

Prevalence of (symptoms of) mental disorders among adults (18–60 years) with and without registered hearing problems: statistics from general practice registration systems

Introduction

This factsheet provides an overview of the unadjusted prevalences of mental disorders and associated symptoms among adults (18–60 years) with hearing problems registered by a general practitioner (GP) and adults without registered hearing problems. The total prevalence of all (symptoms of) mental disorders studied and the prevalences of the individual mental disorders are presented for each year from 2013 to 2022 for both groups.

Data

The data used in this factsheet come from general practices participating in Nivel Primary Care Database (Nivel Zorgregistraties Eerste Lijn). These data are linked at the individual level to data from Statistics Netherlands (Centraal Bureau voor de Statistiek, CBS). The prevalence of (symptoms of) mental disorders was determined on the basis of episodes of illness constructed by Nivel. An episode of illness is defined as the period between the first available diagnosis date and the estimated date of recovery. This recovery date is determined on the basis of follow-up contacts with the general practice or the absence thereof. Diagnoses in general practice are recorded using International Classification of Primary Care (ICPC) codes. For each ICPC code, a contact-free interval has been established after which an episode of illness is closed following the last registration. This period ranges from 4 weeks for acute conditions to an unlimited duration for chronic conditions.

adults in the data without these registered diagnoses. In total, over the period 2013–2022, 35,884 adults with hearing problems and 1,657,809 adults without hearing problems were included. This resulted in 128,851 and 7,151,558 person-years, respectively.

Mental disorders

The prevalence indicates the percentage of adults with and without hearing problems who, per year, had an episode of illness registered in general practice for (symptoms of) mental disorders. The classification of ICPC codes under DSM-5-TR classifications was compiled by the authors. For each classification, both ICPC codes for the relevant diagnosis and codes for associated symptoms were included (see Table 1). These are diagnoses and symptoms registered by the GP, not disorders formally diagnosed under DSM-5-TR.

Study population

Adults with hearing problems were identified on the basis of three ICPC codes for chronic episodes of illness: Presbycusis (H84), Acoustic trauma, noise-induced deafness (H85), and Deafness (H86). These episodes of illness are defined as chronic, meaning that a single registration in the general practice record is sufficient to retain the diagnosis. Adults without hearing problems consist of all remaining



Table 1. Mental disorder classifications (DSM-5-TR), compiled from ICPC codes

DSM-5-TR classification	ICPC codes
Schizophrenia spectrum and other psychotic disorders	P71: Other organic psychosis; P72: Schizophrenia, all types; P98: Other/ unspecified psychosis
Bipolar and related disorders	P73: Affective psychosis
Depressive disorders	P03: Feeling depressed; P76: Depressive disorder
Anxiety disorders	P01: Feeling anxious/nervous/tense/ inadequate; P74: Anxiety disorder/anxiety state
Trauma- and stressor-related disorders	P02: Acute stress/transient situational disturbance; P78: Neuraesthesia/surmenage
Somatic symptom and related disorders	P75: Hysterical/hypochondriacal disorder
Feeding and eating disorders	T06: Anorexia nervosa/bulimia
Sleep-wake disorders	P06: Disturbances of sleep/insomnia
Sexual dysfunctions	P07: Inhibition/loss/lack of sexual desire/ excitement; P08: Inhibition/loss/lack of sexual fulfilment
Substance-related and addictive disorders	P15: Chronic alcohol abuse; P16: Acute alcohol abuse; P17: Tobacco abuse; P18: Medicinal abuse; P19: Drug abuse
Personality disorders	P80: Personality disorder
Other mental disorders	P29: Other psychological symptoms and complaints; P79: Other neurotic disorder; P99: Other mental/psychological disorder
Suicidal behaviour and self-harm (Other conditions that may be a focus of clinical attention)	P77: Suicide (attempt)

Results

Figure 1 shows the total prevalence of (symptoms of) mental disorders for adults with and without hearing problems for the years 2013–2022. In each year, the prevalence for adults with hearing problems is significantly higher than for adults without hearing problems, with a difference of around 6 percentage points.

Figure 1. Total prevalence of (symptoms of) mental disorders

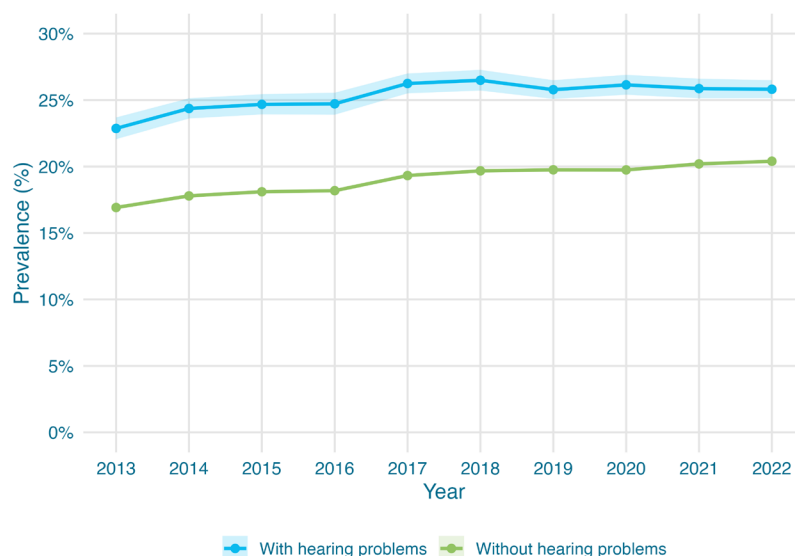


Figure 2 shows the prevalences of (symptoms of) mental disorders with an annual prevalence above 1%. For all individual disorders, the prevalence is significantly higher in almost all years for

adults with hearing problems than for adults without hearing problems, with a difference of approximately 0.5 to 2.5 percentage points.

