

# Prevalence of psychopathology in children of parents with mental illness and/or addiction

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# Prevalence of psychopathology in children of parents with mental illness and/or addiction: an up to date narrative review

*Sophie Leijdesdorff<sup>a</sup>, Karin van Doesum<sup>b</sup>, Arne Popma<sup>c,d</sup>, Rianne Klaassen<sup>c</sup>, and Therese van Amelsvoort<sup>a</sup>*

## Purpose of review

Children of parents with a mental illness and/or addiction are at high risk for developing a mental illness themselves. Parental mental illness is highly prevalent leading to a serious number of children at high risk. The aim of this review is to give an up-to-date overview of psychopathology in children of parents with various mental illnesses and/or addiction, based on recent literature.

## Recent findings

Worldwide, 15–23% of children live with a parent with a mental illness. These children have up to 50% chance of developing a mental illness. Parental anxiety disorder sets children at a more specific risk for developing anxiety disorder themselves, where children of parents with other mental illnesses are at high risk of a large variety of mental illnesses. Although preventive interventions in children of mentally ill parents may decrease the risk of problem development by 40%; currently, these children are not automatically identified and offered help.

## Summary

This knowledge should encourage mental health services to address the needs of these children which requires strong collaboration between Child and Adolescent Mental Health Services and Adult Mental Health Services. Directions for further research would be to include both parents, allow for comorbidity and to look deeper into a broader variety of mental illnesses such as autism and personality disorder other than borderline.

## Keywords

psychopathology, offspring, parental mental illness, children, prevalence

## INTRODUCTION

Three out of four adult mental illnesses arise before the age of 25 [1]. The onset of a mental illness before the age of 25 threatens critical age-specific, interpersonal, and occupational and educational development. Longer duration of mental illness during adolescence is one of the strongest predictors for persistent adult disorder [2]. Therefore, prevention, and early detection and intervention are key solutions to avoid enduring problems.

Studies of people at increased risk for mental illness have, apart from focusing on environmental factors, always been oriented at genetic factors as well [3]. Children of parents who suffer from a mental illness and/or addiction are because of both genetic as well as environmental factors, particularly at risk for developing a mental illness themselves. Offspring of parents with a severe mental illness (SMI), mostly defined as schizophrenia, major

depressive disorder, bipolar disorder, or severe borderline personality disorder (BPD), have a 50% chance of developing any mental illness, and 32% probability of developing a SMI. This is 2.5 times the risk compared to children of parents without mental illnesses [4].

Parental mental illness is highly prevalent; 2.7 million parents (3.8%) in the United States had a SMI in the past year and 12.8 million parents (18.2%) with

<sup>a</sup>Department of Psychiatry and Psychology, Maastricht University, Maastricht, <sup>b</sup>Mindfit, Zwolle, <sup>c</sup>Department of Child and Adolescent Psychiatry, Duivendrecht, and <sup>d</sup>Department of Child and Adolescent Psychiatry, VU University Medical Center, Amsterdam, The Netherlands

Correspondence to Sophie Leijdesdorff, MSc, Maastricht University, PO box 616, 6200 MD Maastricht, The Netherlands. Tel: +31 0 619888669; e-mail: sophie.leijdesdorff@maastrichtuniversity.nl

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## KEY POINTS

- Children of parents who suffer from a mental illness and/or addiction are at high risk for developing a mental illness themselves.
- Parental mental illness is highly prevalent leading to a serious number of children at high risk.
- Parental anxiety disorder sets children at a more specific risk for developing anxiety disorder themselves, where children of parents with other mental illnesses are at high risk of a large variety of mental illnesses.
- The knowledge should encourage mental health services to address the needs of these children which requires strong collaboration between Child and Adolescent Mental Health Services and Adult Mental Health Services.
- Directions for further research would be to include both parents, allow for comorbidity and to look deeper into other mental illnesses such as autism and personality disorder other than borderline.

children aged 18 or younger had any mental illness in the past year [5<sup>•</sup>]. Maybery *et al.* [6] estimated that there are between 21 and 23% of children living in Australian households where at least one parent has a mental illness, equating to just over a million children. In the Netherlands 577 000 children grow up with a parent with a mental illness and/or addiction. This number is calculated by only combining parental mood disorder, anxiety disorder, attention deficit hyperactivity disorder (ADHD), and addiction, therefore this number probably is a gross underestimation [7]. In Canada, 15.6% of all children are exposed to parental psychiatric disorders [8]. Thus, worldwide, there is a serious number of children at high risk for diverse adverse outcomes, leading to a high service demand and costs in the long term.

A large cohort study in Denmark showed that children of parents with mental illness or addiction are at high risk of a large variety of psychiatric illnesses, but specific illnesses were not concordant in parents and children [9]. Van Santvoort *et al.* [10<sup>••</sup>] conducted a thorough systematic review into the specificity of the relation between parents with depressive disorder, bipolar disorder, and anxiety disorder and their children's diagnoses showing that parental depressive and bipolar disorder indeed increases the risk for children to develop various mental illnesses, but parental anxiety disorder sets children at a more specific risk for developing anxiety disorders. So far, reviews focusing on a broader variety of mental illnesses in parents and their specific relations to psychopathology in their children are lacking.

