competencies between perpetrators and non-perpetrators suggest that programs to increase social and emotional competencies of perpetrators could have an effect in reducing violence in different contexts, as it was shown by some previous studies (Durlak et al., 2011). Nevertheless, this recommendation should be taken with caution because anti-bullying programs that promoted social and emotional competencies were found to be less effective than other programs (Gaffney et al., 2021).

Although social and emotional competencies could be protective against violence, an unexpected result derived from a combination of two of the factors of the social and emotional questionnaire, was found. While high self-management and motivation was found to be a risk factor for violence towards teachers, siblings and for the total score in violence, responsible decision making was found to be a protective factor for the same

outcomes. High self-management and motivation was defined as the motivation to follow one´s own objectives despite difficulties. Responsible decision making referred to thinking about advantages and disadvantages before making a decision and not making reckless decisions. Considering these two predictors together, it is possible that the use of violence directly towards people was related to the tendency to make impulsive decisions and a blind motivation to achieve own objectives without thinking about the disadvantages or negative consequences. Therefore, promoting the reevaluation of goals and reflexive decisions may contribute to decreasing violence. Other studies showed that violence is multicausal and that many predictors and the interaction among them should be considered at the same time to fully understand it (Zych et al., 2020b).

Promoting reflective responses in children and adolescents may also help to decrease moral disengagement, which is a cognitive mechanism related to supporting the use of violence. Moral disengagement was measured in our second study, and it was more important in the prediction of violent behaviors and peer violence than in direct violence towards adults (teachers and parents). In this sense, higher scores in moral disengagement were found in youngsters who engaged in violence at school and in violent behaviors (being rowdy in public, carrying a weapon or throwing rocks). Conversely, these differences were not significant regarding violence at home, which was predicted by a younger age. In agreement with a meta-analytic review by Gini et al. (2014a), the effect sizes for moral disengagement are larger for adolescents than for children. Therefore, it is possible that the difference in moral disengagement found between contexts in our study was related to the young age of the perpetrators. In study 1, male gender was a predictor of violence. This is congruent with the tendency of males to suffer more victimization than females (Finkelhor et al., 2007) and to have higher moral disengagement scores (Paciello et al., 2008; Zych & Llorent, 2019). Therefore,

socioemotional competencies may help to decrease violence, and the cognitive mechanisms that validate and support the use of violence for achieving goals.

In the case of somatization, it is possible that programs that promote social and emotional competencies, especially self-awareness, could be a promising approach for reducing somatic symptoms in adolescents. It was found in our second study that boys scored lower in somatic complaints, and scored higher than girls in self-awareness, a dimension of social and emotional competencies related to being aware of own feelings. Future studies may explore if somatic symptoms could decrease in girls by increasing their self-awareness.

Social and emotional competencies may be protective against somatic complaints and violent behaviors. In this sense, Garofalo et al. (2018) found a high level of difficulties in identifying feelings in aggressive offenders. Difficulties in identifying feelings are included among the social and emotional competencies under the construct self-awareness. Difficulties in identifying feelings have been associated with an increased negative affect, which could increase somatic symptoms (Bailey & Henry, 2007). Salovey (2000) also found that negative affect could lead to poor health. Therefore, it is possible that negative emotions derived from violent behaviors could lead to somatization (Musaph, 1974). Promotion of socioemotional competencies may be helpful to decrease violent behaviors and somatic complaints.

6.2. Conclusions, limitations and implications.

The objectives of this thesis were to explore the relation between some antisocial behaviors and somatization, and finding risk and protective factors for violence towards different targets and for somatic complaints in adolescents.

Antisocial behaviors and somatic symptoms

Based on the literature, it was expected to find that different antisocial behaviors predict, to a different degree, greater somatization. This hypothesis was partially accepted. Although most of the antisocial factors were related to more somatic complaints in both waves and genders, violence was the only predictor found concurrently and one year later for somatic complaints. Status offenses predicted more somatic complaints concurrently, and substance use predicted more somatic complaints one year later. Female sex was the strongest predictor in the analysis; therefore, results were discussed considering this fact.

Violence and somatic symptoms

Bullying victimization and moral disengagement were expected to be risk factors for violence in different contexts. Results from study 1 support this hypothesis. Bullying victimization was the most powerful risk factor for the development of violence in the analysis with all the violent behaviors, and it was the main predictor for violence at home (towards parents and siblings). It was also important for violence towards other students and throwing rocks. Different moral disengagement strategies were risk factors for different violent behaviors, except for violence towards adults (teachers and parents), where moral disengagement was not significant.

