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**Relación Recíproca Entre la Psicopatología
de los Padres y el Trastorno Negativista
Desafiante de los Hijos**

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Tesis Doctoral

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Presentación

Formato de la tesis

Esta tesis se presenta como un compendio de dos trabajos empíricos originales de investigación científica que abordan la relación recíproca existente entre la psicopatología de padres y madres y el trastorno negativista desafiante de los hijos, durante la edad preescolar y escolar.

Los dos trabajos se han elaborado a partir de una amplia muestra de niños escolarizados a las edades 3, 5 y 8 años, procedentes del estudio longitudinal “Factores psicológicos de vulnerabilidad a la psicopatología en niños de edad preescolar” (PSI2009-07542 y PSI2012-32695), que aborda la evolución de la psicopatología durante la infancia y adolescencia. Ambos trabajos se presentan en formato artículo, detallándose más abajo las correspondientes referencias y el orden en el que serán referidos a lo largo de esta tesis. Ambos artículos han sido publicados en revistas indexadas en el Journal Citation Reports (ISI).

- Artículo 1: Antúnez, Z., de la Osa, N., Granero, R., & Ezpeleta, L. (2016). Parental Psychopathology Levels as a Moderator of Temperament and Oppositional Defiant Disorder Symptoms in Preschoolers. *Journal of Child and Family Studies*, 1–12. <http://doi.org/10.1007/s10826-016-0461-2>

- Artículo 2: Antúnez Z., de la Osa, N., Granero, R. & Ezpeleta, L. (2017). Reciprocity Between Parental Psychopathology and Oppositional Symptoms from Preschool to Middle Childhood. *Journal of Clinical Psychology*. <http://doi.org/10.1002/jclp.22504>.

Objetivos

El trastorno negativista desafiante (TND) es un trastorno del comportamiento caracterizado por conductas hostiles, desafiantes y opositoras hacia figuras de autoridad. Suele comenzar en la infancia y se puede manifestar en niños pequeños y preescolares, siendo un predictor de otros trastornos, específicamente conductuales, depresivos y ansiosos.

Los niños con TND presentan patrones temperamentales con ciertas características particulares, como la búsqueda de novedad, alta emotividad, baja persistencia y desinhibición. Además, el estilo temperamental del niño puede verse influido o acrecentado por la salud mental y el comportamiento de los padres.

Los padres de niños con TND serían más propensos a dejar de involucrarse en la disciplina de sus hijos y en las prácticas de crianza, especialmente quienes presentan psicopatología. Esta disminución en la supervisión por parte de los padres potenciaría que los hijos aumenten sus problemas de comportamiento, lo que a su vez, aumentaría la emocionalidad negativa de los padres. El impacto psicológico en estos padres implica una mayor probabilidad de manifestar angustia, ansiedad, baja autoestima, depresión, mayor pesimismo sobre el futuro, una peor salud emocional y física general.

Los antecedentes teóricos y empíricos corroboran que los problemas de salud mental de los padres influye en los problemas de salud mental de los hijos y viceversa, existiendo relaciones recíprocas y mutua interdependencia entre ambos. A pesar de las múltiples consecuencias que conlleva ésta interrelación y la importancia de la adecuada detección y prevención de ellas, los antecedentes aún parecen insuficientes, siendo necesario continuar investigando en estas temáticas. Por lo anterior, los estudios que componen esta tesis abordan dos objetivos principales:

- Determinar si el tipo y/o la intensidad de la psicopatología del padre y de la madre (específicamente la agresividad, la depresión y la ansiedad), pueden interactuar en la relación entre el temperamento (extraversión, afecto negativo y control autorregulado) y el nivel de negativismo en una muestra comunitaria de preescolares de forma transversal y longitudinal, entre los 3 y los 5 años.
- Establecer la existencia de una asociación bidireccional entre la psicopatología de padres y madres (agresividad, depresión y ansiedad) y el TND de los hijos entre los 3 y los 8 años, de forma transversal y longitudinal en una muestra comunitaria de preescolares.

Secundariamente, en ambos trabajos se ha valorado el rol moderador del sexo de los participantes en las variables estudiadas y sus interacciones.

Los resultados de esta investigación pretenden ser un aporte científico acerca de la relación bidireccional entre la psicopatología parental y el TND de los niños. Concretamente, en lo que respecta a la detección oportuna y temprana de ésta condición, que tiene importantes consecuencias en el desarrollo e impacto en el funcionamiento y la salud mental del núcleo familiar y social. Por otro lado, se espera que los resultados obtenidos permitan enfocar más adecuadamente la práctica clínica orientada al tratamiento de niños con TND y sus madres o padres con psicopatología.

1. Introducción

1.1 El Trastorno Negativista Desafiante y el Temperamento

El Trastorno Negativista Desafiante (TND) se describe como un patrón persistente y repetitivo de mal humor e irritabilidad, de conductas oposicionistas, desafiantes y hostiles hacia los adultos y figuras de autoridad, que persiste por lo menos durante seis meses (American Psychiatric Association, 2013). Los síntomas de TND incluyen conductas como actuar por despecho o venganza, culpar a los demás por las consecuencias de los propios actos o problemas y presentar patrones de comportamiento caracterizados por inestabilidad emocional, por lo que se asocia también con dificultades para interactuar con otros (Burke, Rowe, y Boylan, 2014; Melegari et al., 2015). Se caracteriza además porque típicamente aparece antes de los 8 años (Connor, Steeber, y McBurnett, 2010) y los niños que lo presentan tienen dificultades crónicas con la regulación emocional y conductual, que a menudo les provocan conflictos con su entorno (Bilgiç et al., 2016).

El TND es una de las condiciones más prevalentes en la infancia, con porcentajes de aparición que oscilan entre un 6,9% y 13,4% en preescolares (Ezpeleta, de la Osa, y Doménech, 2014; Lavigne, Dahl, Gouze, LeBailly, y Hopkins, 2014; Munkvold, Lundervold, y Manger, 2011). La prevalencia es similar en niños y niñas a edades tempranas (Ezpeleta, de la Osa, Granero, y Trepát, 2014), sin embargo, en niños mayores existe una mayor prevalencia en niños que en niñas (Demmer, Hooley, Sheen, McGillivray, y Lum, 2016; Munkvold et al., 2011). En cuanto a estas diferencias, la evidencia muestra que la presencia de síntomas de TND está asociada con mayor deterioro en los niños que en las niñas (Ezpeleta et al., 2014) y que en las niñas se asocia más con trastornos emocionales (Rowe, Maughan, Pickles, Costello, y Angold, 2002).

Las diferencias individuales en los patrones de comportamiento, la reactividad emocional y la autorregulación, han sido identificados como una de las diferencias biológicas emergentes más tempranas en niños, explicando por qué las personas responden de manera diferente a los mismos estímulos (Derryberry y Rothbart, 1997; Rothbart y Posner, 2006). El concepto temperamento se refiere a estas diferencias que se manifiestan ya en el periodo entre la infancia y los primeros años escolares (Stringaris, Maughan, y Goodman, 2010).

Los modelos de temperamento más respaldados por la literatura coinciden en la naturaleza genética y biológica de éste, y que es en general, estable durante toda la vida (Buss y Plomin, 1975; Derryberry y Rothbart, 1997; Goldsmith y Campos, 1982; Thomas y Chess,

1977). Su expresión y desarrollo puede atenuarse, intensificarse o modificarse de acuerdo a las interacciones con el ambiente (Rothbart y Bates, 2006).

Rothbart, Ahadi, Hershey, y Fisher (2001) han propuesto un modelo de temperamento, respaldado por sus investigaciones, con tres dimensiones básicas: extraversión (emocionalidad positiva y sociabilidad), afecto negativo (alto nivel de emociones negativas) y control autorregulado (planificación y manejo voluntario de la conducta).

Existe evidencia de que las diferentes dimensiones temperamentales pueden contribuir de forma diferencial al riesgo de TND en los niños pequeños (Lavigne, Gouze, Hopkins, Bryant, y LeBailly, 2012; Stringaris y Goodman, 2009). Estudios realizados con preescolares indican que los niños con altos niveles de afecto negativo y bajos niveles de control autorregulado tendrían dificultades para regular su intensa reactividad emocional, para modular flexible y adaptativamente su comportamiento y su atención, lo que aumentaría el riesgo de que muestren más síntomas externalizados, entre ellos, síntomas de TND o problemas conductuales (Crawford, Schrock, y Woodruff-Borden, 2011; Eisenberg et al., 2009; Lonigan y Phillips, 2001; Nigg, 2006; Rothbart, 2007; Zeman, Cassano, Perry-Parrish, y Stegall, 2006). Concretamente, una elevada extraversión se ha asociado significativamente con síntomas de negativismo (Lavigne et al., 2012; Martel, Gremillion, y Roberts, 2012; Stringaris et al., 2010). Por otro lado, altos niveles de afecto negativo y desregulación emocional temprana tendrían un papel significativo en el desarrollo y la evolución del TND, siendo predictores de éste trastorno (Burke, Hipwell, y Loeber, 2010; Dougherty et al., 2011; Lavigne et al., 2012; Martel et al., 2012; Argyris Stringaris et al., 2010). A su vez, los niños con bajos niveles de control autorregulado son más propensos a presentar síntomas de TND (Eisenberg et al., 2009; Lavigne et al., 2012; Valiente, Smith, Fabes, Guthrie, y Murphy, 2003).

Por otro lado, a medida que el niño crece, su temperamento interactúa con otros factores, ambientales, como las características de los padres y de la familia (Burnette, Oshri, Lax, Richards, y Ragbeer, 2012). Puesto que los padres no sólo transmiten información genética, sino que también proporcionan el ambiente de crianza del niño (Jaffee, Moffitt, Caspi, y Taylor, 2003), la salud mental y el comportamiento de éstos parece influir en la aparición de ciertas características y acentuar algunos rasgos temperamentales (Childs, Fite, Moore, Lochman, y Pardini, 2014). Por ejemplo, los bajos niveles de control autorregulado pueden predisponer a los niños pequeños a desarrollar síntomas externalizantes que persisten durante la infancia, particularmente cuando están expuestos a factores de riesgo como la depresión materna (Choe, Olson, y Sameroff, 2014).

1.2 Influencia de la salud mental parental en el comportamiento de los niños

Numerosos estudios han demostrado una relación entre los síntomas de TND de los niños y la psicopatología de los padres. La literatura existente informa acerca de los riesgos de deterioro social, emocional y de comportamiento que presentan los niños cuyos progenitores presentan psicopatología (Lovejoy, Graczyk, O'Hare, y Neuman, 2000; Qi y Kaiser, 2003). Particularmente, la evidencia muestra que la depresión parental influye en los niños a través de diversas vías, acentuando principalmente los problemas conductuales y los comportamientos agresivos (Stormshak, Bierman, McMahon, y Lengua, 2000). Las madres y padres deprimidos son más propensos a prestar menos apoyo a sus hijos y a participar en menos actividades parentales positivas, a ser más negativos y hostiles con ellos (Cummings, Keller, y Davies, 2005; Davis, Davis, Freed, y Clark, 2011). Además, tienden a manifestar un trato más duro o distante con sus hijos, fomentando un ambiente más frío que influye en los problemas de comportamiento de los niños (Lovejoy et al., 2000).

Los investigadores también han examinado por separado el efecto de la psicopatología materna y paterna sobre la salud mental del niño y los problemas de conducta. Hay un amplio apoyo en la literatura para la noción de que la salud mental materna y la calidad del cuidado infantil tienen un impacto significativo en el desarrollo del niño (Goelman, Zdaniuk, Boyce, Armstrong, y Essex, 2014), lo que afectaría especialmente a niños que presentan altos niveles en extraversión o afecto negativo (Chen, Deater-Deckard, y Bell, 2014).

A su vez, el afecto negativo y la mayor emotividad negativa de la madre pueden poner a los niños en riesgo de una baja autorregulación (Gartstein, Bridgett, Young, Panksepp, y Power, 2013). En particular, se han encontrado asociaciones positivas entre la negatividad, la hostilidad y el desapego de la madre y los síntomas de TND del niño (Bertino, Connell, y Lewis, 2012). Específicamente, la menor calidez materna también podría tener un efecto en el número de síntomas de TND del niño (Harvey y Metcalfe, 2012).

La evidencia sugiere que tanto el afecto materno negativo como la psicopatología materna –particularmente la ansiedad y la depresión– pueden predecir problemas internalizados y externalizados en los niños, concretamente problemas de conducta (Crawford et al., 2011; Goelman et al., 2014), los que pueden aumentar o disminuir dependiendo de la gravedad de los síntomas maternos (Nicholson, Deboeck, Farris, Boker, y Borkowski, 2011). En un reciente estudio se asoció la presencia de ansiedad materna con problemas de conducta y TND durante la infancia y adolescencia, desde los 6 a los 18 años (Middeldorp et al., 2016), demostrando el impacto que puede tener la ansiedad materna por sí misma, sin asociación con otras patologías, en la salud mental de los niños.

Las madres con síntomas de depresión generalmente evidencian también tasas más altas de irritabilidad y agresividad (Goelman et al., 2014). Esta condición materna se asocia positivamente con altos niveles de afecto negativo, problemas externalizados y una mayor psicopatología general en los niños (Goodman et al., 2011). Por ejemplo, en el estudio de Choe, Olson, y Sameroff (2014), los síntomas depresivos maternos a la edad de 3 años predijeron niveles más altos sólo en el comportamiento externalizado de los niños a los 10 años. Además, en la infancia media, la depresión materna se ha correlacionado significativamente con los aumentos posteriores de los problemas de disrupción de los niños, específicamente en niños de 5 a 6 años (Gross, Shaw, Moilanen, y Wilson, 2008). Datos recientes han informado que los niños con problemas de conducta que tienen una madre con mayor número de síntomas depresivos muestran menos cambios terapéuticos después de una intervención (Dempsey, McQuillin, Butler, y Axelrad, 2016).

Aunque los padres han estado muy poco representados en la literatura sobre la influencia de la psicopatología parental en los niños, la psicopatología paterna puede tener importantes implicaciones para la salud mental y el comportamiento de los niños. Al igual que la relación madre-hijo, la relación padre-hijo puede afectar el desarrollo cognitivo y socioemocional de un niño (Brown, McBride, Bost, y Shin, 2011; Goelman et al., 2014). Se ha encontrado que la interacción positiva de los padres con sus hijos, específicamente, un mayor compromiso y accesibilidad se relaciona con menos problemas de comportamiento externalizado (Flouri, Midouhas, y Narayanan, 2015). Además, la accesibilidad y el compromiso paterno pueden moderar el efecto de la intervención en la salud mental de niños con trastornos emocionales graves (Bernard et al., 2015). A la inversa, el comportamiento agresivo de los padres parece tener un impacto en el desarrollo de comportamientos agresivos y hostiles en los niños, lo que aumentaría los síntomas de TND (Davies, Sturge-Apple, Cicchetti, Manning, y Vonhold, 2012; Trepát, Granero, y Ezpeleta, 2014).

La psicopatología paterna y especialmente la depresión, se ha asociado con manifestaciones de mayor hostilidad hacia los niños y, en consecuencia, con aumentos en los problemas de ajuste de éstos (Reeb, Conger, y Wu, 2010). La depresión paterna y la ansiedad también pueden ser predictores significativos de problemas de conducta y síntomas de TND en niños en edad preescolar (Breux, Harvey, y Lugo-Candelas, 2013; Gross, Shaw, Moilanen, et al., 2008; Kashdan et al., 2004) y continúa influyendo en problemas emocionales y conductuales en niños mayores y adolescentes (Davé, Sherr, Senior, y Nazareth, 2008; Weitzman, Rosenthal, y Liu, 2011). En concreto, Harvey y Metcalfe (2012) informan que la depresión del padre a la edad de 3 años de los niños, predice los síntomas TND de éstos niños

a los 4 años. Recientemente en el estudio de Nath, Russell, Kuyken, Psychogiou, y Ford (2016) los síntomas depresivos paternos a los 9 meses de edad de sus hijos se asociaron con problemas de conducta cuando éstos niños tenían 7 años de edad. Malmberg y Flouri (2011) también midieron los síntomas depresivos de padres de hijos de 9 meses de edad y predijeron problemas de comportamiento de los niños cuando éstos tenían 3 años de edad. Otro estudio con una muestra de gran tamaño (Giallo, Cooklin, Wade, D'Esposito, y Nicholson, 2013) informó que los síntomas depresivos paternos durante la infancia se asociaron con problemas emocionales y de comportamiento en los niños de 4-5 años de edad.

En la investigación de Vallotton, Harewood, Froyen, Brophy-Herb y Ayoub (2016) se examinó si la salud mental parental en la primera infancia predecía el desarrollo social de los niños en quinto grado. Los hallazgos indican que los síntomas depresivos tempranos de los padres son mayores predictores del desarrollo social posterior de los niños que los síntomas depresivos tempranos de la madre, lo que podría sugerir el efecto de la depresión de los padres puede ser aditivo con el tiempo, a diferencia de la depresión de las madres. Tanto estos autores (Vallotton et al., 2016) como Wilson y Durbin (2010) plantean que la depresión paterna podría influenciar más fuertemente a los niños debido a la manifestación clínica de ésta en los hombres, quienes son más propensos a reaccionar con ira o agresividad y a demostrar comportamientos negativos hacia sus hijos, como el castigo físico.

Los estudios previos contribuyen al creciente cuerpo de investigación que considera que los padres influyen tanto como las madres en el desarrollo de sus hijos. Un padre con problemas de salud mental puede tener el mismo impacto que una madre en el temperamento y comportamiento de sus hijos, exponiéndolos a una mayor vulnerabilidad a desarrollar problemas de exteriorización y concretamente, de comportamiento.

1.3 Influencia del comportamiento de los niños en la salud mental de los padres

Las investigaciones sugieren que la conducta de los niños también influye profundamente en la psicopatología y el comportamiento de los padres (Davidov, Knafo-Noam, Serbin, y Moss, 2015; Shaffer, Lindhiem, Kolko, y Trentacosta, 2013). Con respecto a la influencia concreta que los niños pueden tener en sus madres y padres, la investigación de Charles, Bywater, Edwards, Hutchings, y Zou (2013) arrojó que los síntomas conductuales de los niños pueden provocar problemas de salud mental en sus madres y padres. También existe apoyo en la literatura para la idea de que los problemas de conducta de los niños afectan el estilo de crianza, el funcionamiento parental y las relaciones familiares (Childs et al., 2014; Combs-Ronto, Olson, Lunkenheimer, y Sameroff, 2009).