Therefore, a comprehensive search of MEDLINE/PubMed and PsycINFO was conducted by February 2017 for articles, meta-analyses, and reviews about psychopathology in children of parents with mental illness and/or addiction. Search terms for children were children and offspring. Search terms used for parents with mental illness and/or addiction were parents with mental illness, mental disorder, mental disease, depression, bipolar, schizophrenia, psychosis, anxiety disorder, personality disorder, ADHD, autism, autism spectrum disorder (ASD), addiction, substance abuse, impaired parents, high risk. Once an initial pool of articles was obtained, a lateral search was conducted from the reference section of every article.

The aim of this narrative review is to give an up-to-date overview of psychopathology in children of parents with various mental illnesses and/or addiction, based on recent literature.

## SCHIZOPHRENIA

Children of parents with schizophrenia are at increased risk to develop any mental illness compared with a control group of children of parents without mental illnesses [11<sup>•</sup>]. Of all mental illnesses, the risk is highest for schizophrenia in these children [4], with a prevalence from 15 to 40% into adulthood [11<sup>•</sup>]. Furthermore, children of parents with schizophrenia have an increased risk of developing bipolar disorder or major depressive disorder [4], anxiety disorder [11<sup>•</sup>], ADHD [12<sup>•</sup>,13], and ASD [14<sup>•</sup>]. Furthermore, for children with a mother with SMI very poor spelling at the age of 12 may be an elevated indicator of risk for developing a psychotic disorder later in life [15].

## MAJOR DEPRESSIVE DISORDER

Depression is one of the most common mental illnesses with a lifetime prevalence of 16.6% [1]. When one parent is depressed, a child has a 40% chance of developing depression at the age of 18 and at the age of 25 this percentage rises up to 60% [16]. Offspring of parents with a major depressive disorder are four times more likely to develop an affective disorder [17] and twice as likely to develop any mental illness compared with children of parents with no mental illness [18]. A meta-analysis of 193 studies showed a variety of internalizing and externalizing problems and general psychopathology [19] in offspring of a parent with a depressive disorder, including substance use [20,21] and anxiety disorders [20,21,22<sup>••</sup>], even at 20-year follow-up [23].

Maternal postpartum depressive disorder elevates the risk for anxiety disorder in adolescents.

Children whose mother experienced a postpartum depression are also at increased risk for depressive disorder, but only in case of recurrent depressive episodes in their mothers [24]. This elevated risk of depression is strongest when the mother experiences at least 17 months of depressive disorder subsequent to the postpartum period before their child is 16-year old [25]. Also, maternal antenatal depressive disorder is a risk factor for the development of both internalizing and externalizing disorders in children [26].

Finally, children of depressed mothers are more likely to have suicidal thoughts or behaviour than children of healthy mothers [27], with a positive correlation between mother's and child's suicidality.

### BIPOLAR DISORDER

Children of a parent with bipolar disorder have a serious increased risk of 52% of developing any mental illness [4,28]. The risk ratio for children of parents with bipolar disorder is highest for bipolar disorder and increased for developing mania [29], schizophrenia, major depressive disorder [4,13,29], substance use, ADHD [12<sup>•</sup>,13,29], and anxiety disorder [29].

### BORDERLINE PERSONALITY DISORDER

A recent systematic review into offspring of mothers with BPD shows that these children have an increased risk for psychopathology, including BPD, depressive disorder, externalizing problems such as aggression or attention problems, and emotional problems [30<sup>•</sup>]. Children of parents with BPD are at higher risk of mental health difficulties compared with children of parents with axis I mental illnesses or other personality disorders [31]. More severe BPD symptoms in mothers are a predictor of more severe BPD in their children, and comorbid depressive disorder increases this risk even more [32]. A study into female adolescent inpatients showed that high levels of depression and psychosocial stress in fathers were associated with BPD in their daughters [33].

### ADDICTION

In general, consistently higher and clinically significant internalizing and externalizing problems are seen in children of parents with addiction. These children are at increased risk of addiction, depressive disorder, and posttraumatic stress disorder themselves [34]. Also, mothers with addiction are more than twice as likely to have a child with ASD than mothers without addiction [14<sup>•</sup>].

With respect to alcohol, Rossow *et al.* [35<sup>•</sup>] conducted a thorough systematic review to address adverse

child outcomes of parental alcohol abuse. Two thirds of their large quantity of articles from 1980 to 2013 have adolescent drinking as outcome measure, and another outcome measure than substance abuse is rare. Parental alcohol abuse increases the risk of developing alcoholism in children, but study results are contradictory on whether there is a specific risk for either paternal or maternal alcohol abuse.

Parental alcoholism is shown to be a risk factor for comorbid alcoholism, depression, and antisocial personality disorder in a study into opioid addicts (mean age 27-year old). Furthermore, the alcohol abuse problems were more severe among opioid addicts with parental alcoholism compared with opioid addicts without parental alcoholism [36].