Bullying roles were expected to be risk factors for somatic symptoms. Bullying victimization was related and predicted more somatic symptoms, while bullying perpetration was related concurrently to more somatic symptoms, but it did not predict them. Therefore, the hypothesis was partially accepted.

Empathy, violence, and somatic symptoms

It was expected that empathy could be a protective factor against violence depending on the context. Results showed that low empathy was a predictor of violence just for violent behaviors that did not imply directed personal violence, such as carrying a weapon. This result could be explained if social and emotional competencies could mediate the relation between empathy and violence, as found by MacDonald and Price (2019) in relation to empathy, socioemotional competencies and somatic complaints, but more research is needed to confirm this. The second study hypothesized that high scores in cognitive empathy and low scores in affective empathy could be related to low scores in somatic symptoms. This hypothesis was partially supported. No relations were found between cognitive empathy and somatic complaints, while high affective empathy was related and predicted more somatic complaints concurrently and longitudinally.

Socioemotional competencies, violence, and somatic symptoms

It was expected that social and emotional competencies were protective factors against violence in different contexts. The results of our study partially support this hypothesis. Most of the social and emotional competencies that were included in the analysis were protective against some violent behaviors but, self-motivation was related to more violence. This result was interpreted considering other variables in the analysis. Furthermore, it was hypothesized that social and emotional competencies could be protective against somatic symptoms. High scores in most of the factors of the

socioemotional questionnaire were related to low scores in somatic complaints, and self-awareness and responsible decision making were predictors of less somatic complaints concurrently and longitudinally, respectively. Therefore, our hypothesis was supported by the data obtained.

Limitations

Despite the strengths, this thesis also has some limitations. Some of the limitations in the studies presented are related to the use of self-reports. Although this method allows obtaining sensitive information from participants, and researchers informed that the study was anonymous, ensuring that participants filled in the questionnaires individually in a silent environment, a response bias is possible. The longitudinal design is an important strength of the studies presented, although attrition in studies 2 and 3 was high. No specific reason for attrition was found (e.g., participants changing schools, participants on a school trip, a heat wave, anonymous code was not always legible), and it is unlikely for the results to be affected by not retaining a higher number of participants. Nevertheless, it would have been desirable to retain more participants.

Furthermore, although linear relations were analyzed, it would be interesting to study if there are other types of relations among the studied variables including some more dynamic interactions or non-linear relations. Other limitation related to study 3 is the fact that there is not much literature about somatization and antisocial behavior, making it difficult to draw conclusions in comparison to the previous studies. Future projects with bigger representative samples could be conducted to confirm the results of the current studies.

Implications

Derived from the studies of this doctoral thesis, some implications for policy and practice can be highlighted. Somatization is a frequent problem at school age, and antisocial behavior is a problem with serious consequences for students. Results of this thesis have shown that different antisocial behaviors were related to somatization, suggesting that some variables might act as protective and risk factors for both problems.

Victimization at school is an important problem. Not only was it related to perpetration of violent behaviors at school, but also at home. This pointed out to the importance of preventing violent behaviors in schools. Social and emotional competencies are a promising protective factor against violence since differences in social and emotional competencies were found between perpetrators and non-perpetrators.

Results from this thesis suggest that training adolescents in re-evaluating their goals and the consequences of their violent behavior could have an impact on decreasing violence later in life. Following Bandura (1973), individuals aim to maximize benefits and minimize costs by anticipating consequences of prospective actions. Possibly, violent children could acquire new strategies for solving problems that increase their benefits compared to using their violent acts. If children and adolescents could compare and re-evaluate benefits and costs of their violent behaviors, violence would be seen as a high-cost behavior, and they would use other strategies to achieve their objectives. Parents are usually the first agents who influence problem solving, therefore, training parents in social and emotional competencies could be especially useful for preventing violence in children (Zych et al., 2020a). Results from the studies presented in this thesis suggest that increasing social and emotional competencies at school not only may decrease violence at school and at home, but it could also decrease somatic symptoms.

The protective effect of socioemotional competencies could also be mediational. Some hypotheses suggest that higher affective empathy is linked to higher somatic symptoms through lower scores in social and emotional competencies (De Greek et al., 2012; MacDonald & Price, 2019). In this thesis, girls scored higher in somatic complaints, cognitive and affective empathy. These findings justify even further the need for social and emotional learning programs in schools as an important tool against different problems.