Se ha prestado considerablemente menos atención a los posibles efectos del comportamiento disruptivo de los niños en la aparición de síntomas ansiosos, depresivos o en comportamientos de tipo agresivo en las madres o padres (Gross, Shaw, Moilanen, et al., 2008). En el caso de la depresión, estudios previos indican que los comportamientos infantiles más problemáticos representarían un mayor riesgo de depresión para las madres y los padres (Gallagher y Hannigan, 2014; Resch, Elliott, y Benz, 2012). Asimismo, la evidencia sugiere que la prevalencia de la depresión en madres y padres que cuidan a niños con discapacidades de desarrollo aumenta significativamente en comparación con los padres de los niños sin dificultades (Gallagher y Hannigan, 2014; Singer, 2006).

En el caso de las madres con depresión, éstas podrían ser especialmente vulnerables, experimentando un efecto negativo más largo y más intenso en respuesta a expresiones negativas en sus hijos (Forbes et al., 2008). Las madres cuyos hijos tienen más problemas conductuales o emocionales tienen tasas más altas de síntomas depresivos (Civic y Holt, 2000) y se ha encontrado que los problemas de conducta de los niños predicen altos niveles de síntomas depresivos maternos en familias de bajos ingresos (Gross, Shaw, y Moilanen, 2008). También existe evidencia de que una baja auto-regulación asociada a conducta externalizada de los niños, podrían predecir niveles posteriores de síntomas depresivos maternos (Choe et al., 2014).

Los padres han sido ampliamente sub-representados en la literatura sobre la psicopatología parental, y hay pocas pruebas del impacto de la psicopatología de los niños en su salud mental. No obstante, hay alguna evidencia de que la salud mental de los padres también puede verse afectada por el comportamiento de sus hijos. En el estudio de Kane y Garber (2004) se hallaron asociaciones significativas de la depresión paterna con los síntomas

externalizados de las niñas o niños y de la depresión paterna con el aumento del conflicto padre-hijas o hijos. A su vez, Harvey y Metcalfe (2012) encontraron que la depresión paterna está ligada a los primeros síntomas de TND en los niños. Asimismo, Gross et al. (2008) plantean que los niveles más altos de incumplimiento de normas de los niños a la edad de 2 años correlacionan significativamente con los síntomas depresivos paternos. Además, algunos estudios observacionales sugieren que los niños con problemas de comportamiento externalizado evocan un comportamiento más negativo y aversivo en sus padres y otros adultos (Anderson, Lytton, y Romney, 1986; Brunk y Henggeler, 1984). La evidencia también indica que los padres pueden sentirse angustiados cuando sus hijos son adolescentes, debido a su irritabilidad y comportamientos agresivos (Connell y Goodman, 2002).

En síntesis, los antecedentes anteriormente expuestos indican que no sólo la psicopatología parental influye en los problemas de conducta de los niños y la salud mental infantil, sino que los niños también ejercen influencia en la salud mental de sus padres y en su entorno social, provocando y demandando respuestas y acciones de los adultos (Davidov et al., 2015). La influencia entre padres e hijos es recíproca, influyéndose mutuamente a través del desarrollo (Nicholson et al., 2011; Pineda, Cole, y Bruce, 2007).

1.4 Planteamiento de objetivos e hipótesis empíricas

Si bien existen numerosos estudios que se han centrado en explicar la relación e influencia de la psicopatología parental en la psicopatología y funcionamiento de los niños, pocos han estudiado la relación inversa, es decir, cómo los problemas del desarrollo o comportamientos difíciles de los hijos pueden influir en la salud mental de sus padres. Las evidencias empíricas acerca de la relación bidireccional entre la salud psicológica de los padres y de sus hijos es también escasa. Por lo anterior, el objetivo de este trabajo es evaluar la posible relación recíproca entre el estado psicopatológico de padres y madres y el grado de TND de los hijos, y la influencia de potenciales variables moderadoras que actúan en esta relación. El estudio se realiza en una cohorte de niños españoles de población general entre tres y ocho años, de forma transversal y longitudinal.

Los objetivos específicos de los dos trabajos empíricos que conforman este compendio se detallan a continuación.

1.5.1 Trabajo empírico 1

Objetivo

- Determinar si el tipo y/o la intensidad de la psicopatología del padre y de la madre (específicamente la agresividad, la depresión y la ansiedad), pueden interactuar en la relación entre el temperamento (extraversión, afecto negativo y control autorregulado) y el nivel de negativismo en una muestra comunitaria de preescolares de forma transversal y longitudinal, entre los 3 y los 5 años.

Hipótesis empíricas

- Los niveles en las dimensiones de temperamento de extraversión, afecto negativo y control autorregulado tienen un efecto directo sobre los niveles de TND en preescolares, de manera que mayores niveles de extraversión y afecto negativo y bajos niveles de control autorregulado estarían asociados a un mayor grado de TND.
- Los niveles de agresividad, depresión y ansiedad de padres y madres moderan la relación entre el TND y el temperamento, de tal manera que a mayores niveles de agresividad, depresión y ansiedad de los padres, mayor será el efecto del temperamento (alta extraversión y afecto negativo y bajo control autorregulado) sobre los síntomas de TND, acentuando la sintomatología.

1.5.2 Trabajo empírico 2

Objetivo

- Evaluar la posible existencia de una asociación bidireccional entre la psicopatología de padres y madres (agresividad, depresión y ansiedad) y el TND de los hijos entre los 3 y los 8 años, de forma transversal y longitudinal en una muestra comunitaria de preescolares.

Hipótesis empíricas.

- Los niveles más altos de psicopatología paterna y materna se asocian con mayores niveles de TND en niños y niñas tanto a los 3 como a los 8 años.
- Los niveles más altos de TND en niños y niñas a los 3 años se asociarán con una mayor psicopatología paterna y materna cuando estos niños tengan 8 años.

2. Método

2.1 Participantes

La muestra forma parte de un estudio longitudinal sobre la evolución de la psicopatología durante la infancia y adolescencia (Ezpeleta, de la Osa, y Doménech, 2014).

La recogida de datos se efectuó mediante un muestreo en doble fase (Figura 1).

- Fase 1: se seleccionó una muestra inicial de 2.283 familias (obtenida del censo del año 2009-2010) con hijos de 3 años escolarizados en Barcelona en el nivel preescolar P3 (el número de niños del censo fue de $N = 13.578$). Un total de 1.341 aceptó participar. Se excluyó a 63 niños por dificultades en la comprensión-uso del idioma español o catalán, por presentar trastorno generalizado del desarrollo o discapacidad intelectual. Para los 1.278 niños participantes se realizó un cribado que permitiera asegurar la inclusión de preescolares con posibles problemas psicológicos, aplicando el Cuestionario de Capacidades y Dificultades (*Strengths and Difficulties Questionnaire*, SDQ³⁻⁴; Goodman, 1997). El cribado se consideró positivo cuando se obtenía una puntuación mayor o igual a 4 en la escala de problemas de conducta del cuestionario.
- Todas las familias en que los niños tuvieron cribado positivo fueron invitadas a participar ($n = 522$) y 417 de ellas aceptaron. De los 756 casos con cribado negativo, se invitó a participar al 30% ($n = 235$) para continuar en el estudio, de los cuales 205 aceptaron. La muestra final del estudio longitudinal incluye 622 niños y niñas.
- Fase 2: los $n=622$ niños finalmente seleccionados en el estudio fueron evaluados de forma anual, ininterrumpidamente desde los 3 a los 8 años.

Los participantes de este estudio forman parte de los $n=622$ niños y niñas que formaron parte de la cohorte con seguimiento longitudinal.

A los 3 años se analizaron los datos de $n=550$ sujetos, a los 4 años $n=540$ y a los 5 años $n=496$. Los casos analizados son los que cumplieron el criterio de inclusión en el estudio 1 de esta tesis, es decir, los sujetos que poseían información completa tanto para la entrevista diagnóstica como para los cuestionarios. En la Tabla 1 se detallan las características sociodemográficas básicas de la muestra inicial de sujetos que forman parte del proyecto general en que se ubica esta tesis doctoral y de la cual se obtuvieron las submuestras de participantes en cada uno de los estudios de esta tesis.

A los 8 años se disponía de una muestra de $n=475$ sujetos, de los cuales fueron incluidos $n=331$ en el estudio 2 por cumplir con el criterio de inclusión de contar información completa tanto para la entrevista diagnóstica como para los cuestionarios analizados.

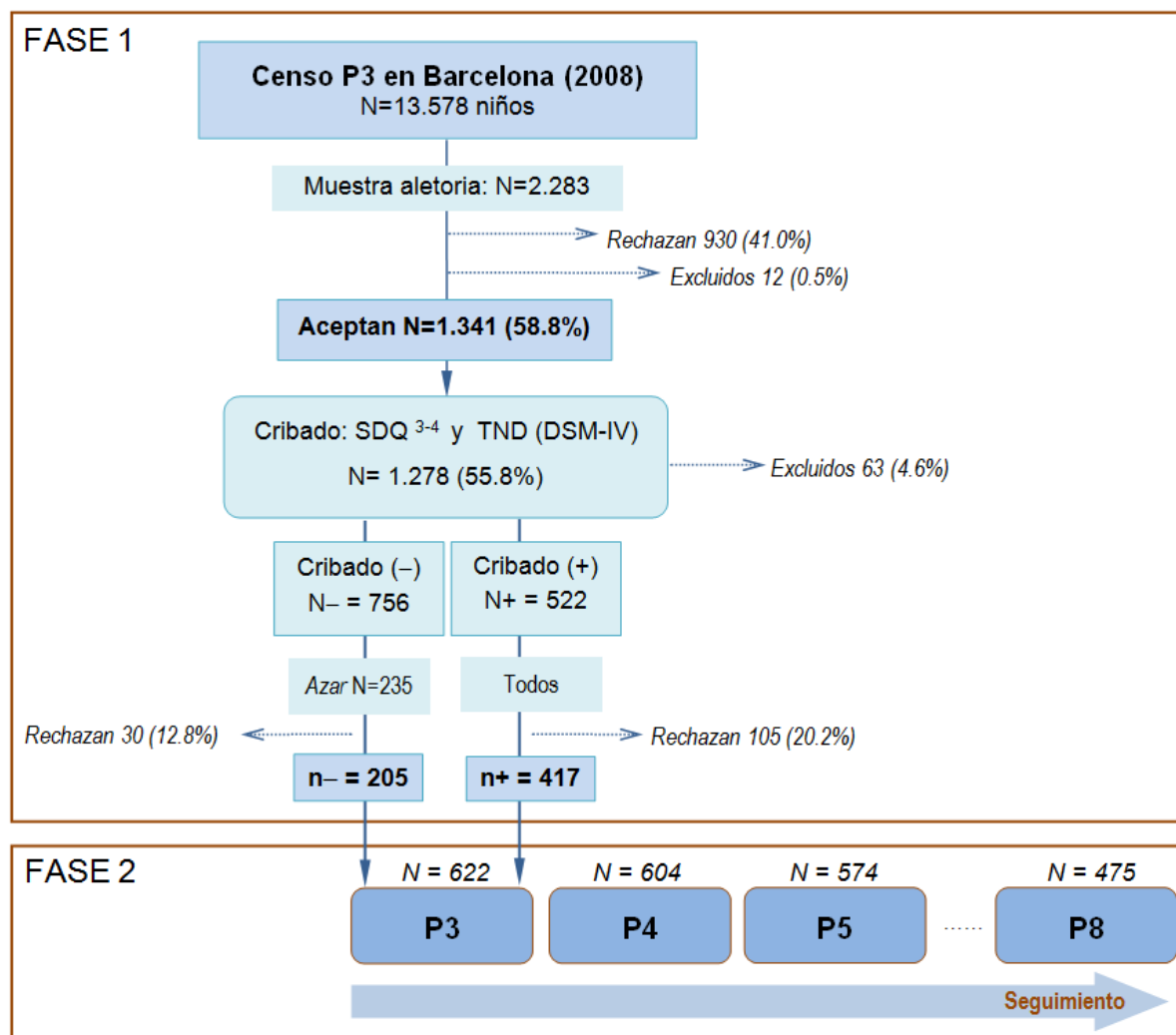


Figura 1. Diseño del estudio. Adaptado de Ezpeleta, de la Osa, y Doménech (2014)

Tabla 1. Características sociodemográficas de la muestra original al inicio del seguimiento (n=622, a los 3 años de edad)

| Sociodemográficos a los 3 años | | | |
|--------------------------------|------------|------|--------|
| Edad (años) | Media (DE) | 3.76 | (0.32) |
| Sexo; n (%) | Femenino | 312 | (50.2) |
| SES; n (%) | Alto | 205 | (33.0) |
| | Medio-alto | 195 | (31.4) |
| | Medio | 88 | (14.1) |
| | Medio-bajo | 99 | (15.9) |
| | Bajo | 35 | (5.6) |
| Étnia; n (%) | Caucásica | 554 | (89.1) |
| | Hispana | 40 | (6.4) |
| | Otras | 28 | (4.5) |

Nota. DE= Desviación Estándar; SES= Nivel Socioeconómico (siglas en inglés de *Socioeconomic Status*)

2.1.1 Trabajo empírico 1

Los participantes de este primer trabajo fueron seleccionados de la muestra inicial correspondiente a la fase 2 ($n=622$ niños y niñas escolarizados en tercer curso de preescolar), seleccionándose los casos con información completa en la entrevista y cuestionarios ($n=550$ sujetos a los 3 años, $n=540$ a los 4 años y $n=496$ a los 5 años). No hubo diferencias estadísticamente significativas en cuanto a sexo ($p = 0.22$), etnia ($p = 0.09$) o nivel socioeconómico ($p = 0.24$) entre los sujetos incluidos en el análisis final o los sujetos excluidos debido a información incompleta. La Tabla 2 describe las características sociodemográficas y la distribución de los principales trastornos DSM-IV-TR de los participantes del estudio.

Se utilizó la entrevista diagnóstica (DICA – PPYC; Reich y Ezpeleta, 2009), contestada por los padres para evaluar el número de síntomas de TND de los niños. En cada momento temporal también se utilizó un cuestionario para evaluar las dimensiones temperamentales de extraversión, afecto negativo y control autorregulado (CBQ; Rothbart, Ahadi, Hershey, y Fisher, 2001). Las evaluaciones se efectuaron de forma anual a los 3, 4 y 5 años.

A su vez, cuando los niños tenían 3 años se aplicó a los padres el cuestionario ASR (Achenbach, y Rescorla, 2003), que mide psicopatología en adultos y se analizaron las escalas específicas de depresión – ansiedad y agresividad en madres y padres.

Tabla 2. Características de la muestra de participantes ($n=550$).

| Sociodemográficos en la línea base | | | Trastornos DSM-IV-TR (%) | 3 años | 4 años | 5 años |
|------------------------------------|------------|-------------|--------------------------|--------|--------|--------|
| Edad (años) | Media (DE) | 3.77 (0.34) | Trastornos Disruptivos | 9.28 | 7.93 | 9.59 |
| Sexo; n (%) | Femenino | 285 (51.8) | Déficit de Atención | 3.50 | 4.73 | 4.16 |
| SES | Alto | 184 (33.5) | Negativismo Desafiante | 6.34 | 4.21 | 6.47 |
| | Medio-alto | 184 (33.5) | Trastorno de Conducta | 1.08 | 0.00 | 0.23 |
| | Medio | 74 (13.5) | Trastornos Depresivos | 2.93 | 0.00 | 0.00 |
| | Medio-bajo | 82 (14.9) | Trastornos de Ansiedad | 7.71 | 5.72 | 9.24 |
| Étnia | Bajo | 26 (4.7) | Ansiedad de Separación | 1.86 | 0.89 | 1.04 |
| | Caucásica | 499 (90.7) | Ansiedad Generalizada | 0.11 | 0.11 | 0.58 |
| | Hispana | 31 (5.6) | Fobia Específica | 4.67 | 4.73 | 8.31 |
| | Otras | 20 (3.7) | Fobia Social | 1.96 | 2.19 | 3.57 |

Nota. DE= Desviación Estándar; SES= Nivel Socioeconómico

2.1.2 Trabajo empírico 2

Los participante del segundo trabajo se seleccionaron igualmente a partir de la muestra inicial del proyecto ($n = 662$). Se escogieron todos los sujetos que disponían de información completa ($n = 331$) tanto para la entrevista diagnóstica como para los cuestionarios analizados, a los 3 y a los 8 años. La Tabla 3 contiene la distribución de los principales trastornos del DSM-IV-TR (APA, 2000) a los 3 y 8 años (los trastornos no incluidos en este cuadro registraron bajas prevalencias). No surgieron diferencias estadísticamente significativas entre los participantes incluidos en el análisis final o los casos excluidos debido a información incompleta en términos de sexo ($p = 0.20$), etnia ($p = 0.13$) o estatus socioeconómico ($p = 0.23$).

La entrevista diagnóstica utilizada para evaluar el número de síntomas de TND de los niños a los 3 y a los 8 años fue la DICA – PPYC. A estas edades también se aplicó a los padres un cuestionario de psicopatología en adultos (ASR), utilizándose las escalas de depresión – ansiedad y agresividad.

Tabla 3. Descriptivo de las características clínicas de la muestra ($n=331$).

| Trastornos DSM-IV-TR | 3 años | 8 años |
|----------------------------------|--------|--------|
| Trastornos Disruptivos | 6.9% | 13.1% |
| Déficit de Atención | 4.4% | 9.4% |
| Trastorno Negativista Desafiante | 4.4% | 6.0% |
| Trastorno de Conducta | 0.5% | 0.0% |
| Trastornos Depresivos | 0.2% | 1.2% |
| Trastornos de ansiedad | 7.8% | 10.3% |
| Ansiedad por Separación | 1.2% | 1.6% |
| Ansiedad Generalizada | 0.0% | 1.2% |
| Fobia Específica | 3.5% | 6.7% |
| Fobia Social | 2.3% | 1.2% |

2.2 Instrumentos

2.2.1 Psicopatología y funcionamiento

- *Diagnostic Interview for Children and Adolescents for Parents of Preschool and Young Children (DICA-PPYC)* (Reich y Ezpeleta, 2009): es una entrevista diagnóstica respondida por los padres que evalúa la psicopatología infantil de acuerdo con la taxonomía del DSM-IV-TR (APA, 2000). En este estudio, se han utilizado los datos recogidos a los 3, 4, 5 y 8 años de los niños participantes. Como medida del nivel de TND se utilizó el número de síntomas informados en cada seguimiento. Esta entrevista semiestructurada ha sido adaptada y validada para la población preescolar española presentando adecuadas propiedades psicométricas (Ezpeleta, de la Osa, Granero, Domènech, y Reich, 2011).
- *Strengths and Difficulties Questionnaire (SDQ)* (Goodman, 2001): cuestionario de 25 ítems que permite identificar niños con alto riesgo de problemas emocionales y comportamiento disruptivo. Se compone de cinco escalas: síntomas emocionales, problemas de conducta, hiperactividad, relación con los compañeros y conducta prosocial. La puntuación total se genera mediante la suma directa de las cuatro escalas primarias. A mayor puntuación, más dificultades conductuales y emocionales. En esta investigación el SDQ se utilizó como cribado en la primera fase del diseño del estudio y fue respondido por los padres. La versión utilizada fue la española, la cual presenta propiedades psicométricas aceptables para su uso en preescolares (Ezpeleta, Granero, de la Osa, Penelo, y Domènech, 2013).

