Intergenerational transmission of depression and anxiety – is the effect different for the children of refugees?

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Introduction

Children with a parent with depression or anxiety (common mental disorders, or CMDs) are more likely to have these disorders themselves in adolescence. This is a robust association that been studied in many different settings and involves multiple biological, psychological and social mechanisms. However, whether this intergenerational transmission effect looks different for refugees and their children is still poorly understood.

While asylum-seekers and refugees initially have a greater risk of depression and anxiety disorders (especially post-traumatic stress disorders) immediately post-migration, the refugees who end up settling in a destination society display a risk of mental illnesses that is comparable to the majority population, or sometimes even lower. This is in many ways remarkable, given that refugees continue to experience a range of social risk factors that are known to be important risk factors of mental illness including poverty, unemployment, social exclusion, marginalisation, discrimination, and feelings of uncertainty, and concern and guilt for loved ones "left behind". This suggests that refugees' may to some extent display a resilience to stressors experienced in the destination society which are widely known to are core *social determinants* of poor mental health.

This display of resilience in refugees, is reason why the *intergenerational transmission* of CMDs is interesting to study for the children of refugees, and there may be evidence of an overriding intergenerational transmission of *resilience* instead, such that, despite the greater experience of social adversity that their childhoods are characterised by, they may nonetheless be less likely to have mental disorder in childhood compared to their peers without refugee parents.

We thus ask the following research questions:

1) How prevalent is depression and anxiety in adolescent children of refugees (ages 12-17)?
2) What is the association between parental depression/anxiety in childhood (ages 6-11) and depression and anxiety in adolescence (ages 12-17)?
3) Does the association between parental CMD in childhood and CMD in adolescence differ for the children of refugees compared to children with Swedish-born parents and children with non-refugee migrant parents?

Methods

Data

We use a collection of register data provided by Statistics Sweden, which have been linked data on prescribed medication from the National Prescribed Drug Register, and in- and outpatient hospital data from the National Patient Registers, provided by the National Board of Health and Welfare, Sweden. Together, these register data include longitudinal information on drug prescriptions for depression and anxiety, diagnostic information from hospital visits, major demographic events such as births, deaths, migration events, as well as intergenerational links between parents and children for the Swedish population. Individuals were linked across registers using pseudonymised unique person number with a a

high degree of accuracy. For this analysis, we use information from the National Prescribed Drug Register to capture as well as diagnostic information from inpatient and outpatient registers to capture depression and anxiety for children and their parents between the years 2005-2022, as well as migration information including refugee permits and years of immigration from the STATIV register. To allow us to examine depression and anxiety in adolescence, include individuals born between 1999 and 2005, and capture any depression or anxiety between the ages 12-18, therefore examining depression and anxiety over the years 2011-2022. We also examine parents' mental health in childhood, we examine their mental health when the child is age 6-11, thus during the years 2005-2016. We include children who do not emigrate or die before age 17, and where information is available for both parents (i.e. both parents alive, and residing in Sweden until age child's age 17, and not missing data on country on birth). Where siblings exist across the selected cohorts, we select the first-born child, dropping siblings from subsequent cohorts. The analytic sample thus consisted of N=428,722 children, who had complete data for mothers and fathers.

Measures

We refer to the Swedish-born children of refugees as G2 refugees, and define this group as either one or both parents being foreign-born and having a first residence permit indicating that they were a refugee. We use Swedish-born children of Swedish-born parents as the main comparison group. We also include two additional comparison groups: G2 non-refugees – Swedish-born children with foreign-born parents, where neither parent is a refugee; and G1.5 refugees – foreign-born refugees who arrived under the age of 6.

Information from the drug prescription register and the patient registers were combined to produces single measures of depression and anxiety. Depression is captured using the ATC codes N06 to capture antidepressant prescriptions, and diagnostic ICD codes ranging from F300-F399 to capture mood disorders in patient registers (both in- and outpatient hospital services). Anxiety was captured using drug prescriptions classed as anxiolytics (ATC codes N05), as well as diagnostic information on anxiety disorders from patient registers (ICD codes F400-F489). The measures were binary, indicating any relevant drug prescription and/or diagnosis across the period of interest (ages 12-17 for children; and parents' while the child was aged 6-11). The measures of depression and anxiety were combined to produce a single measure of common mental disorder to indicate either depression, anxiety or both. The mental disorder measures were also combined for the parents to indicate any parental depression, anxiety and common mental disorder in childhood.

Analysis

We present descriptive analyses of prevalence estimates and distributions comparing the children of refugees to children with Swedish-born parents and G2 non-refugees. We also use logistic regression analysis to test associations, stratifying the analysis by migrant background group, to compare associations of parental common mental disorder and common mental disorder in adolescence.