Furthermore, anti-bullying programs remain necessary. In this thesis, bullying victimization was an influential risk factor for somatic symptoms, and it was also a key factor for violence perpetration in different contexts. Different studies have shown that whole-school anti-bullying and anti-cyberbullying interventions were effective in reducing school bullying and cyberbullying (Chan & Wong, 2015; Gaffney et al., 2019; Gaffney et al., 2019b). Thus, anti-bullying interventions considering victimized children with high affective empathy could be especially important for reducing somatic complaints.

Offenders were also at risk of developing somatic complaints. Especially, our study pointed out that female offenders may be at a greater risk of somatization than non-offenders or boys. In brief, the expression of somatization in students could underlie other problem behaviors that may not be perceived by teachers, especially if they happen outside of school. Therefore, somatic symptoms at school should be considered as a warning signal.

Violent behavior was a predictor of somatization, therefore, programs to decrease violence at school could reduce somatization. Furthermore, findings of our study suggested that early substance use prevention programs could be useful to reduce

somatization in students. Since antisocial behavior and somatization were related, some variables could influence both problems. As previous research suggested, negative affect and alexithymia could lead to somatization and antisocial behavior (Manninen et al., 2011; Wilson et al., 1999), nevertheless, these variables were not tested in this research and should be considered in future.

Future studies could focus on common factors that could predict antisocial behaviors and physical and mental health including somatization or suicidal ideation. Future longitudinal research should include findings of the current study in intervention programs to decrease violence and test their effectiveness.

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ANEXOS

8. Anexos

8.1. Informe del factor de impacto y de las indexaciones de las publicaciones presentadas

A continuación, aparece recopilada la información referente al factor de impacto e indexación de las publicaciones incluidas en la presente tesis, en función del año de publicación.

Tabla 2. *Descripción, indexación y factor de impacto de las publicaciones presentadas.*

Estudio 1	Espejo-Siles, R., Zych, I., Farrington, D. P., & Llorent, V. J. (2020). Moral disengagement, victimization, empathy, social and emotional competencies as predictors of violence in children and adolescents. *Children and Youth Services Review*, *118*, 105337. https://doi.org/10.1016/j.childyouth.2020.105337
Factor de impacto JCR (2020)	Factor de impacto: 2.393 Ranking y cuartil por categorías. 1º cuartil (9/44). Categoría: Social Work. 2º cuartil (19/46). Categoría: Family Studies.
Indexación	PsycINFO Adolescent Mental Health Abstracts Research Alert ASSIA Current Contents - Social & Behavioral Sciences Child Development Abstracts and Bibliography Criminal Justice Abstracts Except Child Educ Abstr

	Sage Family Studies Abstracts Sociological Abstracts Scopus Social Sciences Citation Index PubMed ERA (Educational Research Abstracts Online)

Estudio 2	Espejo-Siles, R., Zych, I., & Llorent, V. J. (2020). Empathy, social and emotional competencies, bullying perpetration and victimization as longitudinal predictors of somatic symptoms in adolescence. *Journal of Affective Disorders*, *271*, 145-151. https://doi.org/10.1016/j.jad.2020.03.071
Factor de impacto JCR (2020)	Factor de impacto: 4.839 Ranking y cuartil por categorías: SSCI: 1º cuartil (25/144). Categoría: Psychiatry SCIE: 2º cuartil (53/208). Categoría: Clinical Neurology 2º cuartil (40/156). Categoría: Psychiatry
Indexación	SIIC Data Bases BIOSIS Citation Index Current Contents - Life Sciences Embase Informedicus PsycINFO

	Pascal Francis PubMed/Medline Scopus

Estudio 3	Espejo-Siles, R., Farrington, D. P., Zych, I., & Llorent, V. J. (2022). Antisocial Behavior as a Longitudinal Predictor of Somatization in Adolescents. *Victims & Offenders*, 1-12. https://doi.org/10.1080/15564886.2022.2052215
Factor de impacto JCR (2021)	Factor de impacto: 0.86 Ranking y cuartil por categorías. 2º cuartil (33/69). Categoría: Criminology & Penology.
Indexación	COhost (Current Abstracts,International Security & Counter Terrorism Reference Center, PsycINFO, SocINDEX, SocINDEX with Full Text, TOC Premier) Elsevier BV (Scopus, National Library of Medicine, PubMed, Ovid, PsycINFO) ProQuest (ASSIA (Online) Applied Social Sciences Index & Abstracts, Selective, Criminal Justice Abstracts, Criminal Justice Database, Criminology Collection, Health Research Premium Collection, Hospital Premium Collection, Professional ProQuest Central, ProQuest Central, Psychology Database, PsycINFO, Social Science Premium Collection, Social Services Abstracts, Core, Sociology Collection) Thomson Reuters (Emerging Sources Citation Index, Web of Science)