2.2.2 Factores de riesgo

- *Children's Behavior Questionnaire (CBQ)* (Rothbart et al., 2001): es un cuestionario que evalúa el temperamento de niños entre los 3 y los 7 años, contestado por los padres. Cuenta con 7 opciones de respuesta en formato Likert, las que van de 1 (completamente falso) a 7 (completamente verdadero), además de una opción de respuesta "no aplicable" para cuando los padres no han observado la situación descrita. Los ítems miden 15 dimensiones del temperamento del niño, estructuradas en 3 escalas de segundo orden: extraversión, afecto negativo y control autorregulado. La escala de extraversión incluye las dimensiones de nivel de actividad, la preferencia por estímulos intensos, impulsividad, anticipación positiva y la timidez. La escala de afecto negativo incluye las dimensiones de malestar, sosegabilidad, miedo, enfado o

frustración y tristeza. La escala de control autorregulado incluye la atención, el control inhibitorio, la preferencia por estímulos poco intensos, la sensibilidad perceptiva y la sonrisa o risa. En este estudio se utilizó la versión española, que ha demostrado proporcionar puntajes fiables y válidos para evaluar las características temperamentales en niños preescolares (de la Osa, Granero, Penelo, Domènech, y Ezpeleta, 2013). La consistencia interna en la muestra del estudio ha sido buena, obteniéndose valores de $\alpha = 0.74$ en la escala de extraversión, de $\alpha = 0.71$ en la escala de afecto negativo y de $\alpha = 0.79$ en la escala de control autorregulado.

- *Adult Self-Report (ASR)* (Achenbach y Rescorla, 2003): es un cuestionario que evalúa el nivel de psicopatología en adultos de entre 18 y 59 años. Cuenta con 126 ítems que valoran el comportamiento en los últimos seis meses, además de algunos ítems referidos a las relaciones interpersonales, aspectos laborales y educacionales. La escala de medida es ordinal con 3 opciones de respuesta: 0 (no es cierto), 1 (algunas veces es cierto) y 2 (cierto muy a menudo). Las madres y padres participantes de éste estudio respondieron este cuestionario cuando sus hijos tenían 3 y 8 años. En este proyecto se analizaron las escalas de depresión – ansiedad y agresividad, tanto en madres como en padres, las cuales demostraron una alta consistencia interna en la muestra, tanto a los 3 años (depresión – ansiedad madre: $\alpha = 0.81$; depresión – ansiedad padre: $\alpha = 0.79$; agresividad madre: $\alpha = 0.80$ y agresividad padre: $\alpha = 0.81$), como a los 8 años (depresión-ansiedad madre: $\alpha = 0.80$; depresión-ansiedad padre: $\alpha = 0.77$; agresividad madre: $\alpha = 0.79$ y agresividad padre: $\alpha = 0.81$).

2.3 Procedimiento

El proyecto del que forman parte los datos cuenta con la aprobación del Comité Ético de la Universitat Autònoma de Barcelona (Comissió d'Ètica en l'Experimentació Animal i Humana: CEEAH 1385). Se invitó a las familias de los niños a participar cuando estos tenían 3 años de edad. Se les contactó en la escuela, donde se informó con detalle acerca de la investigación tanto a padres como a profesores. Tras obtener el consentimiento escrito de los padres, se les pidió responder el SDQ³⁻⁴ en casa y devolverlo a la escuela. Las familias que cumplieron con los criterios de selección fueron contactadas por teléfono para ser incluidas en el estudio longitudinal y responder en cada seguimiento la entrevista diagnóstica (DICA – PPYC) en la escuela, con entrevistadores previamente entrenados en el uso de la entrevista diagnóstica y en los otros instrumentos a aplicar. Los otros cuestionarios eran contestados en casa por los padres y devueltos posteriormente al propio colegio.

2.4 Análisis estadístico

Los análisis estadísticos se realizaron con los programas SPSS20 y Stata13 para Windows. Dado que los datos proceden de un muestreo doble fase con cribado, en el sistema SPSS20 se utilizó el módulo de muestras complejas (*Complex Samples*) asignando a cada sujeto un peso igual a la probabilidad inversa de selección en la segunda fase del muestreo con objeto de poder generalizar los resultados obtenidos a la población general de origen.

Los procedimientos estadísticos específicos de cada estudio se detallan a continuación. Todos los análisis fueron ajustados por la covariable “otras comorbilidades diferentes al TND”, que incluyó el trastorno de déficit de atención e hiperactividad (TDAH), trastorno de conducta, depresión, ansiedad de separación, ansiedad general, fobias específicas y fobia social, los cuales han sido mayormente relacionados en los estudios epidemiológicos con el inicio y el curso del TND a edades tempranas y durante la niñez (Harvey, Breau, y Lugo-Candelas, 2016; Martín, Granero, y Ezpeleta, 2014; Stringaris y Goodman, 2009).

Trabajo empírico 1

En este estudio se definieron como variables independientes el temperamento (medido como las escalas de extraversión, afecto negativo y control autorregulado en el CBQ), la psicopatología de los padres (medido como las escalas de depresión - ansiedad y agresividad en el ASR) y la interacción de cada escala del temperamento con las escalas de psicopatología parental. La variable dependiente fue el nivel de TND, definido como el número total de síntomas de negativismo en la entrevista diagnóstica.

Los datos se analizaron mediante modelos de regresión logística binomial negativa, un modelo alternativo a la regresión de Poisson para variables dependientes de recuento cuya distribución presenta sobredispersión.

Se efectuó el modelado en tres bloques/pasos: en el primer paso se incluyeron las variables de control/ajuste (TDAH, trastorno de conducta, depresión, ansiedad de separación, ansiedad general, fobias específicas y fobia social), en el segundo las puntuaciones de las escalas de temperamento del CBQ y de psicopatología del ASR, y en el tercer bloque, los parámetros de interacción de primer orden entre cada escala del CBQ con cada escala del ASR (con objeto de valorar la posible presencia de moderación entre temperamento y psicopatología paterna).

Tras obtener cada modelo se valoró si el conjunto de los parámetros de interacción eran o no relevantes y se procedió del siguiente modo: a) se excluyó el bloque 3 cuando la prueba de conjunto para las interacciones (*chunk-test*) obtuvo valores $p > .10$, y se interpretaron los efectos principales obtenidos en el bloque 2; b) para valores $p \leq .10$ en el *chunk test* se identificó qué interacciones eran significativas, con objeto de retenerlas en el análisis y estimar efectos simples para las correspondientes variables implicadas en estos parámetros de interacción.

Se obtuvieron modelos de regresión entrando simultáneamente la información del ASR aportada por el padre y por la madre, lo que permitió obtener la contribución específica de cada cuidador.

Se realizaron dos tipos de análisis: transversal y longitudinal. En el análisis transversal se obtuvieron resultados independientes a los 3, 4 y 5 años de edad que permitieron observar las interacciones entre la psicopatología de los padres y de las madres, las medidas del niño en el CBQ y el número de síntomas de TND en dichas edades. En el análisis longitudinal se incluyeron como predictores las puntuaciones de las escalas de temperamento a los 3 años, la psicopatología de los padres también registrada a los 3 años de los niños y los niveles de TND de los niños a los 5 años, con el objetivo de verificar si la intensidad de los rasgos

temperamentales a los 3 años eran predictores estadísticos de los niveles de TND a los 5 años y si la sintomatología parental moderaba la intensidad de ésta relación.

Trabajo empírico 2

Se realizó un modelo de ecuaciones estructurales para estudiar la posible relación mediacional entre las medidas de psicopatología de los padres (puntuación directa en las escalas de depresión-ansiedad y agresividad en el ASR) y el número de síntomas de TND de los niños a los 3 y a los 8 años.

Se utilizó el método de máxima verosimilitud de la estimación de parámetros y se evaluó la bondad de ajuste utilizando los índices habituales: el Error Medio Cuadrático de Aproximación (*Root Mean Square error of Approximation, RMSEA*), el Índice de Ajuste Fit de Bentler (*Bentler Comparative Fit Index, CFI*), el Índice de Tucker-Lewis (*Tucker-Lewis Index, TLI*) y la Raíz Cuadrada de la Media de las Diferencias Residuales (*Standardized Root Mean Square Residual, SRMR*).

Se consideró un ajuste adecuado del modelo para $RMSEA <.08$, $TLI >.90$, $CFI >.90$ y $SRMR <.10$ (Marsh, Hau, y Wen, 2009).

3. Resultados

A continuación se mencionan los principales resultados obtenidos en los dos trabajos realizados, los que se resumen en una tabla al final de cada apartado.

3.1 Trabajo empírico 1

- Los hallazgos a nivel transversal indican que durante toda la edad preescolar (3, 4 y 5 años), el nivel de TND es mayor en niños con puntuaciones más altas en la dimensión temperamental de afecto negativo y con puntuaciones más bajas en la dimensión de control autorregulado.
- A los 3 años se encuentran mayores niveles de TND en niños cuyas madres presentan puntuaciones más altas en la escala de agresividad y padres con niveles más altos de depresión-ansiedad.
- A los 4 años, los niños con madres que presentan puntuaciones más altas de agresividad también presentan mayores niveles de TND. El nivel de depresión-ansiedad de los padres no contribuyó de forma significativa en los niveles de sintomatología de TND de sus hijos.
- A los 3 y 4 años, no hubo interacciones significativas entre el temperamento y la psicopatología parental, lo que indica que el efecto de las características del temperamento de los niños sobre el nivel de TND no se ve moderado por los niveles de psicopatología de las madres ni de los padres en las dimensiones de depresión-ansiedad y agresividad.
- A los 5 años se da una interacción significativa entre la dimensión temperamental de control autorregulado y la depresión-ansiedad del padre. Este resultado indica que los niveles de depresión y ansiedad del padre moderan la relación entre el control autorregulado y el TND. En concreto, los resultados del estudio evidenciaron que mayores niveles de depresión y ansiedad del padre, aumentan el efecto del control autorregulado sobre el TND.
- Los resultados a nivel longitudinal muestran que la interacción entre la escala de temperamento control autorregulado y la escala ASR de depresión-ansiedad del padre fue significativa. A los 5 años, los niveles de TND son mayores para niños que a los 3

años puntuaron más alto en afecto negativo y más bajo en control autorregulado, y que sus padres presentaban puntuaciones más altas en depresión-ansiedad.

- Un temperamento caracterizado por altos niveles de afecto negativo y bajo control autorregulado a los 3 años de edad es predictor de altos niveles de TND a los 5 años. La relación se intensifica con puntuaciones más altas del padre en sintomatología de depresión-ansiedad.

3.2 Trabajo empírico 2

- Los hallazgos a nivel transversal para las niñas indican que a la edad de 3 años el número de síntomas de TND se correlacionó positivamente con los niveles psicopatológicos en depresión - ansiedad y agresividad en la madre.
- En las niñas a los 3 años hubo una correlación positiva entre los niveles de TND y los niveles de agresividad del padre.
- En los niños, a los 3 años el número de síntomas de TND fue mayor para hijos cuyas madres presentaban niveles más altos de agresividad. No hubo asociaciones entre los niveles de TND y agresividad del padre o entre los niveles del TND con la depresión – ansiedad de la madre o el padre.
- A los 8 años no hubo asociación para niñas ni niños entre la intensidad del TND y los niveles de depresión – ansiedad o agresividad del padre o de la madre.
- Los hallazgos a nivel longitudinal indican que cuanto mayor es el número de síntomas de TND de los niños a los 3 años, mayor será el nivel de depresión – ansiedad del padre a la edad de 8 años.
- Longitudinalmente también se ha encontrado que niveles más altos en la medida de depresión – ansiedad de la madre a los 3 años predijeron significativamente altos niveles de TND para los niños a los 8 años.
- Sólo hubo resultados a nivel longitudinal para los niños. En las niñas no se hallaron asociaciones predictivas.

4. Discusión

En esta tesis se ha obtenido evidencia empírica de la relación recíproca entre la psicopatología de padres y madres y el nivel de TND de los hijos. Concretamente los resultados permiten valorar el rol del temperamento en el TND y la influencia de la psicopatología parental en esta relación. Asimismo, la evidencia empírica que se ha obtenido permite identificar la influencia que tendría la psicopatología parental sobre la sintomatología negativista de los hijos, y de forma inversa, como los síntomas de TND de los hijos podrían influir en la salud mental de madres y padres longitudinalmente.

A continuación se discuten brevemente los hallazgos principales.

Trabajo empírico 1

Los resultados de éste estudio muestran que durante la edad preescolar, los rasgos temperamentales de afecto negativo y control autorregulado se asocian con la intensidad del TND en los niños transversalmente, y que esta relación se ve moderada por los niveles de depresión y ansiedad del padre al final del período preescolar (a los 5 años). La intensidad de los rasgos temperamentales de afecto negativo y control autorregulado a los 3 años de edad son predictores estadísticos de los niveles de TND a los 5 años, y la presencia de sintomatología de ansiedad y depresión en el padre modera la intensidad de la relación.

Los hallazgos indican que los elevados niveles de afecto negativo y de bajo control autorregulado influyen en el desarrollo de un TND en preescolares, lo que coincide con lo reportado por diversos autores (Burke et al., 2010; Dougherty et al., 2011; Eisenberg et al., 2009; Lavigne et al., 2012; Martel et al., 2012; Stringaris et al., 2010; Valiente et al., 2003). Esto podría explicarse por un lado, porque durante los primeros años el control autorregulado aún no se ha desarrollado del todo, siendo esperable que con la edad vaya en aumento (Liang, Zhang, Deng, Song, y Zheng, 2013). Por otro lado, los preescolares con altos niveles de afecto negativo tendrían dificultades para regular su intensa reactividad emocional, lo que también aumentaría el riesgo de que muestren más síntomas de TND o problemas conductuales (Crawford, Schrock, y Woodruff-Borden, 2011).

Los resultados de este estudio indican que la psicopatología parental tiene incidencias también en la sintomatología negativista. Específicamente, la agresividad de la madre influiría directamente en el nivel de síntomas de TND, lo cual podría ocurrir debido al aumento de afecto negativo en niños con madres con niveles más altos de agresividad, aunque varios estudios establecen una relación directa entre la negatividad y la ira materna con los

problemas de conducta en los hijos (Chen et al., 2014; Goelman et al., 2014). También hay antecedentes de que los hijos de padres con depresión y ansiedad serían más propensos a presentar problemas de conducta (Breux et al., 2013; Davé et al., 2008; Kashdan et al., 2004; Meadows, McLanahan, y Brooks-Gunn, 2007 y Weitzman et al., 2011).

Con respecto al rol moderador de la psicopatía parental entre el temperamento de los hijos y el TND, el presente estudio ha arrojado un interesante hallazgo referido a que únicamente la psicopatología depresiva y ansiosa del padre moderaría entre el temperamento y el TND de sus hijos y no la agresividad, la depresión o la ansiedad de la madre. La evidencia empírica acerca del impacto que la psicopatología materna tendría en la autorregulación y los problemas de conducta de los hijos (Chen et al., 2014; Crawford et al., 2011; Gartstein et al., 2013; Goelman et al., 2014), indicaba que ésta podría modificar la relación entre el temperamento y el negativismo del hijo. Sin embargo, en la presente investigación sólo la depresión del padre interactúa con una dimensión de temperamento, el bajo control autorregulado.

Las investigaciones han estado más centradas en las madres que en los padres y las relaciones de éstos con sus hijos. Sin embargo, en el último tiempo los antecedentes empíricos han demostrado la importancia que los padres tienen durante la primera infancia y todo el desarrollo de sus hijos y la influencia en la salud mental de los niños de un padre con psicopatología. Incluso algunos autores refieren que tener un padre con psicopatología podría impactar más gravemente en el funcionamiento psicológico de los hijos que tener una madre con psicopatología (Cimino, Cerniglia, y Paciello, 2014; Lovejoy et al., 2000). Existen algunas explicaciones para este fenómeno. Una de ellas se centra en la diferencia de roles que tendrían los padres y las madres con sus hijos en la edad preescolar. Algunas investigaciones han sugerido que las madres pasan más tiempo con sus hijos durante la primera infancia y responden de manera más regulada a las situaciones de conflicto, mientras que los padres, especialmente los que presentan síntomas psicopatológicos, muestran un nivel más bajo de respuesta hacia sus hijos, lo que puede ser un factor de riesgo para la aparición de conductas desadaptativas en éstos (Elgar, Mills, McGrath, Waschbusch, y Brownridge, 2007).

Por otro lado, también existe evidencia de que los padres deprimidos tendrían menos capacidad para regular las emociones de sus hijos, lo que podría afectar el desarrollo temperamental de éstos (Lovejoy et al., 2000). A su vez, los niños con poco apoyo paterno tendrían más dificultades para controlar y regular sus emociones negativas (Hurrell, Hudson, y Schniering, 2015), influyéndose mutuamente. Finalmente, los padres deprimidos tendrían comportamientos más negativos hacia sus hijos y se involucrarían menos en la supervisión de

éstos, siendo más permisivos, lo que incidiría directamente en sus problemas de conducta (Childs et al., 2014; Jewell, Krohn, Scott, Carlton, y Meinz, 2008). Es probable que un padre permisivo no tenga la capacidad de controlar adecuadamente el comportamiento de su hijo ni de detener posibles comportamientos desadaptativos (Braza et al., 2013).