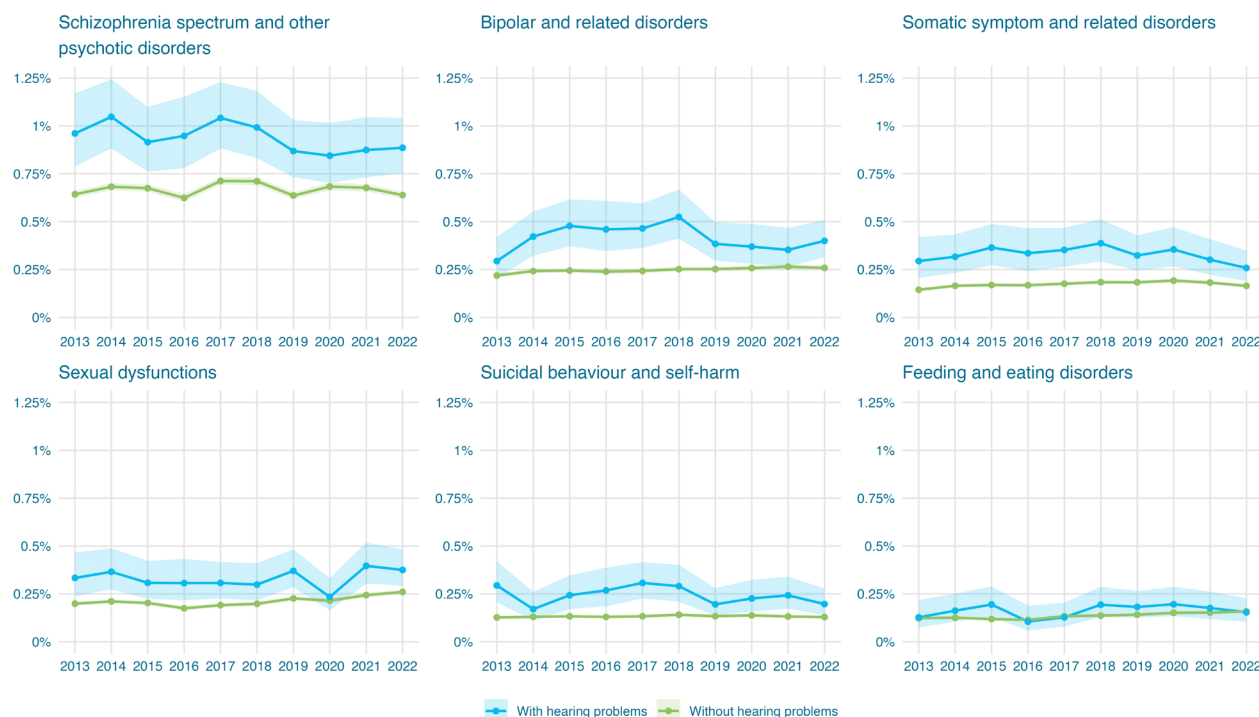
Figure 2. Prevalence of (symptoms of) mental disorders with an annual prevalence above 1%



Figure 3 shows the prevalences of (symptoms of) mental disorders with an annual prevalence below 1%. For most individual disorders, the prevalence is significantly higher in almost all years for adults with hearing problems than for adults

without hearing problems, with a difference of approximately 0.1 to 0.3 percentage points, with the exception of feeding and eating disorders, where there is no significant difference in any year.

Figure 3. Prevalence of (symptoms of) mental disorders with an annual prevalence below 1%



Conclusion

This factsheet describes the prevalence of (symptoms of) mental disorders among adults with and without GP-registered hearing problems in the Netherlands over the period 2013–2022.

The findings show that approximately one quarter (23–26%) of adults with hearing problems have annually registered (symptoms of) mental disorders, compared with approximately one fifth (17–20%) of adults without hearing problems. This significant difference of around 6 percentage points is consistent across all years studied. At the level of the individual disorders, adults with hearing problems have a significantly higher prevalence than adults

without hearing problems for almost all disorders, with differences ranging from 2.5 to 0.1 percentage points. Among both adults with and without hearing problems, the most common (symptoms of) mental disorders are depressive disorders, anxiety disorders, trauma- and stressor-related disorders, substance-related and addictive disorders, and sleep-wake disorders.

These results provide insight into the prevalence of (symptoms of) mental disorders among adults with and without registered hearing problems in Dutch general practice. The consistently higher prevalence among adults with hearing problems underscores the importance of active attention to mental health within this population.

Reference • de Ponti, N., van Klaveren, C., Cornelisz, I., Hek, K., Wauters, L., & Heppe, E. (2026). *Prevalence of (symptoms of) mental disorders among adults (18–60 years) with and without registered hearing problems: statistics from general practice registration systems*. Deelkracht (Driven). www.drivenproject.nl

Data use • This study was approved in accordance with the governance code of Nivel Zorgregistraties Eerste Lijn, under number NZR-00323.036.