8.2. Cuestionarios

Cuestionario de Competencias Socioemocionales (SEC-Q)
Zych et al. (2018)

1	2	3	4	5
Totalmente en desacuerdo	**Bastante en desacuerdo**	**Ni de acuerdo ni en desacuerdo**	**Bastante de acuerdo**	**Totalmente de acuerdo**

		1	**2**	**3**	**4**	**5**
1.	Sé ponerle nombre a mis emociones	1	2	3	4	5
2.	Soy consciente de los pensamientos que influyen en mis emociones	1	2	3	4	5
3.	Diferencio unas emociones de otras	1	2	3	4	5
4.	Sé cómo mis emociones influyen en lo que hago	1	2	3	4	5
5.	Sé cómo motivarme	1	2	3	4	5
6.	Tengo claros mis objetivos	1	2	3	4	5
7.	Persigo mis objetivos a pesar de las dificultades	1	2	3	4	5
8.	Sé lo que la gente espera de los demás	1	2	3	4	5
9.	Presto atención a las necesidades de los demás	1	2	3	4	5
10.	Suelo saber cómo ayudar a las personas que lo necesitan	1	2	3	4	5
11.	Me llevo bien con mis compañeros de clase o trabajo	1	2	3	4	5
12.	Suelo escuchar de manera activa	1	2	3	4	5
13.	Ofrezco ayuda a los demás cuando me necesitan	1	2	3	4	5
14.	Cuando tomo decisiones, analizo cuidadosamente las posibles consecuencias	1	2	3	4	5
15.	Suelo considerar las ventajas e inconvenientes de cada opción antes de tomar decisiones	1	2	3	4	5
16.	No suelo tomar decisiones a la ligera	1	2	3	4	5

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Moral Disengagement Scale – versión corta

Zych et al. (2020)

1	2	3	4	5
Totalmente en desacuerdo	**Bastante en desacuerdo**	**Ni de acuerdo ni en desacuerdo**	**Bastante de acuerdo**	**Totalmente de acuerdo**

	1	**2**	**3**	**4**	**5**
1. Está bien pelearse para proteger a tus amigos	1	2	3	4	5
2. Dar una bofetada o un empujón a una persona es sólo una forma de bromear	1	2	3	4	5
3. Está bien decir mentiras pequeñas porque en realidad no hacen daño	1	2	3	4	5
4. Algunas personas merecen ser tratadas como animales	1	2	3	4	5
5. Si los chicos/as se pelean o portan mal en la escuela es por culpa de su profesorado	1	2	3	4	5
6. Está bien pegar a alguien que ha insultado a tu familia	1	2	3	4	5
7. Pegar a los compañeros de clase que son odiosos es sólo una forma de “darles una lección”	1	2	3	4	5
8. Robar un poco de dinero no es demasiado serio comparado con los que roban mucho dinero	1	2	3	4	5
9. A los niños no les importa que se burlen de ellos porque eso muestra el interés en ellos	1	2	3	4	5
10. Está bien tratar mal a alguien que se ha portado muy mal	1	2	3	4	5
11. Si la gente no presta atención a dónde deja sus cosas, es su culpa si alguien se las roba	1	2	3	4	5
12. Llevarse la bici de alguien sin su permiso es solo “cogerla prestada”	1	2	3	4	5
13. Está bien insultar a un compañero porque pegarle es peor	1	2	3	4	5
14. Burlarse de alguien en realidad no le hace daño	1	2	3	4	5
15. Alguien que es odioso no desea ser tratado como ser humano	1	2	3	4	5
16. Los chicos que son maltratados normalmente hacen cosas para merecerlo	1	2	3	4	5
17. Está bien mentir para proteger a tus amigos de los problemas	1	2	3	4	5
18. Los insultos entre los niños no le hacen daño a nadie	1	2	3	4	5
19. Los niños no tienen la culpa de su mala conducta si sus padres los presionan mucho	1	2	3	4	5