Trabajo empírico 2

Los resultados del presente estudio indican que niveles más altos de psicopatología paterna y materna estarían asociados con mayores niveles de TND en niños a los 3 años. En prescolares particularmente, la influencia de la psicopatología de los padres y el comportamiento agresivo, hostil o violento en la madre o el padre tiene un gran impacto en la salud mental de sus hijos, influyendo en el inicio de los síntomas de TND (Goelman et al., 2014; Nantel-Vivier, Pihl, Côté, y Tremblay, 2014; Trepát et al., 2014).

Los hallazgos longitudinales indican que los hijos de madres con mayores niveles de depresión y ansiedad a la edad de 3 años presentan mayores niveles de síntomas de TND a la edad de 8 años.

La psicopatología parental y su influencia en los niños, ha sido largamente estudiada, existiendo antecedentes empíricos que permiten sostener que madres y padres con problemas de salud mental pueden influir en los problemas psicológicos de sus hijos. Particularmente, en el caso de madres y padres con depresión y ansiedad, esto puede darse a través de una menor dedicación a sus hijos en términos de tiempo y atención. Los padres deprimidos tienden a estar menos centrados en sus hijos y en sus necesidades que en las propias, estando más preocupados de resolver sus dificultades (Gross, Shaw, y Moilanen, 2008; Harvey y Metcalfe, 2012; Kane y Garber, 2004). Los datos de este estudio indican que los niños se ven más afectados que las niñas de sintomatología negativista en términos de desarrollo a largo plazo, cuando es la madre quien presenta mayor sintomatología a principio de la edad preescolar. Una explicación para este fenómeno radica en que las madres con depresión-ansiedad podrían tener una menor cercanía con sus hijos que con sus hijas. Al respecto, los estudios previos indican que las madres con más síntomas depresivos son más distantes con sus hijos varones (Hummel y Kiel, 2014), lo que conllevaría consecuencias en el desarrollo, como la aparición de síntomas de TND.

Los resultados longitudinales de este estudio además sugieren que los niveles de TND a los 3 años de los niños (no de las niñas) predicen los niveles de depresión y ansiedad en los padres (no las madres) cuando estos niños tienen 8 años de edad. Estos resultados indican que también los padres y no sólo las madres, son sensibles a los estados emocionales y problemas

conductuales de sus hijos, lo que influiría en su salud mental a través del tiempo. Los hallazgos de la presente investigación muestran que los padres serían más vulnerables a los problemas conductuales de sus hijos que hijas y concuerdan con la evidencia previa, que sugiere que un niño con síntomas de TND y problemas de conducta puede afectar negativamente la emotividad y el comportamiento de los padres, incluso en mayor medida que las actitudes de los padres afectan a los niños (Childs et al., 2014; Larsson, Viding, Rijdsdijk, y Plomin, 2008; Pardini, Fite, y Burke, 2008).

En cuanto a la influencia del niño con TND sobre la sintomatología depresiva y ansiosa en los padres, prácticamente no hay estudios. El estudio de Gross, Shaw, Moilanen, et al. (2008) es uno de los primeros en presentar evidencia empírica de que los síntomas depresivos paternos están bidireccionalmente asociados con el comportamiento de sus hijos en la primera infancia. Al respecto, Fite, Colder, Lochman, y Wells (2006) sugieren que los padres de niños con problemas de conducta se sienten incapaces de disciplinar a sus hijos, lo que tiende a disminuir su cercanía con ellos y su supervisión. Por lo tanto, cuando los niños presentan comportamientos desafiantes, los padres pueden tener menos habilidades, estrategias parentales menos efectivas y disminuir su autoestima, empeorando así sus síntomas depresivos (Goodman y Gotlib, 1999; Nelson, Hammen, Brennan, y Ullman, 2003).

Otra explicación para este fenómeno la puede ofrecer los papeles que los padres juegan con sus hijos, particularmente con los niños. Las investigaciones sugieren que los padres pasan menos tiempo con sus hijos que las madres, pero mucho de este tiempo se invierte jugando. Por ello, los padres experimentarían menos dificultades y conflictos con sus hijos que las madres (Driscoll y Pianta, 2011; Weaver, Shaw, Crossan, Dishion, y Wilson, 2014). En consecuencia, los niños que presentan problemas de conducta muy tempranos pueden ser más sensibles a la calidad de sus relaciones con sus padres que con sus madres (Weaver et al., 2014).

A la luz de los hallazgos de la presente investigación, es posible suponer que la tendencia de los padres a interactuar más con sus hijos a través de actividades lúdicas crea una mayor cercanía con sus hijos varones. Sin embargo, esta relación es perturbada por el comportamiento difícil de los niños con TND, afectando la salud mental de sus padres. Al ser una relación recíproca, los padres deprimidos mostrarían más comportamientos negativos hacia sus hijos y los monitorearían menos. Este comportamiento excesivamente permisivo tendría un impacto directo en los problemas de conducta de sus hijos, especialmente en los preescolares (Braza et al., 2013; Childs et al., 2014; Jewell et al., 2008).

4.1 Limitaciones

La principal limitación de ambos estudios empíricos radica en el número inferior de padres que respondieron el *Adult Self-Report* en comparación con las madres. Esto redujo el tamaño de la muestra, ya que sólo se utilizaron casos con información completa de madres y padres. Con respecto también a las medidas de psicopatología de ambos padres, ésta se basó en los informes de sus síntomas mediante sus respuestas dadas en el ASR, el cual se utilizó con fines dimensionales.

Asimismo, en ambos estudios los datos sobre los síntomas de TND de los niños provienen únicamente de los informes de los padres. No obstante, éstos suelen ser los mejores informantes en edad preescolar y escolar, ya que en esta etapa los niños tienden a mostrar mayor sintomatología de TND en sus hogares.

4.2 Fortalezas

Las fortalezas de ambos estudios incluyen una amplia muestra longitudinal y representativa de niños en edad preescolar y escolar, que ha permitido tanto mediciones de psicopatología infantil, como mediciones longitudinales de la psicopatología de padres y madres por separado, con seguimientos anuales.

Otra de las fortalezas consiste en el uso de una entrevista diagnóstica para la medida de la psicopatología infantil, de acuerdo a los criterios DSM-IV-TR. Además, se han controlado estadísticamente en los análisis la presencia de otros trastornos comórbidos, lo que permite que los resultados obtenidos se atribuyan específicamente a la condición de diagnóstico de TND.

Se debe considerar que la mayoría de las investigaciones longitudinales sobre las influencias bidireccionales de padres e hijos se han centrado en breves períodos de tiempo, por lo que la principal fortaleza de segundo estudio es que examina la relación entre la psicopatología de los padres y los síntomas de TND a través de los años preescolares y hasta los 8 años de edad.

4.3 Implicaciones

Los resultados de estos estudios son un aporte en la comprensión del desarrollo del TND desde la edad preescolar hasta la infancia media. Asimismo, tienen importantes implicaciones en lo referente a la prevención y el tratamiento del TND. Si bien, aún falta mucho por saber con respecto a los factores de riesgo tempranos del TND, la posibilidad de evaluar precozmente los rasgos temperamentales en los niños parece ser un importante avance, ya que la detección de altos niveles de afecto negativo y bajos niveles de control autorregulado, permitirá detectar tempranamente niños en riesgo de desarrollar un TND. Específicamente, plantea la posibilidad de intervenir prematuramente en las habilidades de autorregulación de niños con estos rasgos, siendo ésta una forma de prevención y tratamiento precoz de los síntomas de negativismo, tal como plantea Lavigne et al. (2012).

Por otro lado, resulta también relevante abordar el rol que tiene la psicopatología depresiva y ansiosa de los padres, ya que pocos estudios han valorado la influencia de los progenitores masculinos en el desarrollo de sus hijos. De acuerdo a los hallazgos del primer artículo, un niño con bajo control autorregulado tendrá distintos niveles de negativismo si la depresión o ansiedad de su padre es leve, moderada o severa, lo que puede tener múltiples consecuencias a nivel individual (para los niños y para los padres), como a nivel familiar. Se debe considerar también la posibilidad de que los padres se vean influidos emocionalmente por el temperamento difícil de sus hijos y los síntomas de negativismo que presentan.

De acuerdo a los hallazgos del segundo artículo, existiría una relación recíproca entre los padres y sus hijos, por lo que su sintomatología se influiría y acentuaría mutuamente. Considerando lo mencionado previamente, es indispensable que en términos clínicos, se integre a la familia de los preescolares con problemas y se indague en la salud mental de los padres, tanto en su estado actual como en sus antecedentes de salud previos, especialmente en lo referente a la sintomatología depresiva y ansiosa. Por ende, la labor del clínico también implica que estos padres puedan asumir, abordar y tratar su propia psicopatología, potenciando así la salud mental tanto de ellos mismos como de sus hijos y su entorno.

Por último, también es posible trabajar clínicamente en la relación entre padres e hijos, abordando las interacciones entre ellos a través del juego. Este permitiría tanto una relación más cálida, como que los padres aprendan estrategias de disciplina, lo cual podría mejorar significativamente el comportamiento de los niños con TND. Ayudar a los padres a interactuar con sus hijos y desarrollar habilidades parentales beneficia tanto a los niños como a sus padres (Barth, 2005).

5. Conclusiones

Los hallazgos de los dos estudios realizados y expuestos en los artículos científicos previamente referidos, permiten concluir acerca de la relación recíproca de la psicopatología de los padres y sus hijos:

- El TND es una condición que se encuentra con mayor frecuencia en niños con un temperamento difícil caracterizado por altos niveles de afecto negativo y bajos niveles de control autorregulado.
- Un niño que a los 3 años presenta alto afecto negativo y bajo control autorregulado podría desarrollar un TND a los 5 años, siendo un factor relevante en esta relación que el padre presente síntomas ansiosos y depresivos. La psicopatología paterna podría acentuar el efecto del temperamento sobre el TND.
- Al considerar la importancia de la relación que se da entre padres e hijos y las implicancias que dicha relación tiene para el desarrollo socio emocional del niño, es posible comprender que la depresión paterna pueda ser un factor mantenedor de los problemas conductuales infantiles. Un padre depresivo de un niño con conductas desafiantes probablemente utiliza menos estrategias parentales efectivas, lo que a su vez, intensificaría la sintomatología del hijo.
- La psicopatología materna afectaría tanto a niñas como a niños con altos niveles de síntomas de TND a la edad de 3 años. En las niñas el TND se correlaciona positivamente con los niveles de depresión, ansiedad y comportamiento agresivo de la madre. No obstante en los niños, la relación es sólo con la agresividad.
- A nivel longitudinal sin embargo, son los mayores niveles de depresión – ansiedad de la madre a los 3 años, los que predicen significativamente altos niveles de TND para los niños a los 8 años. Los efectos de depresión-ansiedad maternas durante la edad preescolar parecen tener consecuencias estables en el desarrollo de los niños, haciéndolos más vulnerables a presentar problemas de conducta en edad escolar.
- Debido a que los niños interactúan con su entorno e influyen en él, presentar un comportamiento desafiante, desobediente u hostil podría tener consecuencias en el tiempo para quienes conviven a diario con éstos niños.
- Niños y niñas con TND presentan algunas diferencias en cuanto a la interacción con sus madres y padres. Al realizar el seguimiento luego de 5 años, se evidencia que el

padre de un niño que a los 3 años tenía altos niveles de TND ha desarrollado un mayor número de síntomas de depresión – ansiedad en ese tiempo.

- Existe una mutua interrelación entre la psicopatología parental y de los hijos. Tanto los padres pueden influir en la salud mental de sus hijos, como éstos también pueden ser un factor relevante en la salud mental de los padres. Asimismo, la psicopatología paterna resulta un factor relevante, que se influye mutuamente con los síntomas de TND de los hijos.

Considerando los antecedentes expuestos, resulta relevante la detección temprana y oportuna de las dimensiones temperamentales, los síntomas de TND y la psicopatología de los padres. Mientras antes puedan detectarse estas condiciones, antes podrá intervenir adecuadamente a nivel clínico y prevenir en el caso de los niños, la cronicidad del TND y la aparición de otros trastornos a futuro, ya sea conductuales, depresivos y ansiosos.

Resulta también relevante detectar pertinentemente la sintomatología ansiosa, depresiva y los posibles comportamientos de tipo agresivo de madres y padres, ya que sólo con un tratamiento oportuno de estas condiciones podría evitarse que esto influyera también en la salud mental de los hijos.

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7. Publicaciones

7.1 Primer trabajo empírico: artículo publicado

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ORIGINAL PAPER

Parental Psychopathology Levels as a Moderator of Temperament and Oppositional Defiant Disorder Symptoms in Preschoolers

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Abstract Oppositional Defiant Disorder (ODD) is among the most prevalent disorders in preschoolers. It has been linked to temperament, since characteristics such as elevated surgency and negative affect, as well as low levels of effortful control, contribute to the development of this disorder. Evidence also indicates that parental psychopathology can accentuate temperamental traits. Our aim was to assess whether the levels of psychopathology of mothers and fathers acts as a moderator of the relationship between temperament and ODD symptoms in preschoolers, both cross-sectionally at ages 3, 4 and 5, and longitudinally between ages 3 and 5. The sample included 550 children evaluated at ages 3, 4 and 5 through questionnaires and a semi-structured diagnostic interview with parents. Parents also answered a questionnaire about their own psychopathology. The results indicated that negative affect and effortful control are associated with higher levels of ODD symptoms in preschoolers. At child age 5, higher levels of paternal depression and anxiety increased the

effect of low effortful control on ODD. High levels of negative affect and low levels of effortful control at age 3 were statistical predictors of ODD levels at age 5, and this relationship was also moderated by paternal anxiety and depression. The results have important clinical implications for the proper orientation of interventions, suggesting that interventions should integrate the paternal caregiver in the treatment.

Keywords Oppositional defiant disorder · Parental psychopathology · Preschool · Temperament

Introduction

Oppositional Defiant Disorder (ODD) is among the most prevalent disorders in childhood with rates varying between 6.9 and 13.4 % in preschoolers (Ezpeleta et al. 2014a; Lavigne et al. 2009). It is described as a persistent pattern of anger and irritability, along with oppositional, defiant and hostile behavior toward adults and authority figures (American Psychiatric Association 2013). The symptoms of ODD include behaviors such as acting out of spite or revenge, blaming others for the consequences of one's actions or problems, presenting deficits in self-control, and displaying patterns of behavior characterized by emotional instability (Burke et al. 2014; Melegari et al. 2015).

Individual differences in behavior patterns, emotional reactivity and self-regulation have been identified as some of the earliest biological differences emerging in children, factors that explain why people may respond differently to the same stimulus (Derryberry and Rothbart 1997; Rothbart and Posner 2006). The concept of temperament refers to the individual differences already manifest in the period

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between infancy and early school years (Stringaris et al. 2010).

There is a general consensus among previous studies regarding the stability of temperament throughout the lifespan, with support from genetic and biological models (Buss and Plomin 1975; Derryberry and Rothbart 1997; Goldsmith and Campos 1982; Thomas and Chess 1977). However, the expression and development of temperament can be mitigated, intensified or modified according to interactions with the environment (Rothbart and Bates 2006; Thomas and Chess 1977).

Rothbart et al. (2001) proposed a three-part model of temperament, involving surgency (positive emotionality and extraversion), negative affect (high levels of negative emotions) and effortful control (planning and self-regulation of behavior). Evidence suggests that the individual dimensions of temperament proposed in this model may differentially contribute to the risk for ODD in young children (Lavigne et al. 2012; Stringaris and Goodman 2009). For instance, studies on preschoolers suggest that children with high levels of negative affect and low levels of effortful control are at risk for temperamental difficulties. In particular, they would have trouble regulating intense emotional reactivity (Stringaris et al. 2010), as well as modulating behavior and attention in a flexible and adaptive way (Crawford et al. 2011; Nigg 2006), all of which would increase the risk of displaying more externalizing symptoms (Rothbart and Bates 2006), such as ODD symptoms (Lavigne et al. 2012) or behavioral problems (Dougherty et al. 2011; Eisenberg et al. 2009). Researchers have also found associations between high surgency and symptoms of defiance (Lavigne et al. 2012; Martel et al. 2012; Stringaris et al. 2010).

Despite the demonstrated biological nature of temperament, environmental factors such as parental psychopathology create gene-environment interactions that significantly affect the developing temperament (Burnette et al. 2012). Since parents not only transmit genetic information, but also shape the rearing environment (Jaffee et al. 2003), the poor mental health and behavior of parents has been demonstrated to adversely affect the mental health of children and accentuate traits associated with a difficult temperament (Childs et al. 2014; Weitzman et al. 2011; Yoo et al. 2013). For example, parents with mental health problems such as depression are likely to have a relationship with their children characterized by tough or distant parenting. These parental attitudes may create a cooler rearing environment, which could influence child behavioral problems (Lovejoy et al. 2000).

Researchers have also looked separately at the effect of maternal and paternal psychopathology on child temperament and behavior problems. There is extensive support in the literature for the notion that maternal mental health and

child care quality have a significant impact on child development (Goelman et al. 2014). The evidence suggests that both maternal negative affect and maternal psychopathology may predict increased internalizing and externalizing problems in children, behavior problems in particular (Crawford et al. 2011; Goelman et al. 2014), especially, in children characterized by high surgency or negative affect (Chen et al. 2014). Negative affect and greater negative emotionality of the mother can put children at risk for low self-regulation (Gartstein et al. 2013).

Mother's psychopathology—in particular depression—may influence children's behavior problems, which may increase or decrease depending on the severity of maternal symptoms (Nicholson et al. 2011). Maternal depression may also cause children to have a greater negative affect and undergo more general psychopathology (Goodman et al. 2011).

Although fathers have been vastly underrepresented in the literature on parent psychopathology and their influence on children, previous research also indicates that paternal psychopathology can have important implications for the mental health of the children. Like the mother-child relationship, the father-child relationship may affect a child's cognitive and socio-emotional development (Brown et al. 2011; Goelman et al. 2014). It has been found that more father engagement was related to fewer externalizing problems (Flouri et al. 2015). And conversely, fathers' aggressive behavior seems to have an impact on the development of aggressive and hostile behavior in children, increasing the symptoms of ODD (Davies et al. 2012; Trepát et al. 2014).

In addition, paternal psychopathology and especially depression has been associated with displays of greater hostility toward children, and consequently, with increases in child adjustment problems (Reeb et al. 2010). As a result, paternal depression and anxiety may also be significant predictors of behavior problems and ODD symptoms in preschoolers (Breux et al. 2013; Gross et al. 2008; Kashdan et al. 2004), and it continues to influence emotional and behavioral problems in older children and adolescents (Davé et al. 2008; Weitzman et al. 2011).