Concerning cannabis misuse, adolescents with parents with cannabis use disorder (CUD) have an increased risk of developing CUD, especially in daughters of mothers with CUD. Parental hard drug use disorder and antisocial personality disorder are also risk factors for onset of CUD in adolescents [37<sup>•</sup>].

School-aged children of opiate and/or cocaine-addicted mothers have high rates of any psychiatric disorder (60%), major depressive disorder (20%), oppositional defiant disorder (18%), conduct disorder (17%), ADHD (13%), and substance abuse (5%) [38]. Comparing offspring sex, male offspring is at higher risk of developing ADHD, whereas female offspring had a higher risk of developing depressive disorder [38]. Children of parents with opioid or methamphetamine addiction are at higher risk for ADHD, major depressive disorder, and anxiety disorder [39<sup>•</sup>].

### ANXIETY DISORDERS

Children with a parent with anxiety disorder have a two-fold risk of developing anxiety disorder themselves [12<sup>•</sup>]. Parental panic disorder is a predictor for the development of multiple anxiety disorders, including panic disorder, agoraphobia, social phobia, and obsessive-compulsive disorder (OCD) in their children. When parents suffer from both panic disorder and depressive disorder, their children are at an increased risk of developing specific phobia and major depressive disorder [21]. Offspring of parents with OCD have an increased risk of developing ASD [40<sup>•</sup>]. Compared to children of parents with mood disorders, children of parents with an anxiety disorder are at a more specific risk to develop anxiety disorders themselves [10<sup>••</sup>].

Apart from parental diagnosis, parental early onset, having two affected parents instead of one, female sex [22<sup>••</sup>], chronic and recurrent parental mental illness, and comorbidity are factors that increase the risk for depressive and anxiety disorder in offspring [41].

## ADHD

ADHD is a highly heritable disorder [42]. Up to 43% of children with a parent with ADHD develop ADHD themselves and they are also at higher risk of developing psychopathology in general compared with children of parents without ADHD [43]. Parents with ADHD are often suffering from comorbid mental illnesses, especially anxiety disorders [43], which increases the risk for psychopathology in their children even more. ADHD in children is most persistent over time when their mother is diagnosed [44<sup>■</sup>].

A remarkable finding is that within the group of children with a parent with ADHD, there is no significant difference between the risk factor in children of parents with remitted versus persistent ADHD. Being exposed to a parent with ADHD however, increases the risk of family conflicts and lesser levels of family cohesion [45].

## AUTISM

Children of parents diagnosed with ASD are at an increased risk of developing ASD. Twin studies show a concordance for ASD of 92% in monozygotic pairs versus 10% in dizygotic pairs [46], pointing out a strong genetic component. The risk of developing ASD is nine-folded compared to children of parents with another mental illness like OCD [40<sup>■</sup>].

## CONCLUSION AND DISCUSSION

Children of parents with a mental illness and/or addiction are at high risk of developing a mental illness [4]. Parental anxiety disorder sets children at a more specific risk for developing anxiety disorder themselves, whereas children of parents with other mental illnesses are at high risk of a large variety of mental illnesses. Because of the high prevalence of parental mental illnesses [5<sup>■</sup>] there are a large number of children at high risk. Currently, these children are not automatically identified and offered help.

Preventive interventions in children of mentally ill parents decreased the risk of problem development by 40% [47]. This knowledge should encourage Adult Mental Health Services to commit itself to not only focus on the mentally ill adult, but to also address parenting skills and their children's well-being. Furthermore, it should encourage Child and Adolescent Mental Health Services to be alert for parental mental illness, which requires strong collaboration between Child and Adolescent Mental Health Services and Adult Mental Health Services which is currently often insufficient [48–50,51<sup>■</sup>]. Pfeiffenberger *et al.* [52<sup>■</sup>] conducted a study to investigate how mental health services addressed child well-being in New Zealand. Their results

showed that in less than half of the records of parents with a mental illness there was information about their children, and only in 6% there was a specific plan for action. To improve services for children of mentally ill parents, since 2010 Norway altered their health legislation into making it mandatory to assess whether mentally ill patients have children. In the first 3 years since this alteration, significantly more children were identified as being at risk, but follow-up in terms of support for these children did not significantly increase [53].

Identification of children at risk for developing mental illness is the first step. To decrease the risk of problem development, different types of interventions are developed, mostly focusing on informing the children about their parent's illness and supporting both children and parents [47,54,55]. In addition to these interventions, children of parents with mental illness ask for recognition, information about their parent's disease, and to be part of decisions made about their family [56<sup>■</sup>].

Some limitations in research into children of parents with mental illness and/or addiction, as described by Leverton in 2003 [48], still exists. Research often focuses on both parents or mothers, and less often on the role of the fathers [10<sup>■</sup>]. Most studies are based on persons with a single diagnosis, whereas in real life there is often more than one disorder (comorbidity) and diagnoses are not always clear or they change over time. Furthermore, a paucity of literature into mental illnesses other than affective disorder, anxiety disorder, psychosis, or BPD remained.

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## Conflicts of interest

*There are no conflicts of interest.*

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