Escala Emociones Morales

Alamo et al. (2020)

1	2	3	4	5
Totalmente en desacuerdo	**Bastante en desacuerdo**	**Ni de acuerdo ni en desacuerdo**	**Bastante de acuerdo**	**Totalmente de acuerdo**

	1	**2**	**3**	**4**	**5**
1. Me siento culpable si le he hecho daño a un compañero	1	2	3	4	5
2. Me arrepiento si le he hecho algo que a otra persona le duele	1	2	3	4	5
3. Me da vergüenza si la gente se da cuenta de que he hecho algo malo a alguien	1	2	3	4	5
4. Siento orgullo si he hecho algo bueno por alguien	1	2	3	4	5
5. Me siento mal si alguien me dice que le he hecho daño	1	2	3	4	5

Self-Reported Antisocial Behavior Questionnaire

Loeber et al. (1989)

1	2	3	4
No	**Sí, una vez**	**Sí, dos veces**	**Sí, más veces**

En los últimos 6 meses	1	2	3	4
1. ¿Has roto, dañado o destrozado algo que pertenecía a tus padres o familiares queriendo?	1	2	3	4
2. ¿Has roto, dañado o destrozado algo que pertenecía a tu escuela queriendo?	1	2	3	4
3. ¿Has roto, dañado o destrozado algo que no pertenecía a tu escuela o familia queriendo?	1	2	3	4
4. ¿Has robado o intentado robar una bicicleta o un patinete?	1	2	3	4
5. ¿Has cogido algo de una tienda sin pagar por ello?	1	2	3	4
6. ¿Has cogido dinero en casa que no te pertenecía, por ejemplo, del bolso de tu madre o del armario de tu padre?	1	2	3	4
7. ¿Has cogido alguna otra cosa de tu casa que no te pertenecía?	1	2	3	4
8. ¿Has cogido algo de la escuela, de tus maestros o compañeros, que no te pertenecía?	1	2	3	4
9. ¿Has ido a un edificio o casa de alguien, patio o garaje y cogido algo que no te pertenecía?	1	2	3	4
10. ¿Has cogido algo que no te pertenecía de un coche?	1	2	3	4
11. ¿Te has copiado en un examen en la escuela?	1	2	3	4
12. ¿Has pegado, dado una bofetada o empujado a un maestro u otro adulto en la escuela?	1	2	3	4
13. ¿Has pegado, dado una bofetada o empujado a uno de tus padres?	1	2	3	4
14. ¿Has pegado, dado una bofetada o empujado tu hermano o hermana o has tenido una pelea física con él/ella?	1	2	3	4
15. ¿Has pegado, dado una bofetada o empujado a otros chicos o chicas o has tenido una pelea física con ellos/as?	1	2	3	4
16. ¿Has ido a un jardín, patio, casa o garaje de alguien cuando se suponía que no deberías estar allí?	1	2	3	4
17. ¿Te has escapado de tu casa?	1	2	3	4
18. ¿Has dejado de asistir a la escuela (hecho novillos) sin motivo?	1	2	3	4
19. ¿Te han mandado a tu casa de la escuela por mala conducta?	1	2	3	4
20. ¿Has escrito cosas o echado pintura de spray en paredes, aceras o coches donde se supone que no debes hacerlo?	1	2	3	4
21. ¿Has sido ruidoso, molesto o revoltoso en un lugar público tanto que la gente se quejó sobre ello o has tenido problemas por ello?	1	2	3	4
22. ¿Has metido fuego o intentado meterlo a un edificio, coche u otra cosa queriendo?	1	2	3	4
23. ¿Has llevado un arma?	1	2	3	4
24. ¿Has evitado pagar por cosas como películas, autobús, metro o comida?	1	2	3	4
25. ¿Le has quitado un bolso, un monedero, una cartera o cosas del bolsillo a alguien?	1	2	3	4
26. ¿Le has tirado piedras o botellas a alguien?	1	2	3	4
27. ¿Has tomado cerveza?	1	2	3	4
28. ¿Has tomado vino?	1	2	3	4
29. ¿Has tomado alcohol fuerte (por ejemplo whisky, ron, vodca, ginebra, etc.)	1	2	3	4
30. ¿Has fumado tabaco?	1	2	3	4
31. ¿Has fumado porros de marihuana?	1	2	3	4
32. ¿Has tomado alguna otra droga (por ejemplo pastillas, cocaína, pegamento, setas)	1	2	3	4

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