Furthermore, considering that maternal and paternal psychopathology may have different consequences in children with a difficult temperament and symptoms of oppositionism, the moderating role of parental psychopathology in the relationship between temperament and the ODD symptoms should be considered. Nevertheless, there is a lack of empirical evidence in this respect. However, there is some evidence that a mother's depression can be a significant moderator of effects in the child's conduct problems, and these children tend to respond better to intervention (Gardner et al. 2010). Regarding fathers, positive interaction with their children, specifically, their

levels of engagement and accessibility can moderate the effect of intervention on the mental health of children with serious emotional disturbances (Bernard et al. 2015).

With this in mind, the aim of this study was to determine whether the type and/or severity of paternal or maternal symptomatology (specifically aggression, depression and anxiety) interacts with the relationship between child temperament (surgency, negative affect and effortful control) and the level of ODD in a community sample of preschoolers, both cross-sectionally and longitudinally, between the ages of 3 and 5. Based on research conducted to date, we formulated the following empirical hypotheses: (a) levels of surgency, negative affect and effortful control would have an effect on ODD levels in preschoolers, in such a way that higher levels of surgency and negative affect and low levels of effortful control would be associated with greater ODD; (b) Paternal and maternal aggression, depression and anxiety would moderate the relationship between ODD and temperament, in such a way that higher levels of parental aggression, depression and anxiety would be associated with a stronger effect of temperament (high surgency, high negative affect and low effortful control) on ODD symptoms.

Method

Participants

The sample was obtained as part of a longitudinal study investigating potential risk factors, interactions and mechanisms underlying the development of psychopathology in early childhood (Ezpeleta et al. 2014a). Data was collected from participants using a double-phase design. In the first phase, an initial sample of 2283 families of 3-year-old children from Barcelona were randomly contacted from those in the census ($N = 13,578$). In total, 1341 families agreed to participate (58.7 %) and 63 children were excluded on account of having difficulties understanding or using Spanish or Catalan, or because they presented a pervasive developmental disorder or intellectual disability.

In the second phase, a screening was used to identify children with possible psychological problems. Parents of the remaining 1278 children answered the Strengths and Difficulties Questionnaire (SDQ³⁻⁴) (Goodman 1997) and all families of children screening positive (with a raw score ≥ 4 on the SDQ³⁻⁴ conduct problems scale, which corresponds with percentile 90, or with a response option of 2 -certainly true- in any of the 8 DSM-IV ODD symptoms) were invited to participate ($n = 522$), with 105 families declining. Additionally, of the 756 cases that screened negative on the SDQ³⁻⁴, 235 (30 %) were selected to continue in the study; 30 of them refused. The final sample

included 622 children with an average age of 3.76 (SD = 0.32), of whom 310 were male (49.8 %) and 554 identified as Caucasian (89.1 %). The left side of Table 1 shows the sociodemographic characteristics of the initial sample, and the right side shows the prevalence of the most frequent DSM-IV disorders at follow-up.

From the initial sample, subjects who possessed complete information for both the diagnostic interview and the analyzed questionnaires ($n = 550$ at 3 years, $n = 540$ at 4 years, and $n = 496$ at 5 years) were included in the statistical analysis. Parents answered about their own psychopathology at first follow-up (mothers: $n = 599$ and fathers: $n = 561$). There were no statistically significant differences between subjects included in the final analysis and subjects excluded due to incomplete information in terms of sex ($p = 0.22$), ethnicity ($p = 0.09$) or socioeconomic status ($p = 0.24$). Table 1 describes the sample of children who were part of the statistical analysis at the first follow-up.

Procedure

The study was approved by the ethics committee of the authors' home institution (*Comissió d'Ètica en l'Experimentació Animal i Humana, Universitat Autònoma de Barcelona*: CEEAH 1385). The families of children were contacted through recruitment at schools and invited to participate when the children were 3 years old; both parents and teachers were informed in detail about the investigation at the time of recruitment. After obtaining written parental consent, parents were asked to answer the SDQ³⁻⁴ at home and return the completed form to the school. Families who met the selection criteria were contacted by phone to be included in the study, and consenting parents participated in the diagnostic interview (DICA-PPYC) at the child's school. The DICA-PPYC was administered by interviewers previously trained in the use of this diagnostic interview and in the other instruments applied. The intensive training period lasts one week and includes an overview about developmental psychology, children's psychopathology and interviewing skills. Principally, future interviewers conducted practical training with role playing and then, observation and coding of live interviews. The criterion for being ready for the field is to obtain a mean agreement with an expert kappa ≥ 0.80 for all the questions in at least eight interviews. The other questionnaires were answered by the parents at home and then returned to be collected at the school.

Measures

Diagnostic Interview for Children and Adolescents for Parents of Preschool and Young Children (DICA-PPYC)

Table 1 Characteristics of the initial sample of participants and the sample of children who were part of the analysis at baseline

| Sociodemographic | | Total | | Analysis | | DSM-IV disorders | | | Total | | | Analysis | | |
|-----------------------|-----------|----------------|--------|----------------|--------|----------------------------|-------|------|----------------|------|------|----------------|--|--|
| At baseline (3 years) | | <i>n</i> = 622 | | <i>n</i> = 550 | | (weighted % at ages 3–4–5) | | | <i>n</i> = 622 | | | <i>n</i> = 550 | | |
| Age (years) | Mean (SD) | 3.76 | (0.32) | 3.77 | (0.34) | Disruptive disorders | 10.03 | 8.93 | 9.72 | 9.28 | 7.93 | 9.59 | | |
| Sex; <i>n</i> (%) | Female | 312 | (50.2) | 285 | (51.8) | ADHD | 3.70 | 5.10 | 4.33 | 3.50 | 4.73 | 4.16 | | |
| Socioeconomic status | High | 205 | (33.0) | 184 | (33.5) | Oppositional defiant | 6.91 | 5.14 | 6.55 | 6.34 | 4.21 | 6.47 | | |
| | Mean-high | 195 | (31.4) | 184 | (33.5) | Conduct disorder | 1.36 | 0.20 | 0.53 | 1.08 | 0.00 | 0.23 | | |
| | Mean | 88 | (14.1) | 74 | (13.5) | Depressive disorders | 3.10 | 0.60 | 0.32 | 2.93 | 0.00 | 0.00 | | |
| | Medio-low | 99 | (15.9) | 82 | (14.9) | Anxiety disorders | 8.33 | 6.70 | 9.81 | 7.71 | 5.72 | 9.24 | | |
| Ethnicity | Low | 35 | (5.6) | 26 | (4.7) | Separation anxiety | 2.15 | 1.41 | 1.27 | 1.86 | 0.89 | 1.04 | | |
| | White | 554 | (89.1) | 499 | (90.7) | Generalized anxiety | 0.10 | 0.10 | 0.53 | 0.11 | 0.11 | 0.58 | | |
| | Hispanic | 40 | (6.4) | 31 | (5.6) | Specific phobia | 5.33 | 5.60 | 8.96 | 4.67 | 4.73 | 8.31 | | |
| | Other | 28 | (4.5) | 20 | (3.7) | Social phobia | 1.94 | 2.10 | 3.58 | 1.96 | 2.19 | 3.57 | | |

SD standard deviation

(Reich and Ezpeleta 2009): The DICA-PPYC is a semi-structured interview used to assess child psychopathology according to DSM-IV-TR criteria (American Psychiatric Association 2000). It was adapted and validated for the Spanish preschool population, and the Spanish preschool version presents adequate psychometric properties (Ezpeleta et al. 2011). The DICA-PPYC was answered by one (mother or father) or by both parents together, completing a single interview. In this situation they reach an agreement on the answer that best represents the opinion about the child's behavior. The average administration time is approximately 50 min. We used data collected from the DICA-PPYC at child ages 3, 4 and 5. At each follow-up, the number of ODD symptoms was used as a measure of ODD level. Additionally, the following diagnoses comorbid with ODD were defined as covariates in the analysis: Attention-deficit/hyperactivity disorder, conduct disorder, depression, separation anxiety, general anxiety, specific phobias and social phobia.

As regards the respondents, at child age 3, 367 (66.7 %) mothers, 41 (7.5 %) fathers and 142 (25.8 %) both parents together, completed an interview. At child age 4, 378 (70.0 %) mothers, 42 (7.8 %) fathers and 120 (22.2 %) both parents together answered the DICA-PPYC. At child age 5, 370 (74.6 %) mothers, 36 (7.3 %) fathers and 90 (18.1 %) both parents together answered the interview.

Adult Self-Report (ASR) (Achenbach and Rescorla 2003): The ASR evaluates emotional and behavioral problems in adults between the ages of 18 and 59. It features 126 items that inquire about the respondent's own behavior over the past six months, plus some items related

to interpersonal relationships, work and educational matters. The internalizing problems scale combines anxious/depressed, withdrawn/depressed and somatic complaints syndrome scores and the externalizing problems scale combines rule-breaking behaviors, aggressive behavior and intrusive syndrome scores. The measurement scale is ordinal, with 3 response options: 0 (not true), 1 (somewhat or sometimes true) and 2 (very true or often true). Mothers and fathers answered this questionnaire when the children were 3 years old, and for the purpose of this study, symptomatology levels of the anxiety, depression and aggressiveness (measured through anxious-depressed and aggressive behavior scales) were used for both mothers and fathers. The scales demonstrated high internal consistency in the sample: Maternal anxious-depressed, $\alpha = 0.81$; paternal anxious-depressed, $\alpha = 0.79$; maternal aggressive behavior, $\alpha = 0.80$ and paternal aggressive behavior, $\alpha = 0.81$.

Children's Behavior Questionnaire (CBQ) (Rothbart et al. 2001): The CBQ is a parent-reported questionnaire that evaluates the temperament of children between the ages of 3 and 7. It has a 7 option Likert response format, ranging from 1 ("extremely untrue of your child") to 7 ("extremely true of your child"), plus a response choice of "not applicable" when parents have not observed this situation. The items measure 15 dimensions of child temperament, structured in 3 second-order scales: surgency, negative affect and effortful control. The surgency scale includes the dimensions of activity level, high intensity pleasure, impulsivity and approach/positive anticipation. The negative affect scale includes the dimensions of anger/

frustration, discomfort, soothability/falling reactivity, sadness, and shyness. The effortful control scale includes attentional focusing, inhibitory control, low intensity pleasure, perceptual sensitivity, and smiling or laughter. This study used the Spanish version, which has been proven to provide reliable and valid scores to evaluate temperament in preschool children (De la Osa et al. 2013). There was high internal consistency in the study sample, with values at baseline equal to $\alpha = 0.74$ for surgency, $\alpha = 0.71$ for negative affect and $\alpha = 0.79$ for effortful control. The responses of parents at child ages 3, 4 and 5 were included in the analysis.

Data Analyses

We used the statistical software SPSS20 for Windows to perform data analysis. Since the data were collected using a double-phase screening design, all analyses were weighted in such a way that each subject was assigned an amount equal to the inverse probability of selection in the second phase of sampling. This weighted variable made it possible to generalize the results to the general population of origin. Independent variables included temperament scales (surgency, negative affect and effortful control), parental psychopathology (levels of symptoms in aggressive behavior and anxious-depressed scales), and the interaction of each temperament scale with parental aggressive behavior and parental anxiety or depression. The level of symptoms of the parents was defined with T scores. T score = 50 for normal clinical thresholds, T score = 65 for subclinical and T score = 70 for clinical.

The dependent variable was the ODD level, defined as the total number of symptoms of ODD in the diagnostic interview. Diagnoses in the DICA-PPYC were generated through computerized algorithms entered in EnDat, according to the DSM-IV-TR criteria. This helped to obtain both the diagnosis and the number of established symptoms of ODD, with which we dimensionally worked in this study.

Given the association between the variables analyzed in this work (ODD symptoms and levels of parental psychopathology) with children's sex (especially at an early age) and the presence of other psychological disorders, to avoid bias in the results, the statistical analyses have been adjusted according to gender and the presence of other comorbid disorders. This is because ODD prevalence is similar in boys and girls at an early age (Ezpeleta et al. 2014b), but different in older children (Munkvold et al. 2011) and ODD can be comorbid with other disorders (Lavigne et al. 2009).

The data were analyzed using negative binomial regression modeling, an alternative to Poisson regression to count data whose distribution exhibits over-dispersion. The

modeling was performed in three blocks: First, the control or adjustment variables were introduced. Second, we introduced temperament scores as measured by the CBQ and levels of parental psychopathology as measured by the ASR. Third, we included the interaction parameters of each scale of the CBQ with each scale of the ASR. To assess the relevance of all interaction parameters for each individual model, the following procedure was employed: a) when the chunk-test produced a value of $p > 0.10$, step 3 was omitted, and the main effects from step 2 were analyzed; b) when the test for combined interactions produced a value of $p \leq 0.10$, indicating the presence of significant interactions, the interactions were analyzed individually to determine which were significant, and only those that had a significant effect were retained in the model and tested.

Since the objective of this work is to screen for any possible interaction term, rather than testing for a hypothesized specific interaction, the p value to value interaction terms has been fixed at $p < 0.10$ to avoid low statistical power and sensitivity (Kleinbaum et al. 2013). By simultaneously entering information from the paternal and maternal reports into the ASR, regression models could be obtained that indicated the specific contribution of each parent.

The data were analyzed using both cross-sectional and longitudinal analyses. The cross-sectional analysis obtained independent results for paternal and maternal levels of psychopathology at child age 3, as well as CBQ temperament scores and ODD symptoms at ages 3, 4 and 5. In the longitudinal analysis, predictor variables included child CBQ scores at age 3, as well as the interaction between child temperament and parental levels of psychopathology at that same age; the dependent variable was defined as the number of ODD symptoms at child age 5.

Results

Table 2 includes the descriptive (mean and standard deviation) for the CBQ and ASR scales. Table 3 contains the bivariate correlation matrix for all the measures used. Due to the large sample size, and therefore the high statistical power, many correlations with low effect size were statistically significant, so coefficients with moderate to good effect size were marked.

The first block of Table 4 contains the negative binomial regression valuing the association between CBQ and ASR scores (defined as independent variables in the model) and the number of ODD symptoms (dependent variable). The chunk test valuing the set of interaction terms achieved non-significant results ($p = 0.842$), so all the moderation effects between ASR and CBQ were excluded from the model and main effects were estimated and interpreted.

Table 2 Descriptives for the CBQ and ASR scales in the sample: means and standard deviations (SD)

| | Age 3; <i>n</i> = 550 | | Age 4; <i>n</i> = 540 | | Age 5; <i>n</i> = 496 | |
|----------------------------------|-----------------------|------|-----------------------|------|-----------------------|------|
| | Mean | SD | Mean | SD | Mean | SD |
| CBQ-surgency | 4.34 | 0.80 | 4.21 | 0.82 | 4.23 | 0.83 |
| CBQ-negative | 3.78 | 0.75 | 3.64 | 0.72 | 3.68 | 0.77 |
| CBQ-effortful | 5.26 | 0.63 | 5.33 | 0.60 | 5.33 | 0.57 |
| ASR-anx-depressed (mother) | 6.32 | 4.24 | – | – | – | – |
| Clinical range (T-score < 70) | 5.6 % | | | | | |
| ASR-aggressive behavior (mother) | 4.08 | 3.49 | – | – | – | – |
| Clinical range (T-score < 70) | 4.5 % | | | | | |
| ASR-anx-depressed (father) | 5.16 | 3.90 | – | – | – | – |
| Clinical range (T-score < 70) | 5.1 % | | | | | |
| ASR-aggressive behavior (father) | 3.55 | 3.46 | – | – | – | – |
| Clinical range (T-score < 70) | 5.5 % | | | | | |

– Not assessed

Table 3 Correlation matrix for the variables of the study

| | Age 3; <i>n</i> = 550 | | | | | | | Age 4; <i>n</i> = 540 | | | |
|--------------------------|-----------------------|--------|-------|--------|-------|--------|--------|-----------------------|--------|-------|--------|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 2 | 3 | 4 | 5 |
| 1 CBQ-surgency | –0.16* | –0.25* | –0.02 | 0.01 | .04 | 0.04 | 0.10* | –0.09* | –0.26* | 0.04 | 0.06 |
| 2 CBQ-negative | | –0.06 | 0.15* | 0.10* | 0.07 | 0.04 | 0.26* | | –0.09* | 0.15* | 0.14* |
| 3 CBQ-effortful | | | –0.06 | –0.15* | 0.01 | –0.02 | –0.18* | | | –0.06 | –0.13* |
| 4 ASR-anx.-dep. (mother) | | | | 0.58*† | 0.23* | 0.20* | 0.16* | | | | 0.59*† |
| 5 ASR-aggress. (mother) | | | | | 0.23* | 0.20* | 0.19* | | | | |
| 6 ASR-anx.-dep. (father) | | | | | | 0.64*† | 0.15* | | | | |
| 7 ASR-aggress. (father) | | | | | | | 0.07 | | | | |
| 8 # of ODD-symptoms | | | | | | | | – | | | |

| | Age 4; <i>n</i> = 540 | | | Age 5; <i>n</i> = 496 | | | | | | |
|--------------------------|-----------------------|--------|--------|-----------------------|--------|-------|--------|-------|--------|--------|
| | 6 | 7 | 8 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 CBQ-surgency | 0.07 | 0.09* | 0.08 | –0.09* | –0.20* | 0.07 | 0.07 | 0.07 | 0.08 | 0.02 |
| 2 CBQ-negative | 0.00 | –0.02 | 0.32*† | | –0.11* | 0.12* | 0.08 | 0.04 | 0.08 | 0.30*† |
| 3 CBQ-effortful | –0.01 | –0.05 | –0.23* | | | –0.07 | –0.09* | –0.04 | –0.17* | –0.14 |
| 4 ASR-anx.-dep. (mother) | 0.23* | 0.21* | 0.13* | | | | 0.57*† | 0.23* | 0.20* | 0.08 |
| 5 ASR-aggress. (mother) | 0.23* | 0.20* | 0.22* | | | | | 0.22* | 0.16* | 0.12* |
| 6 ASR-anx.-dep. (father) | | 0.64*† | 0.11* | | | | | | 0.65*† | 0.15* |
| 7 ASR-aggress. (father) | | | 0.10* | | | | | | | 0.10* |
| 8 # of ODD-symptoms | | | | | | | | | | – |

* Significant correlation. † High effect size for the correlation (*l*_r ≥ 0.30)

The absence of relevant interaction parameters indicates that parents’ psychopathology levels (anxious-depressed and aggressive behavior) do not moderate the potential association between child temperament and ODD levels. At child age 3, high ODD severity levels were related to high scores on the temperamental dimension of negative

affect and low scores on the dimension of effortful control. Additionally, the ODD level was higher for children whose mothers had higher aggressive behavior scores and whose fathers had higher anxious-depressed levels.

