



# Comorbidities of anxiety disorders in children and adolescents in Germany: a nationwide representative claims data analysis

Wandschneider L<sup>1</sup>, Hasemann L<sup>1</sup>, Diekmannshemke J<sup>1</sup>, Witte J, Klee M<sup>2</sup>, Linhardt M<sup>3</sup>, Wallau C<sup>4</sup>

<sup>1</sup>Vandage GmbH, Bielefeld, Germany, <sup>2</sup>DAK-Gesundheit, Hamburg, Germany, <sup>3</sup>Uniklinikum Würzburg, Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, <sup>4</sup>Julius-Maximilians-Universität Würzburg, Department of Psychology I, Psychotherapy and Intervention Psychology, Germany

## BACKGROUND

- Anxiety disorders are the most prevalent mental health issue in young ages, often presenting with high levels of psychiatric and somatic comorbidities.
- In Germany, the prevalence of anxiety disorders ranges between 5-10% among children and adolescents and has increased compared to pre-pandemic years.
- This study aims to estimate associations between anxiety disorders and particular comorbidities, incl. depression, pain and chronic diseases, in children and adolescents in Germany.

## RESULTS

- The prevalence of coexisting diagnoses with anxiety disorders and depression or pain is higher among girls, with adolescent girls showing the highest prevalence (2023: 28 per 1.000 girls and adolescents).
- The chance of being diagnosed with depression in children and adolescents with anxiety disorders is high for girls and boys across all age groups, compared to those without anxiety disorders.
- In 2023, children and adolescents diagnosed with anxiety disorders had a 26-times higher chance of having a coexisting diagnosis with depression (95%CI: 25.2; 27.7), which has increased since 2019 (OR: 18.2 [95%CI 17.2; 19.3]).
- Though less pronounced, children with anxiety disorders also have a higher chance of being diagnosed with a chronic condition (e.g. obesity in 2023: OR 2.0 [95%CI 1.9; 2.1]) or pain diagnosis (2023: OR 2.3 [95%CI 2.2; 2.4]).