Results

Table 1 presents the overall prevalence estimates of depression, anxiety and common mental disorder (depression and/or anxiety), in adolescence. Overall, 12.1% of children had at some point across the ages 12-17 experienced depression or anxiety. Anxiety was slightly more common than depression. The prevalence of common mental disorders for mothers in childhood was high, at 28.7%, with depression being more common. Combined with father's the prevalence of having any experience of parental common mental disorder in childhood was high at 38.8%.

Table 1 Prevalence of depression, anxiety and common mental disorder in children and their parents (N=428,722)

	n	%
Depression (ages 12-17)	35,170	8.2
Anxiety (ages 12-17)	39,888	9.3
Common mental disorder (ages 12-17)	51,795	12.1
Mother with depression in childhood (child's age 6-11)	98,251	22.9
Mother with anxiety in childhood (child's age 6-11)	75,875	17.7
Mother with common mental disorder in childhood (child's age 6-11)	122,812	28.7
Father with depression in childhood (child's age 6-11)	55,217	12.9
Father with anxiety in childhood (child's age 6-11)	47,295	11.0
Father with common mental disorder in childhood (child's age 6-11)	72,777	17.0
Any parental depression in childhood (child's age 6-11)	134,336	31.3
Any parental anxiety in childhood (child's age 6-11)	109,883	25.6
Any parental common mental disorder in childhood (child's age 6-11)	166,352	38.8

Examining the distribution of common mental disorders for the G2 refugees and comparison groups indicated that the children of refugees – both the Swedish-born and especially, the foreign-born – had a substantially lower prevalence of both depression and anxiety in adolescence (Table 2). The prevalence estimates for the G2 non-refugees were more comparable to the Swedish-born with Swedish-born parents, but also slightly lower.

Table 2 Distribution of depression and anxiety in adolescence by migration background

	N	Depression		Anxiety		Common mental disorder	
Children ages 12-17							
Swedish-born with Swedish-born parents	342,801	30,221	8.8	33,178	9.7	43,374	12.7
G2 refugee	34,666	1512	4.4	2326	6.7	2858	8.2
G2 non-refugee	44,741	3230	7.2	3999	8.9	5093	11.4
G1.5 refugee	6,514	207	3.2	385	5.9	470	7.2

Although not shown in here, we also performed analyses examining the distribution of parental common mental disorder by the migrant background groups. This analysis indicated that the children of refugees were more likely to have a parent with common mental disorders; and this was especially notable for common mental disorder for fathers (analyses not shown).

In Table 3, we show that there is a strong intergenerational effect of common mental disorder. Children with a parent who had depression or anxiety while they were aged 6-11 had a two-fold increased risk of depression and anxiety themselves. However, we also show that the strength of this intergenerational effect varies substantially between the different groups – the weakest effect observed among foreign-born children of refugees, and also notably weaker among the Swedish- born children of refugees.

Table 3. Associations between parental common mental disorder while the child was aged 6-11, and common mental disorder in adolescence (ages 12-17), stratified by migration background.

	Common mental disorder in adolescence (ages 12-17)		
	OR	(95% CI)	*p*
Full population sample: Parental common mental disorder	2.14	(2.10-2.18)	<0.001
Stratification by migration background			
Swedish-born with Swedish-born parents: Parental common mental disorder	2.27	(2.22-2.31)	<0.001
G2 refugee: Parental common mental disorder	1.73	(1.60-1.88)	<0.001
G2 non-refugee: Parental common mental disorder	1.92	(1.81-2.03)	<0.001
G1.5 refugee: Parental common mental disorder	1.60	(1.33-1.94)	<0.001

The model tests associations between parental common mental disorder while the child was between the ages 6-11, and common mental disorder in the child in adolescence (ages 12-17), adjusting for birth cohort and the sex of the child

Discussion

Our preliminary analyses indicate that children of refugees have a lower risk of common mental disorders in adolescence, despite being more likely to have a parent with mental illness. This provides tentative evidence that the intergenerational transmission of common mental disorder presents with an attenuated effect for refugees and their children. While these contradictory observations seem like a paradox, they do align with hypotheses regarding the “healthy migrant hypothesis”, which broadly explains the observation that migrants tend to have better health than the non-migrant population of their destination society. Nonetheless, the observation for refugees is particularly notable – given the stressful nature of their reasons for migration – and warrants some consideration of resilience. Moreover, these findings do not hold for the second generation of immigrants, which typically displays poorer health. How the resilience in refugees comes about and is passed on to the next generation needs to be studied further but it may partially be explained by selection effects (those granted asylum may be healthier), as well as social and psychological explanations which may include a sense of safety upon settling bringing benefits to their mental health, or social support gained from cultural and/or religious community.