The second block in Table 4 corresponds to the association between the CBQ scores (measured at child age 4),

Table 4 Association between child temperament, paternal psychopathology and their interaction in ODD levels: father + mother joint analysis

| | B | SE | 95 % CI for B | | χ^2 | <i>p</i> |
|------------------------------------|--------|-------|---------------|--------|----------|----------|
| Transversal 3 years-old | | | | | | |
| CBQ-surgency | 0.012 | 0.006 | -0.001 | 0.024 | 3.237 | 0.072 |
| CBQ-negative | 0.032 | 0.006 | 0.020 | 0.044 | 27.328 | <0.001 |
| CBQ-effortful | -0.018 | 0.007 | -0.031 | -0.005 | 7.306 | 0.007 |
| ASR-anx-depressed (mother) | 0.004 | 0.017 | -0.031 | 0.038 | 0.042 | 0.837 |
| ASR-aggressive behavior (mother) | 0.047 | 0.021 | 0.005 | 0.088 | 4.825 | 0.028 |
| ASR-anx-depressed (father) | 0.043 | 0.020 | 0.003 | 0.082 | 4.475 | 0.034 |
| ASR-aggressive behavior (father) | -0.025 | 0.023 | -0.069 | 0.019 | 1.255 | 0.263 |
| Chunk test for interactions | | | | | 7.23 | 0.842 |
| Transversal 4 years-old | | | | | | |
| CBQ-surgency | 0.007 | 0.007 | -0.007 | 0.021 | 1.029 | 0.310 |
| CBQ-negative | 0.047 | 0.007 | 0.033 | 0.061 | 44.629 | <0.001 |
| CBQ-effortful | -0.027 | 0.007 | -0.041 | -0.012 | 13.411 | <0.001 |
| ASR-anx-depressed (mother) | -0.019 | 0.020 | -0.058 | 0.021 | 0.879 | 0.348 |
| ASR-aggressive behavior (mother) | 0.075 | 0.023 | 0.030 | 0.120 | 10.579 | 0.001 |
| ASR-anx-depressed (father) | 0.017 | 0.022 | -0.027 | 0.060 | 0.563 | 0.453 |
| ASR-aggressive behavior (father) | 0.016 | 0.024 | -0.031 | 0.064 | 0.451 | 0.502 |
| Chunk test for interactions | | | | | 6.97 | 0.859 |
| Transversal 5 years-old | | | | | | |
| CBQ-surgency | 0.005 | 0.007 | -0.008 | 0.019 | 0.595 | 0.440 |
| CBQ-negative | 0.048 | 0.007 | 0.033 | 0.062 | 40.839 | <0.001 |
| CBQ-eff.; anx-dep:-father T = 50 | -0.268 | 0.087 | -0.438 | -0.098 | 9.528 | 0.002 |
| CBQ-eff.; anx-dep:-father T = 65 | -0.355 | 0.116 | -0.582 | -0.128 | 9.399 | 0.002 |
| CBQ-eff.; anx-dep:-father T = 70 | -0.384 | 0.126 | -0.630 | -0.138 | 9.368 | 0.002 |
| ASR-anx-depressed (mother) | -0.017 | 0.020 | -0.056 | 0.021 | 0.781 | 0.377 |
| ASR-aggressive behavior (mother) | 0.033 | 0.023 | -0.013 | 0.079 | 1.952 | 0.162 |
| ASR-anx-depressed (father) | 0.324 | 0.098 | 0.132 | 0.515 | 10.985 | 0.001 |
| ASR-aggressive behavior (father) | -0.004 | 0.026 | -0.056 | 0.047 | 0.028 | 0.867 |
| Inter.: CBQ-eff × Anx-Dep (father) | | | | | 8.97 | 0.003 |
| Chunk test for interactions | | | | | 19.43 | 0.079 |
| Longitudinal model | | | | | | |
| CBQ-surgency | 0.006 | 0.007 | -0.008 | 0.019 | 0.686 | 0.407 |
| CBQ-negative | 0.033 | 0.007 | 0.019 | 0.046 | 21.325 | <0.001 |
| CBQ-eff.; anx- dep:-father T = 50 | -0.182 | 0.092 | -0.363 | -0.001 | 3.897 | 0.048 |
| CBQ-eff.; anx- dep:-father T = 65 | -0.245 | 0.123 | -0.485 | -0.004 | 3.957 | 0.046 |
| CBQ-eff.; anx- dep:-father T = 70 | -0.287 | 0.143 | -0.567 | -0.006 | 4.008 | 0.045 |
| ASR-anx-depressed (mother) | -0.015 | 0.019 | -0.053 | 0.022 | 0.657 | 0.418 |
| ASR-aggressive behavior (mother) | 0.023 | 0.023 | -0.022 | 0.068 | 1.009 | 0.315 |
| ASR-anx-depressed (father) | 0.235 | 0.103 | 0.033 | 0.438 | 5.174 | 0.023 |
| ASR-aggressive behavior (father) | 0.008 | 0.025 | -0.041 | 0.057 | 0.092 | 0.762 |
| Inter.: CBQ-eff×Anx-Dep.(father) | | | | | 4.20 | 0.040 |
| Chunk test for interactions | | | | | 13.11 | 0.041 |

the ASR scores with the criterion number of ODD symptoms at child age 4. At this age, the block with the interaction parameters also obtained non-significant results ($p = 0.859$), and it was excluded from the final model. At this age, the highest levels of ODD were registered for children with high negative affect and low effortful control.

Regarding parental psychopathology, only maternal aggressive behavior was related to higher levels of ODD symptoms at child age 4.

The third block of Table 4 contains the regression for the predictor CBQ scores at child age 5, ASR scores and the criterion number of ODD symptoms at child age 5.

Since a value of $p = 0.79$ was obtained in the chunk test for the block of interaction parameters, specific interaction terms were explored to determine which ones achieved significant results to be retained in the final model. A statistically significant result was achieved for the term effortful control by fathers' anxious-depressed level ($p = 0.003$) so simple effects were estimated and interpreted for the effortful control scale across three paternal anxious-depressed levels (values $T = 50$, $T = 65$ and $T = 70$, corresponding to normal clinical thresholds, sub-clinical and clinical). The final results showed that at child age 5, higher levels of ODD symptoms were detected in children with high scores on the negative affect scale and low scores on the scale relating to effortful control. Additionally, the effect of effortful control on ODD severity increased as paternal T-scores in anxious-depressed levels increased (as a consequence of the interaction).

The lower block of Table 4 shows the results of the longitudinal analysis, which assessed the association between child temperament scores at age 3, parental psychopathology levels (also recorded at child age 3), and ODD levels at child age 5. Again, there was a significant interaction between the effortful control scale of temperament and paternal ASR anxious-depressed scores ($p = 0.040$). The final model showed that at child age 5, ODD levels were higher for children who at the start of preschool had scored higher on negative affect and lower on effortful control (and this effect of temperament on ODD increased according to paternal anxious-depressed levels).

Discussion

The results indicate that during the preschool period, the temperamental traits of negative affect and effortful control are cross-sectionally associated with higher levels of symptoms of ODD in children. Furthermore, this relationship is moderated by levels of paternal depression and anxiety toward the end of the preschool period (at child age 5). The level of the temperamental traits of negative affect and effortful control at age 3 were statistical predictors of ODD levels at age 5, and the levels of paternal anxiety and depression moderated the strength of the relationship. On the other hand, cross-sectional models indicated that maternal psychopathology (specifically, symptoms of depression, anxiety and aggression) does not moderate the relationship between child temperament and ODD level.

The current study suggests that levels of negative affect and low effortful control influence the development of oppositional defiant disorder in preschoolers, a result that concurs with previous findings from several authors (Burke

et al. 2010; Dougherty et al. 2011; Eisenberg et al. 2009; Lavigne et al. 2012; Martel et al. 2012; Stringaris et al. 2010; Valiente et al. 2003). Additionally, we arrived at a number of more nuanced conclusions regarding the influence of parental symptomatology of anxiety, depression and aggressive behavior on children's ODD symptoms. First, we found that between child ages 3 and 5 there is a differential effect of parental aggressive and anxious-depressed behavior on children's ODD levels. Specifically, maternal high aggressive behavior influences the child's ODD level, a result that is consistent with several studies linking maternal negativity and anger with behavioral problems in children (Chen et al. 2014; Goelman et al. 2014). Our results also coincide with those reported by authors such as Breaux et al. (2013), Davé et al. (2008), Kashdan et al. (2004), Meadows et al. (2007) and Weitzman et al. (2011), who have argued that children of parents with depression and anxiety may be more likely to have behavioral problems and develop oppositional defiant disorder.

Our findings regarding the specific moderating role of parental psychopathology in the relationship between child temperament and ODD levels is of particular importance, as it differentially highlights the role of each parent. Specifically, only paternal symptoms of depression and anxiety moderated the relationship between child temperament and ODD symptoms, whereas none of the maternal symptoms examined (aggression, depression and anxiety) served a moderating role. In light of empirical evidence regarding the impact of maternal psychopathology on self-regulation and behavior problems in children (Chen et al. 2014; Crawford et al. 2011; Gartstein et al. 2013; Goelman et al. 2014), we expected maternal psychopathology to be a significant moderator of the relationship between child temperament and ODD levels. Nevertheless, in our study, only paternal symptoms of depression and anxiety interacted with the specific temperamental dimension of low effortful control.

These results are in accordance with the findings of several authors, who argue that paternal psychopathology may have a more serious impact on a child's psychological functioning than maternal psychopathology (Cimino et al. 2014; Lovejoy et al. 2000). One explanation for this phenomenon focuses on the different roles that fathers and mothers play when their children are in preschool. For instance, research suggests that mothers spend more time with their children than fathers do during infancy, and much of this time is spent establishing limits. In comparison, fathers spend more time playing with their children, and as a result experience fewer difficulties and conflicts with the children than mothers (Driscoll and Pianta 2011; Weaver et al. 2014). Particularly toward the end of the preschool period, paternal involvement in child

development intensifies, as fathers become closer to their children, engaging with them and behaving like a playmate (John et al. 2012).

The presence of an involved father can have a major positive impact on a young child. In fact, there is evidence that this relationship is critical to a child's development, promoting higher self-esteem and self-regulation (John et al. 2012; Sarkadi et al. 2008). By contrast, children with little paternal support would have more difficulty regulating their negative emotions (Hurrell et al. 2015). In this vein, fathers with symptoms of psychopathology tend to show a reduced response level to their children, which can be a risk factor for the occurrence of maladaptive behaviors (Elgar et al. 2007). Depressed fathers in particular present a reduced ability to regulate the emotions of their children, which could affect the development of child temperament (Lovejoy et al. 2000). In this regard, depressed fathers would display more negative behaviors towards their children and reductions in monitoring, and this overly-permissive behavior would have an impact on child behavioral problems (Childs et al. 2014; Jewell et al. 2008). It is likely that a permissive father would be unable to properly control his child's behavior or prevent possible maladaptive behaviors (Braza et al. 2013). In theory, effortful control should increase during the preschool years (Liang et al. 2013) at the same time, there is evidence that having a father who is overly permissive and who demonstrates little acceptance or paternal engagement is a risk factor for poor self-regulation and effortful control (Braza et al. 2013; Liang et al. 2013).

The main limitations of the present study lie in the fact that a relatively low number of fathers provided complete responses to the Adult Self-Report compared to the number of mothers, and that all the data analyzed and interpreted was reported only by parents. Moreover, the study possesses a number of strengths: the availability of separate reports for psychopathology measures from fathers and mothers, performing longitudinal tests in a large and representative sample of preschoolers, measuring child psychopathology through diagnostic interview and the statistical control of all the analyses of other comorbid disorders with symptoms that differ from ODD symptoms (that is, the empirical association obtained between temperament, parental symptomatology and ODD levels can be specifically attributed to this diagnostic condition). These contributions in the methodological area involve an improvement compared to previous researches carried out in small-sized sample and with data reported only by mothers.

The results of this study have important implications for the prevention and treatment of ODD symptoms. While much remains to be learned about the early risk factors for oppositional defiant disorder, the present study suggests

that evaluating early temperamental traits in children may be an important first step, since the presence of high levels of negative affect and low levels of effortful control may be an early indicator of children at risk for developing ODD levels. Of particular importance is the fact that low effortful control is related to temperamental symptoms of ODD, as it raises the possibility of early intervention for ODD symptoms through the teaching of effortful control skills, as indicated by Lavigne et al. (2012).

Furthermore, it is important to address the moderating role of paternal symptoms of depression and anxiety, as few studies have focused on the influence of fathers in early child development. According to our findings, a child with low effortful control may be more or less likely to present ODD symptoms depending on whether his father suffers from mild, moderate or severe anxiety or depression. Evidently, this could have a number of consequences at the individual level (for children and for fathers) and at the family level. In terms of clinical evaluation, it is essential that clinicians integrate the family members of preschoolers who display behavioral or temperamental problems, inquiring in detail into present and past parental mental health. According to our results, it is very important to know about the father's mental health especially, focusing on the symptoms of depression and anxiety.

At the environmental level, it is important to consider that a child with a difficult temperament and symptoms of ODD may have an impact on the emotional state of the father. Evidence suggests that raising a child with ODD levels is a major challenge for mothers and fathers (Burke et al. 2008), but the fathers, particularly those who are involved in parenting, will face disciplinary obstacles when their children engage in difficult behaviors (Aviram et al. 2015). Furthermore, there exists evidence that child behavioral problems may actually affect negative parental emotionality and behavior to a greater extent than parenting attitudes affect children (Childs et al. 2014; Larsson et al. 2008; Pardini et al. 2008). Future studies will need to consider this child-to-father relationship, as it implies the possibility of a reciprocal effect of negative behavior and emotionality on mental health for children and fathers.

Finally, it is likely that fathers with higher levels of symptoms of depression and anxiety are probably more focused on their own difficulties and may be less available for their children. In terms of clinical intervention, then, fathers should be encouraged to address and treat their own symptomatology first, thus enhancing the mental health of the whole family unit.

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7.2 Segundo trabajo empírico: artículo aceptado

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Para: Zayra Antunez <zayraantunez@uach.cl>;

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Running Head: Parental Psychopathology and Child ODD

Reciprocity Between Parental Psychopathology and Oppositional Symptoms from Preschool to Middle Childhood

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Abstract

Objective: Oppositional Defiant Disorder (ODD) is a common disorder in preschool children. Evidence indicates that maternal and paternal psychopathology, particularly aggressive behavior and anxious-depressed symptoms, contributes to the development of this disorder. The latest research also suggests that ODD symptoms may exacerbate the mental health problems of parents. Our aim was to establish the existence of a reciprocal association between paternal and maternal psychopathology (aggression, depression and anxiety) and child ODD at age 3 and age 8, using a longitudinal design in a community sample of preschoolers.

Method: The sample included 331 children evaluated at ages 3 and 8 through questionnaires and a semi-structured diagnostic interview with parents. Parents also informed about their own psychopathology.

Results: At age 3 years, higher levels of ODD symptoms in girls were concurrently associated with maternal anxious/depressed symptoms and paternal aggressive behavior, and higher levels of ODD symptoms in boys were concurrently associated with maternal aggressive behavior. Longitudinally, for boys, higher levels of maternal anxious/depressed symptoms at age 3 predicted increases in ODD symptoms from age 3 to age 8. In addition, higher levels of ODD symptoms in boys from age 3 to age 8 predicted increases in fathers' anxious/depressive symptoms.

Conclusions: Children with ODD should be evaluated and treated promptly, but efforts should be extended to their parents. Mothers' and fathers' mental health must be explored, since the psychopathologies of children and parents reciprocally affect each other.

Keywords:

Oppositional defiant disorder · parental psychopathology · preschool · reciprocal effects

1. Introduction

Oppositional defiant disorder (ODD) is described as a persistent and repetitive pattern of oppositional, defiant, disobedient and disruptive behaviors towards figures of authority, which persists for at least six months (American Psychiatric Association, 2013). The ODD profile is characterized by the association of high novelty seeking and displaying patterns of behavior characterized by emotional instability (Melegari et al., 2015). It also includes problems with acting out of spite and annoying and blaming others for the consequences of one's actions or problems, and is associated with a variety of impairments in interactions with others (Burke, Rowe, & Boylan, 2014). ODD is a common disorder in preschool children, with prevalence rates varying between 6.9% and 13.4% (Ezpeleta, de la Osa, & Doménech, 2014; Lavigne, Lebailly, Hopkins, Gouze, & Binns, 2009). Prevalence is similar in boys and girls at an early age (Ezpeleta, de la Osa, Granero, & Trepát, 2014), but in older children more boys than girls are affected (Demmer, Hooley, Sheen, McGillivray, & Lum, 2016; Munkvold, Lundervold, & Manger, 2011). Evidence has shown that the presence of ODD symptoms is associated with higher impairment in boys than in girls (Ezpeleta, de la Osa, Granero, et al., 2014) and, for example, the combination with conduct disorders is stronger for boys and the association with emotional disorders is stronger for girls (Rowe, Maughan, Pickles, Costello, & Angold, 2002). Girls are possibly more sensitive than boys to less parental warmth or more aversive behaviors on the part of their parents (Goodman et al., 2011). Nevertheless, girls might be more protected than boys against the onset of psychopathological symptoms, due to factors like their earlier physical maturation and better developed social and emotional skills compared to boys (Crick & Zahn-Waxler, 2003).