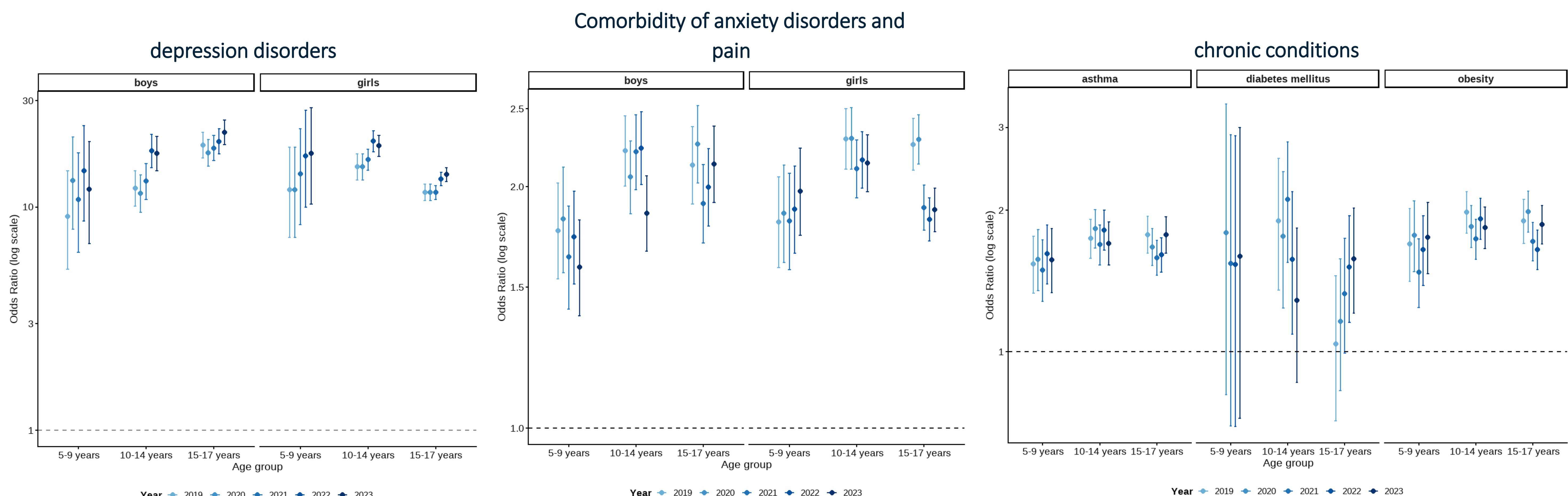
## MATERIAL AND METHODS

- This retrospective analysis uses German nationwide representative social health insurance claims data covering January 2019 to December 2023.
- We include children and adolescents aged 5-17 years living in Germany and being insured with DAK-Gesundheit between 2019-2023, equating to approximately 550,000 individuals per year of observation.
- We calculate prevalences (per 1.000 children and adolescents) and odds ratios for comorbid diagnosis in children and adolescents with anxiety disorders, including depression disorders, chronic diseases (asthma, diabetes and obesity) or pain, stratified by age and sex.

**Table 1:** Prevalence of anxiety disorders and parallel diagnosis of depression disorders among DAK-insured children and adolescents (per 1.000), by age and sex, 2019-2023

	Comorbidity with depression					Comorbidity with diagnosed pain				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Girls	5-9 years	0.2	0.2	0.2	0.2	0.2	3.1	2.6	2.6	3.1
	10-14 years	3.0	3.0	5.0	5.2	5.2	7.8	7.3	7.9	8.7
	15-17 years	15.4	15.4	24.6	28.3	28.4	21.2	23.0	25.6	29.1
	Overall (5-17 years)	5.1	5.1	7.9	8.8	8.7	9.5	9.4	10.2	10.9
Boys	5-9 years	0.2	0.2	0.2	0.1	0.1	2.6	2.0	2.0	2.5
	10-14 years	1.3	1.2	1.3	1.5	1.5	5.1	4.4	4.2	4.1
	15-17 years	5.0	4.7	5.4	5.3	5.8	6.9	6.8	6.5	7.1
	Overall (5-17 years)	1.8	1.7	1.9	1.9	2.0	4.6	4.1	4.0	4.1
Total	5-9 years	0.2	0.2	0.2	0.2	0.2	2.8	2.3	2.3	2.7
	10-14 years	2.1	2.1	3.1	3.3	3.3	6.4	5.8	6.0	6.2
	15-17 years	10.0	11.1	14.7	16.4	16.8	13.8	14.6	15.8	17.2
	Overall (5-17 years)	3.4	3.6	4.8	5.3	5.2	7.0	6.7	7.0	7.8

At least documented 1 diagnosis of anxiety disorder (ICD-10-GM codes: F40, F41) and depression (F32, F33) or diagnosed pain (M54, R07, R10, R51, R52) per year



**Figure 1:** Odds ratios of anxiety disorders in children and adolescents with coexisting diagnosis of depression disorders, pain or chronic conditions (obesity, diabetes mellitus and asthma) among DAK-insured children and adolescents, by age and sex, 2019-2023

**Table 2:** Prevalence of anxiety disorders in children and adolescents with coexisting chronic conditions (obesity, diabetes mellitus, asthma) among DAK-insured children and adolescents (per 1.000), 2019-2023

	2019	2020	2021	2022	2023
Obesity	5-9 years	0.6	0.7	0.7	0.6
	10-14 years	2.0	1.9	2.2	2.0
	15-17 years	2.7	3.2	3.8	3.8
	Overall (5-17 years)	1.7	1.8	2.0	1.9
Diabetes mellitus	5-9 years	-	0.0	0.0	0.0
	10-14 years	0.2	0.2	0.2	0.1
	15-17 years	0.2	0.3	0.4	0.5
	Overall (5-17 years)	0.1	0.1	0.2	0.2
Asthma	5-9 years	1.1	0.9	0.9	0.8
	10-14 years	2.3	2.3	2.2	1.8
	15-17 years	4.0	4.1	4.6	4.2
	Overall (5-17 years)	2.3	2.2	2.3	2.0

At least 1 diagnosis of anxiety disorder ICD-10-GM F40, F41 and diagnosed pain or diagnosed with asthma (per year)

## CONCLUSIONS

- Children with anxiety disorders frequently present with comorbid depression, chronic somatic conditions, and pain, indicating a substantial burden.
- Children and adolescents diagnosed with anxiety disorders have significantly higher odds of being diagnosed with a coexisting depression.
- The clustering of mental and chronic conditions points to the need for comprehensive, patient-centered approaches that account for both psychological and physical symptoms.
- Prioritizing prevention services for pediatric mental health needs to play a crucial role in enhancing long-term health in children and adolescents.