Numerous studies have shown a relationship between child ODD symptoms and parental psychopathology. Aggressive behavior exhibited by parents, particularly the mother, is likely to shape the externalizing behavior of children (Davies, Sturge-Apple, Cicchetti, Manning, & Vonhold, 2012). Regarding maternal mental health problems, previous research indicates a significant impact on child mental health. In particular, positive associations have been found between maternal negativity, hostility and detachment and child ODD (Bertino, Connell, & Lewis, 2012). Mothers with symptoms of depression may present evidence of higher rates of irritability and aggression (Goelman, Zdaniuk, Boyce, Armstrong, & Essex, 2014) and, depending on the severity of the symptoms, may increase or decrease behavioral problems in children (Nicholson, Deboeck, Farris, Boker, & Borkowski, 2011). Maternal depression is linked to higher levels of negative affect, externalizing problems and greater general psychopathology in children (Goodman et al., 2011), and less maternal warmth could

have an effect on child ODD levels (E. a Harvey & Metcalfe, 2012). In the study by Choe, Olson, and Sameroff (2014), maternal depressive symptoms at child age 3 predicted higher levels only in the externalizing behavior of boys at age 10. Even recent data has reported that children with behavioral problems who have a mother with more depressive symptoms exhibit fewer therapeutic changes after an intervention (Dempsey, McQuillin, Butler, & Axelrad, 2016). Paternal psychopathology also seems to have an impact on the development and behavior of children (Brown, McBride, Bost, & Shin, 2011; Goelman et al., 2014). Previous research indicates that fathers with depression and anxiety may also be significant predictors of behavioral problems and ODD symptoms in preschoolers (Breux, Harvey, & Lugo-Candelas, 2013; Gross, Shaw, Moilanen, & Wilson, 2008; Kashdan et al., 2004). Specifically, Harvey and Metcalfe (2012) found that fathers' depression at child age 3 predicted children's ODD symptoms at age 4 and recently Nath, Russell, Kuyken, Psychogiou and Ford (2016) found that higher paternal depressive symptoms at 9 months were significantly associated with children's conduct problems at 7 years old. In addition, fathers with aggressive behavior seem to have an impact on the development of aggressive and hostile behavior in children, increasing ODD symptoms (Davies et al., 2012; Trepát, Granero, & Ezpeleta, 2014).

Although research has been conducted into the effect of maternal and paternal psychopathology on child behavior problems and specifically on ODD, the evidence suggests that children's behavior also has a profound influence on parental psychopathology and behavior (Shaffer, Lindhiem, Kolko, & Trentacosta, 2013) and wellbeing (Davidov, Knafo-Noam, Serbin, & Moss, 2015). There is extensive support in the literature for the notion of children's behavioral problems affecting parenting style, parental functioning and family relations (Childs, Fite, Moore, Lochman, & Pardini, 2014; Combs-Ronto, Olson, Lunkenheimer, & Sameroff, 2009; Pardini, Fite, & Burke, 2008; Shaffer et al., 2013), but research has paid substantially less attention to potential bidirectional effects between children's disruptive behavior and parental mental health, such as anxiety and depressive symptoms or aggressive behavior (Gross, Shaw, Moilanen, et al., 2008).

Evidence suggests that the prevalence of clinical depression in parents caring for children with developmental disabilities increases significantly compared to parents of typically developing children. (Gallagher & Hannigan, 2014; Singer, 2006). The most problematic child behaviors would represent an increased risk of depression in parents (Gallagher & Hannigan, 2014; Resch, Elliott, & Benz, 2012). In particular, mothers with depression might be especially vulnerable, experiencing longer and more intense negative

affect in response to negative expressions in their children (Forbes et al., 2008). Meanwhile, mothers whose children have more behavioral or emotional problems have higher rates of depressive symptoms (Civic & Holt, 2000). Also, in middle childhood, maternal depression has been strongly related to subsequent increases in children's disruptive problems, specifically in boys of ages 5 to 6 (Gross et al., 2008).

Fathers have been widely underrepresented in the literature on parental psychopathology, and there is little evidence of the impact of children's psychopathology on their mental health. But there is some evidence that fathers' mental health can also be affected by their children's behavior. Kane and Garber (2004) found significant associations between paternal depression and the externalization of child conflict, and Harvey and Metcalfe (2012) found that paternal depression is tied to early ODD symptoms in children. According to Gross et al. (2008), higher levels of noncompliance at child age 2 have been significantly related to paternal depressive symptoms. Evidence also indicates that fathers may be distressed when their children are adolescents, due to their irritability and acting-out behaviors (Connell & Goodman, 2002).

Due to the lack of specific empirical evidence on the issue, the aim of this study is to establish the existence of a reciprocal association between paternal and maternal psychopathology (anxious-depressed symptoms and aggressive behavior) and child ODD symptoms at age 3 and age 8, using a longitudinal design in a community sample of preschoolers.

Based on research conducted up to the present, we made the following specific hypotheses: a) Higher levels of paternal and maternal psychopathology will be associated with higher levels of ODD in boys and girls at ages 3 and 8. b) Higher levels of ODD symptoms in boys and girls at age 3 will be associated with greater paternal and maternal psychopathology when these children are aged 8.

2. Method

2.1. Participants

The sample data are from of a longitudinal study of psychopathological risk factors, interactions and mechanisms underlying the development of psychopathology in early childhood, starting at age 3 (Ezpeleta, et al., 2014). Data were collected from participants using a double-phase design. In the first phase, 2,283 families with 3-year-old children were randomly selected from early-childhood schools in Barcelona ($N = 13,578$), of which 1,341 families were willing to participate (58.7%). 63 families were excluded due to difficulties understanding or using Spanish or Catalan, or because the children presented developmental

disorders such as autism spectrum disorder or intellectual disabilities, as they could have some difficulty responding appropriately to the assessment and could have impact on the outcomes of interest. Children with other medical problems were not excluded while they attended school normally and could respond without problems. In the second phase, to ensure the participation of children with possible behavioral problems, the parents of the remaining 1,278 children were screened by answering the Strengths and Difficulties Questionnaire (SDQ³⁻⁴) (Goodman, 1997). All families of children that screened positively (with a raw score ≥ 4 on the SDQ³⁻⁴ conduct problems scale, which corresponds to 90th percentile, or with a response option of 2 -certainly true- in any of the 8 DSM-IV ODD symptoms) were invited to participate ($n = 522$, 42%), and 235 (30%) cases that screened negatively were selected to continue in the study. The final sample included 622 children, 417 with a positive screening score and 205 with a negative one, with an average age of 3.76 ($SD = 0.32$), of which 310 were male (49.8%) and 554 were identified as Caucasian (89.1%), that is, white European people.

From the final sample of the project ($n=662$ children followed during the ages 3-8 years-old), all the subjects who possessed complete information for both the diagnostic interview and the analyzed questionnaires were selected and included in the statistical analysis of this study ($n=331$). Table 1 contains the main sociodemographic features of the sample analyzed in this work, concretely at the beginning of the follow-up (3 years-old). Table 1 also includes the distribution of the main DSM-IV-TR (American Psychiatric Association, 2000) disorders at ages 3 and 8 (disorders non included in this table registered very few or null prevalences). There were no statistically significant differences between subjects included in the final analysis or subjects excluded due to incomplete information in terms of sex ($p = .20$), ethnicity ($p = .13$) or socioeconomic status ($p = .23$).

2.2. Measures

2.2.1. Diagnostic Interview of Children and Adolescents for Parents of Preschool and Young Children (DICA-PPYC) (Reich & Ezpeleta, 2009): The DICA-PPYC is a semi-structured interview used to assess child psychopathology according to DSM-IV-TR criteria (American Psychiatric Association, 2000). It was adapted and validated for the Spanish preschool population, and the Spanish version presents adequate psychometric properties (Ezpeleta, de la Osa, Granero, Domènech, & Reich, 2011). In the present study, DICA-PPYC is answered by one of the two parents or both together, completing a single interview. The average administration time is approximately 50 minutes. We used data collected from the DICA-PPYC at child ages 3 and 8. As regards the respondents, at child age 3, 211 (63.7%)

mothers, 24 (7.3%) fathers and 96 (29.0%) both parents together, completed an interview. At child age 8, 241 (72.5%) mothers, 31 (9.4%) fathers and 59 (17.8%) both parents together answered the DICA-PPYC.

At each follow-up, the number of ODD symptoms was used as a measure of ODD level. Additionally, the following comorbid diagnoses with ODD were defined as covariates in the analysis: Attention-deficit/hyperactivity disorder, conduct disorder, depression, separation anxiety, general anxiety, specific phobias and social phobia. These correspond to those that epidemiological studies most strongly have related to the onset and course of ODD at early ages and during the childhood age (Harvey, Breaux, & Lugo-Candelas, 2016; Martín, Granero, & Ezpeleta, 2014; Stringaris & Goodman, 2009).

2.2.2. Adult Self-Report (ASR) (Achenbach & Rescorla, 2003): The ASR is a questionnaire that evaluates psychopathology levels in adults between ages 18 and 59. It features 126 items that inquire about the respondent's own behavior over the past six months, plus some items related to interpersonal relationships, work and educational matters. The measurement scale is ordinal, with 3 response options: 0 (not true), 1 (somewhat or sometimes true) and 2 (very true or often true). Mothers and fathers answered this questionnaire when the children were 3 and 8 years old, and for the purpose of this study, the anxiety-depression and aggressiveness scales were used for both mothers and fathers. The scales demonstrated high internal consistency in the sample (the first columns in Table 2 contain Cronbach's alpha at child ages 3 and 8).

2.3. Procedure

The study was approved by the ethics committee of the authors' home institution (*Comissió d'Ètica en l'Experimentació Animal i Humana, Universitat Autònoma de Barcelona*: CEEAH 1385). Families of children were contacted through recruitment at schools and invited to participate when the children were 3 years old; both parents and teachers were informed in detail about the study at the time of recruitment. After obtaining written parental consent, parents were asked to answer the SDQ³⁻⁴ at home and return the completed form to the school. Families who met the selection criteria were contacted by phone to be included in the study, and consenting parents participated in the diagnostic interview (DICA - PPYC) at their child's school. The other questionnaires were answered by the parents at home and then returned to the school.

The DICA-PPYC was administered by interviewers previously trained in its use and in that of the other instruments applied. The team of interviewers consisted of psychologist with previous knowledge of the range of potential diagnoses and symptom clusters. Specifically,

Ph. D. clinical psychologists, Ph.D. students in clinical psychology, psychologists with masters' degrees and psychology students in their last year. The interviewers were trained on a one week intensive program and included an overview of developmental psychology, children's psychopathology and interviewing skills. The characteristics of the symptoms and disorders, the methods for identifying these characteristics, and how to code the symptoms were also included. Subsequently, future interviewers completed a longer practical training period, mainly with role playing, listening and coding of audio-recorded real interviews followed by observation and coding of live interviews. The criterion for being ready for the field was to obtain a mean agreement with an expert kappa ≥ 0.80 for all the questions in at least eight live interviews. The whole training process lasted about three months.

2.4. Statistical analysis

Data were analyzed with Stata13 for Windows. Due to the double phase sampling, and the sample analyzed was selected through a screening procedure (all positively evaluated cases were invited to participate and only 30% of cases that screened negatively), sample weights were assigned and used to correct for the unequal probabilities of selection: Each child was weighted with the reciprocal of their probability of selection in the second phase of the sampling thus enabling the generalization of the results to the original general population.

Structural equation modeling (SEM) was conducted to test the hypothesized pathway model that specifies the relationship between parental psychopathology measures (anxiety-depression and aggressive scores) and the child's number of ODD symptoms. Since a moderator effect of sex was expected, children's sex was defined as a group variable in the pathway. The model was also adjusted to the presence of other comorbid disorders different to ODD. The Maximum Likelihood method of parameter estimation was used and goodness-of-fit was evaluated using the usual statistics: the Root Mean Square Error of Approximation (RMSEA), Bentler's comparative Fit Index (CFI), the Tucker-Lewis Index (TLI) and the Standardized Root Mean Square Residual (SRMR). Adequate model fit was considered for $RMSEA < .08$, $TLI > .90$, $CFI > .90$ and $SRMR < .10$.

3. Results

3.1. Description of the study variables

Table 2 contains the distribution of the variables included in the SEM (range, mean and standard deviation) and Table 3 contains the matrix correlation (coefficients in this Table correspond to Pearson product-moment correlations) between this set of measures for the total sample and stratified by the children's gender.

--- Insert Tables 1-2-3 ---

3.2. Structural equation model

Figure 1 shows the SEM measuring the underlying process between parental psychopathology and ODD levels (Table 4 contains complete standardized coefficients with significance test and 95% confidence interval). Goodness-of-fit of the new model was achieved: RMSEA=.065, CFI=.974, TLI=.935 and SRMR=.031. To assess the potential differences in the SEM due to gender, measurement invariance across the groups was tested by comparing the previous unconstrained model with a new model in which structural and measurement coefficients and intercepts were constrained to be equal across boys and girls. Since the χ^2 difference statistic revealed a significant difference between both models (constrained versus unconstrained: $\chi^2=101.5, p=.001$), a lack of invariance across gender and consequently a moderator effect by child's sex was assumed.

Figure 1 includes the standardized coefficients obtained in the SEM, with straight-lines and black-font color representing statistically significant associations and dotted-lines and grey font color indicating non-significant indexes. The pathway diagram for girls showed that: a) Cross-sectionally, at age 3 the children's number of ODD symptoms was positively related to the parental psychopathological levels in anxiety-depression and aggression behavior in the mother (and only with aggressive behavior in the father) while at age 8 no relationship emerged between child's ODD level and parental symptom levels b) Longitudinally, no predictive relationship was found (only auto-correlation coefficients were significant).

The pathway diagram for boys showed that: a) Cross-sectionally, at age 3 the number of ODD symptoms was higher for children whose mothers reported higher aggressive behavior levels, while at age 8 no association between ODD intensity level and parental psychopathology was found; b) Longitudinally, the higher the number of ODD symptoms at age 3, the higher the father's anxiety-depression level at child age 8, and higher levels in the mother's anxiety-depression measure at child age 3 significantly predicted high ODD levels five years later.

4. Discussion

The present study aimed to investigate the reciprocal association between paternal and maternal psychopathology and child ODD. A first hypothesis was that higher levels of paternal and maternal psychopathology would be associated with higher levels of ODD in children at age 3 and 8. The data confirm this relationship only at 3 years, because we found that boys of mothers with higher levels of anxiety and depression at age 3 had higher levels of ODD symptoms at age 8. Our results also indicate that patterns of association at age 3 were

different for boys and girls in relation to their mothers and fathers. For girls there is an association between ODD levels and anxiety, depression and aggression behavior in the mother, but only with aggressive behavior in the father. In turn, in boys, there is only an association between ODD levels and levels of aggressive behavior in the mother.

A second hypothesis was that higher levels of ODD at child age 3 would be associated with greater paternal and maternal psychopathology at child age 8. This was supported only partially, because our findings indicate that fathers of boys with higher levels of ODD symptoms at age 3 suffer higher levels of anxiety and depression five years later. Our results suggest that only for boys would levels of ODD at 3 years predict levels of anxiety and depression in fathers (not mothers) when these children are 8 years old.

In that respect, evidence suggests that a child with behavioral problems, specifically with ODD symptoms may have an impact on the emotional states and mental health problems of parents and that raising a child with ODD is a major challenge for mothers and fathers (Burke, Pardini, & Loeber, 2008; Charles, Bywater, Edwards, Hutchings, & Zou, 2013). On the other hand, there is also evidence that child behavioral problems may actually affect negative parental emotionality and behavior to a greater extent than parenting attitudes affect children (Childs et al., 2014; Larsson, Viding, Rijdsdijk, & Plomin, 2008; Pardini et al., 2008). Particularly, interactions with a troublesome child could exert mounting pressure on the mother (Forbes et al., 2008) and in middle childhood, evidence was found for bidirectional effects between boys' antisocial behavior and maternal depressive symptoms, with these bidirectional effects being most pronounced during the transition to elementary school and the transition to adolescence (Gross, Shaw, & Moilanen, 2008).

Regarding the influence of child ODD on paternal psychopathology, there are practically no studies indicating the effect child psychopathology could have on the mental health of their fathers, although some studies suggest that different facets of child psychopathology seem to exhibit unique bidirectional effects with specific parenting behaviors across development, such as parenting behaviors and parental warmth (Pardini, 2008). The study by Gross, Shaw, Moilanen, et al. (2008) is one of the first to present empirical evidence that fathers' depressive symptoms are bidirectionally associated with their children's behavior in early childhood and to suggest a reciprocal process between parental depression and child behavior. The evidence suggests that children's behavioral problems have an effect on parenting that is as strong as the influence that parenting may have on changes in child behavior (Larsson et al., 2008; Pardini, 2008). Fite, Colder, Lochman, and Wells (2006) suggest that parents of children with behavioral problems feel unable to

discipline their children, which tends to decrease their closeness to them and their supervision. Therefore, when children present challenging behavior, parents may have less effective parenting strategies and lose their self-confidence in these skills, thus worsening their depressive symptoms (Goodman & Gotlib, 1999; Nelson, Hammen, Brennan, & Ullman, 2003). Larsson et al. (2008), propose that a portion of the effect of parental negativity on later child antisocial behavior could be attributed to environmental factors, but the child's genetically influenced antisocial behavior evoked future changes in parental negativity.

One explanation for this phenomenon focuses on the roles that fathers play with their children, particularly with boys. Research suggests that fathers spend less time with their children than mothers, but a lot of this time is spent playing, so they would have a better relationship with them, experiencing for instance, fewer difficulties and conflicts with their children than mothers (Driscoll & Pianta, 2011; Weaver, Shaw, Crossan, Dishion, & Wilson, 2014). Consequently, children that present very early behavioral problems may be more responsive to the quality of their relationships with their fathers than with their mothers (Weaver et al., 2014). Paternal involvement in children's development intensifies towards the end of the pre-school period, narrowing the relationship with their children. This suggests that fathers consider physical proximity and active play to be important components of their involvement with their child (John, Halliburton, & Humphrey, 2012) and, as with mothers, everyday engagement with a child who is hard to manage may challenge fathers' abilities to maintain positive nonconflictual interactions with their children (Aviram, Atzaba-poria, Pike, Meiri, & Yerushalmi, 2015).

Furthermore, there is evidence that the effect on the father is different depending on the sex of the child. There are significant differences in the way that mothers and fathers experience closeness in their relationships with their boys and girls (Driscoll & Pianta, 2011). For example, Driscoll and Pianta (2011) found that fathers experience more nearness in their relationships with their daughters than with their sons. In the light of our findings, we hypothesize that the tendency of fathers to interact more with their children through playful activities creates greater closeness with their male children. However, this relationship is disturbed by the difficult behavior of children with ODD, affecting the mental health of their fathers. This would eventually be a reciprocal relationship, since depressed fathers would display more negative behaviors towards their children and less monitoring, and this overly-permissive behavior would have a direct impact on their children's behavioral problems, especially in preschoolers (Braza et al., 2013; Childs et al., 2014; Jewell, Krohn, Scott, Carlton, & Meinz, 2008)

Additionally, the aforementioned results are aligned with findings by several authors who argue that aggressive, hostile or violent behavior in the mother or father has a major impact on the mental health of their children, particularly preschoolers, influencing the onset of ODD symptoms (Goelman et al., 2014; Nantel-Vivier, Pihl, Côté, & Tremblay, 2014; Trepát et al., 2014). Furthermore, recent data have indicated that maternal anxious and irritable temperaments and paternal cyclothymic temperaments may have influence on ODD symptoms in children and adolescents age 6 to 18 years (Bilgiç et al., 2016).

Some previous research has studied the effects of maternal depression on children and it is reported that this is more strongly associated with problems in girls than in boys (Goodman et al., 2011; Cummings, Keller, & Davies, 2005). Girls may be more sensitive than boys to less warmth or more aversive behavior (Goodman et al., 2011). On the other hand, Hummel and Kiel (2014) argue that mothers with higher depression symptoms are more withdrawn with their boys. Additionally, our results indicate that the three-year old boys of mothers with higher levels of anxiety and depression present higher levels of ODD symptoms at 8 years of age, which supports ideas concerning the influence of mothers' mental health on their boys; it also supports the idea that mothers with anxiety and depression are more distant with their boys. Beyond any doubt, this may have consequences on development, such as the appearance of an ODD. Furthermore, it has been proposed that fathers and mothers with depression and anxiety are more focused on their own difficulties, and probably have less time to worry about their children (Forbes et al., 2008; Gross, Shaw, & Moilanen, 2008; Harvey & Metcalfe, 2012; Kane & Garber, 2004).

Because most longitudinal studies on bidirectional parent-child influences have focused on brief time periods (Pardini, 2008) and have not considered possible gender differences (Hipwell et al., 2008), the principal strength of the present study is that it examines the interplay between parental psychopathology and ODD symptoms across the preschool years and until age 8, making it possible to understand the development of ODD from preschool to middle childhood and its influence on the mental health of parents. This study included a large, representative longitudinal sample, and measured child psychopathology through diagnostic interviews. This study has some limitations as well and these should be considered when interpreting their results. One of the drawbacks of this study is that fewer fathers than mothers provided complete responses to the Adult Self-Report, which reduced our sample size, since we have only used cases with complete information. Another limitation of this study is that all data about children's ODD symptoms came from parent reports only. Furthermore, we have examined the symptoms of ODD and although we

have controlled this factor in the analyzes, it must be taken into account that there are shared symptoms between ODD and other disorders, so the generalization of these findings should be done with caution. Regarding the parental psychopathology measures, there were based on parents' self-reports of their symptoms, which were not clinically diagnosed. Finally, the SES of the sample was higher than that of the general population and this could have led to bias and, so that this must also be considered for generalization purposes.

The results of this study have important implications for the prevention and treatment of ODD. According to our findings, it is important to detect a child with ODD symptoms, and to consider a different approach to treatment for girls and boys, as the evidence indicates that both manifest ODD differently (Munkvold et al., 2011). It is also essential for clinicians to inquire into the mental health of parents, and also integrate fathers, who tend to engage less in the treatment of children. Nowadays there is evidence of treatments that include parents and that can significantly improve the behavior of children with ODD, such as Parent-Child Interaction Therapy (PCIT) (Eyberg, Nelson, & Boggs, 2008). This therapy works with parent-child interactions through play, allowing for both a more caring relationship between them and for parents to learn discipline strategies (Ferro, Vives, & Ascanio, 2010). Authors such as Abrahamse et al. (2012) and Niec, Barnett, Prewett, & Shanley Chatham (2016) have argued that with PCIT fathers can make great progress in their relationship with their children and benefit from treatment as much as mothers. Helping parents to interact with their children and build parenting skills benefits both children and the parents' own mental health (Barth, 2005).

On the other hand, with regard to the mental health of parents, it would be interesting to conduct separate interventions for mothers and fathers, as our results indicate that they are affected differently by their children's symptomatology. It is important to address the role of paternal depression and anxiety, as few studies have focused on the influence of fathers on child development and even less on the influence of children on their fathers. Evidently, a child with oppositionality symptoms may have an impact on the emotional states of parents, and according to our findings, mainly fathers. Fathers should be encouraged to address and treat their own psychopathology, thus enhancing the mental health of the whole family unit.

Conflict of interest

The authors declare that there is no conflict of interest.

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Table 1. Descriptive (sociodemographic and clinical characteristics) of the sample ($n=331$).

| Sociodemographic | | 3 years-old | | *DSM4 disorders | 3 yrs-old | 8 yrs-old |
|------------------------------------|------------------|-------------|-------|----------------------|-----------|-----------|
| Age (years) | <i>Mean (SD)</i> | 3.29 | 0.45% | Disruptive disorders | 6.9% | 13.1% |
| Sex; <i>n (%)</i> | <i>Female</i> | 174 | 52.6% | ADHD | 4.4% | 9.4% |
| Socioeconomic status; <i>n (%)</i> | <i>High</i> | 117 | 35.3% | Oppositional defiant | 4.4% | 6.0% |
| | <i>Mean-high</i> | 113 | 34.1% | Conduct disorder | 0.5% | 0.0% |
| | <i>Mean</i> | 46 | 13.9% | Depressive disorders | 0.2% | 1.2% |
| | <i>Medio-low</i> | 40 | 12.1% | Anxiety disorders | 7.8% | 10.3% |
| | <i>Low</i> | 15 | 4.5% | Separation anxiety | 1.2% | 1.6% |
| Ethnicity; <i>n (%)</i> | <i>White</i> | 309 | 93.4% | Generalized anxiety | 0.0% | 1.2% |
| | <i>Hispanic</i> | 12 | 3.6% | Specific phobia | 3.5% | 6.7% |
| | <i>Other</i> | 10 | 3.0% | Social phobia | 2.3% | 1.2% |

Note. SD: standard deviation. *Weighted prevalences

Table 2. Distribution of the variables of the study: means and standard deviations (SD).

| | | Mother: Anx-depres. | Mother: aggressive | Father: Anx-depres. | Father: aggressive | Child: ODD-symptoms |
|----------------------|-------|------------------------|-----------------------|------------------------|-----------------------|------------------------|
| Cronbach's- α | Age 3 | .81 | .79 | .75 | .80 | .66 |
| | Age 8 | .80 | .79 | .77 | .81 | .73 |
| Girls; $n=174$ | Age 3 | | | | | |
| | Mean | 5.88 | 3.45 | 4.75 | 3.10 | 1.16 |
| | SD | 3.79 | 3.29 | 3.53 | 3.30 | 1.47 |
| | Min | 0 | 0 | 0 | 0 | 0 |
| | Max | 20 | 16 | 22 | 16 | 7 |
| | Age 8 | | | | | |
| | Mean | 5.22 | 2.89 | 4.57 | 2.71 | 0.93 |
| | SD | 3.53 | 2.99 | 3.52 | 3.04 | 1.40 |
| | Min | 0 | 0 | 0 | 0 | 0 |
| | Max | 20 | 17 | 27 | 15 | 7 |
| Boys; $n=157$ | Age 3 | | | | | |
| | Mean | 6.53 | 4.33 | 5.20 | 3.50 | 0.68 |
| | SD | 4.54 | 3.41 | 3.65 | 3.32 | 1.14 |
| | Min | 0 | 0 | 0 | 0 | 0 |
| | Max | 22 | 17 | 22 | 14 | 6 |
| | Age 8 | | | | | |
| | Mean | 5.63 | 3.41 | 4.31 | 2.66 | 0.93 |
| | SD | 4.19 | 3.18 | 3.28 | 3.04 | 1.55 |
| | Min | 0 | 0 | 0 | 0 | 0 |
| | Max | 22 | 15 | 18 | 14 | 7 |

Note. SD: standard deviation. ODD: oppositional

Table 3. Correlation matrix for the variables of the study: Pearson product-moment coefficients.

| | Girls (n=174) | | | | | | | | | | Boys (n=157) | | | | | | | | | |
|----------------------------|---------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------|------------|------------|------------|------------|------------|------------|------------|--|--|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 1 Age 3: Mother: anx-dep. | .57 | .22 | .18 | .24 | .59 | .35 | .11 | .07 | .10 | .50 | .18 | .14 | .01 | .60 | .50 | .00 | .00 | .22 | | |
| 2 Age 3: Mother: aggress. | | .22 | .21 | .23 | .39 | .57 | .08 | .04 | .06 | | .13 | -.01 | .23 | .28 | .62 | .09 | -.08 | .14 | | |
| 3 Age 3: Father: anx-dep | | | .63 | .14 | .14 | .15 | .55 | .41 | .14 | | | .62 | .09 | .17 | .16 | .63 | .54 | .10 | | |
| 4 Age 3: Father: aggress. | | | | .15 | .17 | .09 | .40 | .63 | .10 | | | | -.07 | .11 | .00 | .46 | .69 | .05 | | |
| 5 Age 3: Child: ODD-symp. | | | | | .18 | .14 | .11 | .15 | .28 | | | | | .02 | .04 | .18 | .00 | .32 | | |
| 6 Age 8: Mother: anx-dep. | | | | | | .50 | .17 | .14 | .04 | | | | | | .58 | .17 | .07 | .17 | | |
| 7 Age 8: Mother: aggress. | | | | | | | .21 | .13 | .03 | | | | | | | .11 | -.02 | .18 | | |
| 8 Age 8: Father: anx-dep | | | | | | | | .58 | .15 | | | | | | | | .55 | .13 | | |
| 9 Age 8: Father: aggress. | | | | | | | | | .15 | | | | | | | | | .12 | | |
| 10 Age 8: Child: ODD-symp. | | | | | | | | | -- | | | | | | | | | -- | | |

Note. Bold: significant correlation.

Table 4. Results of the SEM (standardized coefficients; $n=311$).

| | | | Coeff | SE | t | p | 95% CI (coeff) | | |
|----------------|----------------|----------------|-------------|--------|--------|--------|----------------|-------|-------|
| ODD-8 | MotherAnxDep-3 | <i>Girl</i> | 0.048 | 0.0904 | 0.53 | 0.597 | -0.129 | 0.225 | |
| | | <i>Boy</i> | 0.251 | 0.0808 | 3.11 | 0.002 | 0.093 | 0.410 | |
| | MotherAggre-3 | <i>Girl</i> | -0.039 | 0.0911 | -0.43 | 0.667 | -0.218 | 0.139 | |
| | | <i>Boy</i> | -0.060 | 0.0834 | -0.72 | 0.474 | -0.223 | 0.104 | |
| | FatherAnxDep-3 | <i>Girl</i> | 0.104 | 0.0959 | 1.08 | 0.28 | -0.084 | 0.291 | |
| | | <i>Boy</i> | 0.013 | 0.0904 | 0.14 | 0.886 | -0.164 | 0.190 | |
| | FatherAggre-3 | <i>Girl</i> | 0.006 | 0.0962 | 0.06 | 0.948 | -0.182 | 0.195 | |
| | | <i>Boy</i> | 0.029 | 0.0897 | 0.33 | 0.744 | -0.146 | 0.205 | |
| | ODD-3 | <i>Girl</i> | 0.268 | 0.0760 | 3.53 | <0.001 | 0.119 | 0.417 | |
| | | <i>Boy</i> | 0.320 | 0.0696 | 4.60 | <0.001 | 0.184 | 0.456 | |
| | MotherAnxDep-8 | MotherAnxDep-3 | <i>Girl</i> | 0.539 | 0.0683 | 7.90 | <0.001 | 0.405 | 0.673 |
| | | | <i>Boy</i> | 0.616 | 0.0602 | 10.24 | <0.001 | 0.498 | 0.734 |
| MotherAggre-3 | | <i>Girl</i> | 0.077 | 0.0757 | 1.01 | 0.312 | -0.072 | 0.225 | |
| | | <i>Boy</i> | -0.033 | 0.0729 | -0.45 | 0.653 | -0.176 | 0.110 | |
| ODD-3 | | <i>Girl</i> | 0.037 | 0.0640 | 0.58 | 0.563 | -0.088 | 0.162 | |
| | | <i>Boy</i> | 0.016 | 0.0630 | 0.26 | 0.796 | -0.107 | 0.140 | |
| MotherAggre-8 | MotherAnxDep-3 | <i>Girl</i> | 0.046 | 0.0779 | 0.59 | 0.557 | -0.107 | 0.198 | |
| | | <i>Boy</i> | 0.241 | 0.0656 | 3.68 | <0.001 | 0.113 | 0.370 | |
| | MotherAggre-3 | <i>Girl</i> | 0.539 | 0.0699 | 7.72 | <0.001 | 0.402 | 0.676 | |
| | | <i>Boy</i> | 0.516 | 0.0624 | 8.27 | <0.001 | 0.394 | 0.639 | |
| | ODD-3 | <i>Girl</i> | 0.002 | 0.0657 | 0.03 | 0.977 | -0.127 | 0.131 | |
| | | <i>Boy</i> | -0.085 | 0.0591 | -1.43 | 0.152 | -0.201 | 0.031 | |
| FatherAnxDep-8 | FatherAnxDep-3 | <i>Girl</i> | 0.493 | 0.0762 | 6.47 | <0.001 | 0.343 | 0.642 | |
| | | <i>Boy</i> | 0.527 | 0.0687 | 7.67 | <0.001 | 0.392 | 0.662 | |
| | FatherAggre-3 | <i>Girl</i> | 0.089 | 0.0824 | 1.08 | 0.282 | -0.073 | 0.250 | |
| | | <i>Boy</i> | 0.141 | 0.0744 | 1.89 | 0.050 | 0.005 | 0.287 | |
| | ODD-3 | <i>Girl</i> | 0.031 | 0.0647 | 0.48 | 0.633 | -0.096 | 0.158 | |
| | | <i>Boy</i> | 0.141 | 0.0587 | 2.41 | 0.016 | 0.026 | 0.256 | |
| FatherAggre-8 | FatherAnxDep-3 | <i>Girl</i> | 0.011 | 0.0766 | 0.14 | 0.886 | -0.139 | 0.161 | |
| | | <i>Boy</i> | 0.190 | 0.0695 | 2.73 | 0.006 | 0.054 | 0.326 | |
| | FatherAggre-3 | <i>Girl</i> | 0.617 | 0.0676 | 9.13 | <0.001 | 0.485 | 0.749 | |
| | | <i>Boy</i> | 0.569 | 0.0630 | 9.03 | <0.001 | 0.445 | 0.693 | |
| | ODD-3 | <i>Girl</i> | 0.059 | 0.0602 | 0.99 | 0.324 | -0.059 | 0.177 | |
| | | <i>Boy</i> | 0.019 | 0.0551 | 0.35 | 0.730 | -0.089 | 0.127 | |

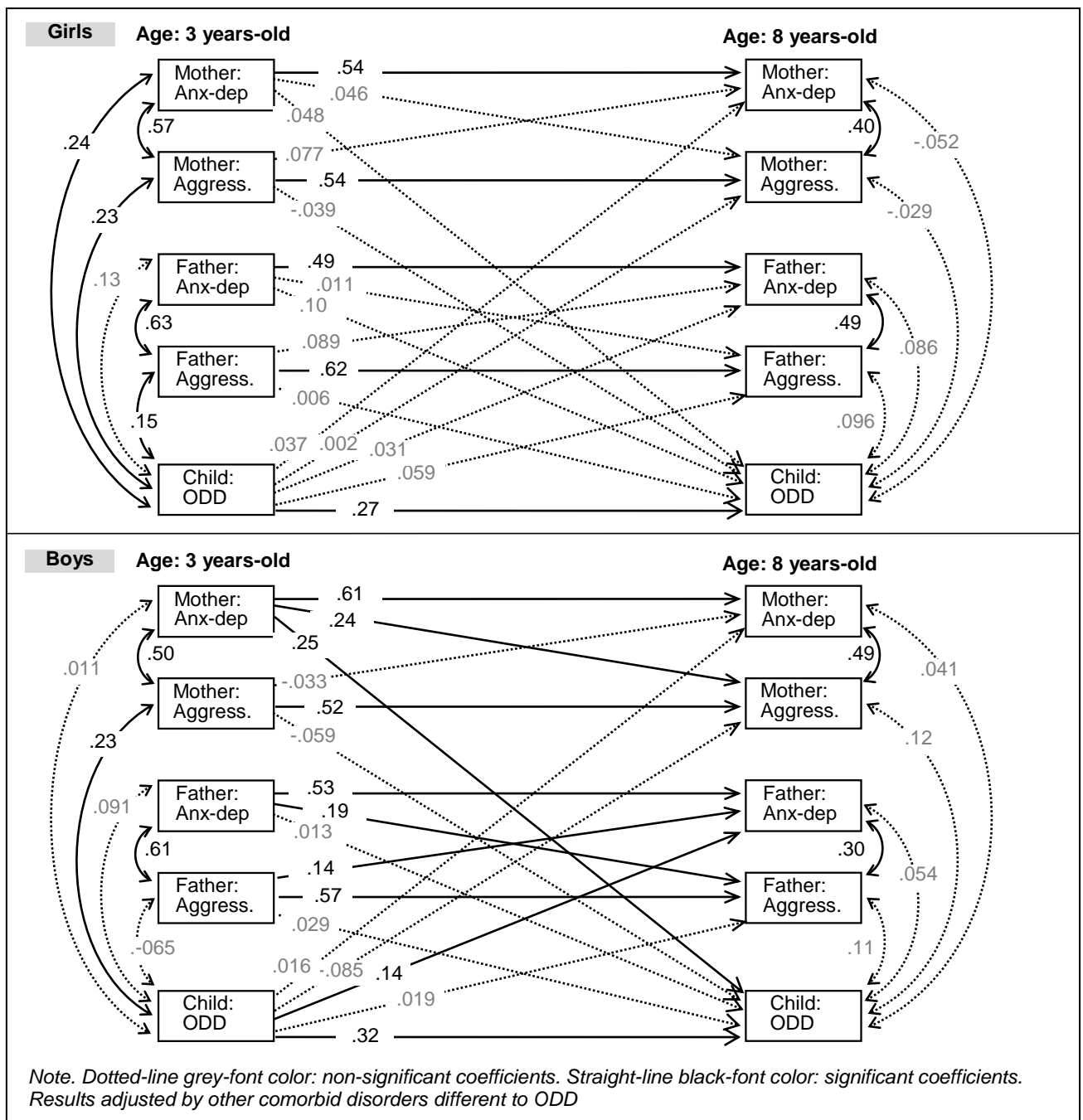


Figure 1. SEM including children’s sex as group variable (n=311).

