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Stability of childhood anxiety disorder diagnoses: a follow-up naturalistic study in psychiatric care

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Abstract Few studies have examined the stability of major psychiatric disorders in pediatric psychiatric clinical populations. The objective of this study was to examine the long-term stability of anxiety diagnoses starting with pre-school age children through adolescence evaluated at multiple time points. Prospective cohort study was conducted of all children and adolescents receiving psychiatric care at all pediatric psychiatric clinics belonging to two catchment areas in Madrid, Spain, between 1 January, 1992 and 30 April, 2006. Patients were selected from among 24,163 children and adolescents who received psychiatric care. Patients had to have a diagnosis of an ICD-10 anxiety disorder during at least one of the consultations and had to have received psychiatric care for the anxiety disorder. We grouped anxiety disorder diagnoses according to the following categories: phobic disorders, social anxiety

disorders, obsessive–compulsive disorder (OCD), stress-related disorders, and “other” anxiety disorders which, among others, included generalized anxiety disorder, and panic disorder. Complementary indices of diagnostic stability were calculated. As much as 1,869 subjects were included and had 27,945 psychiatric/psychological consultations. The stability of all ICD-10 anxiety disorder categories studied was high regardless of the measure of diagnostic stability used. Phobic and social anxiety disorders showed the highest diagnostic stability, whereas OCD and “other” anxiety disorders showed the lowest diagnostic stability. No significant sex differences were observed on the diagnostic stability of the anxiety disorder categories studied. Diagnostic stability measures for phobic, social anxiety, and “other” anxiety disorder diagnoses varied depending on the age at first evaluation. In this clinical pediatric outpatient sample it appears that phobic, social anxiety, and stress-related disorder diagnoses in children and adolescents treated in community outpatient services may have high diagnostic stability.

J. J. Carballo and E. Baca-Garcia contributed equally to this work

The members of the Group for the Study of Evolution of Diagnosis (SED) is given in the [Appendix](#).

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Keywords Anxiety disorders · Reproducibility of results · Mental disorders diagnosed in childhood

Introduction

Diagnosis is a critical element of clinical practice, research, and training and public health [3]. Diagnostic stability over time offers a foundation from which to predict course and outcome of a disorder [18] and provide evidence-based treatment. Since diagnostic instability may result in inappropriate or even harmful treatment interventions [3, 4], there is a clinical need to study diagnostic stability of childhood psychiatric diagnoses. However, few studies have examined the stability of major psychiatric disorders in pediatric psychiatric clinical populations.

Anxiety disorders are among the most prevalent psychiatric disorders identified in children [11, 12, 14]. These disorders are associated with the development of subsequent psychiatric disorders leading to significant psychosocial impairment, and yet are understudied, underreported, and poorly understood [12, 14, 16, 26]. Overall, temporal diagnostic stability of anxiety disorders is reported to range from low to high levels among youth. These discrepant results have been observed in clinical and epidemiological studies.

From a clinical standpoint, Valevski et al. [23] conducted an investigation that evaluated diagnoses among adolescents ($n = 351$) admitted to a psychiatric inpatient unit. They showed that during the 15–19 years of follow-up, ICD-9 anxiety disorders were the most stable diagnoses. However, other clinical prospective studies have not replicated these findings but have yielded conflicting results. Cantwell et al. [6] followed up a clinical sample of 151 children during 4 years and showed that DSM-III-R diagnoses, such as separation anxiety and overanxious disorders lacked predictive validity. Similarly, Mattanah et al. [18] studied the stability of DSM-III-R disorders in adolescent inpatients and found anxiety disorders to have low temporal diagnostic stability during the 2-year follow-up period.

On the other hand, epidemiological studies have also reported contradictory results with regard to diagnostic stability of anxiety disorders. For instance, Cohen et al. [8, 9] prospectively evaluated children and adolescents aged 9–18 years. They found that anxiety disorders had moderate diagnostic stability during the 2½-year follow-up period. Beidel et al. [5] showed a similar result but in a smaller sample ($n = 150$) and with a shorter duration of follow-up (6 months). Nonetheless, Essau et al. [13], in a longitudinal school-based study among adolescents (aged 12–17) showed that anxiety disorders had low diagnostic stability at follow-up. Similarly, Last et al. [16] prospectively examined the course of DSM-III-R anxiety disorders

and found that the vast majority of the participants with an anxiety disorder at baseline did not meet criteria for the disorder at follow-up period (3 to 4 years), which is in accordance with the notion of “waxing and waning” of mental disorders described by others [25].

Stability of specific anxiety disorders has not been free of divergent results either. Pine et al. [20] conducted a 9-year follow-up investigation in an epidemiologically selected sample of children and adolescents (aged 9–18). They focused on specificity in the course of adolescent disorders and showed that simple phobia was the most stable anxiety disorder, whereas overanxious, generalized anxiety, and panic disorders showed a non-specific course. However, Costello et al. [11] conducted a longitudinal community study among children aged 9–13 and found different course for the anxiety disorders. Costello et al. [11] distinguished two types of continuity of a disorder. They described homotypic continuity of a disorder as retention of the same diagnosis at different assessment points, whereas heterotypic continuity was defined as the continuation of symptoms that are identified as different diagnoses at different time points [11]. They showed that panic disorder had the highest level of continuity at age 16 among the anxiety disorders.

As these previous studies have provided detailed information about the diagnostic stability of anxiety disorders, they are limited by small sample size and few assessment points. Given the paucity of information regarding diagnostic stability of anxiety disorders, we aimed to evaluate their long-term stability in a large sample of pre-schoolers, children, and adolescents who were evaluated at multiple time points in psychiatric clinical settings. This study provided a unique opportunity to shed light on the question of how stable pediatric anxiety diagnoses remain over time. We hypothesized that anxiety disorders would show low to moderate levels of diagnostic stability as has been reported in previous studies.

Methods

Source of data

Beginning in 1986, public mental health centers in the province of Madrid, Spain have recorded all psychiatric visits in a regional registry (Registro Acumulativo de Casos de la Comunidad de Madrid). From 1986 to 1992, diagnoses were coded according to the *International Classification of Diseases, Ninth Revision* (ICD-9). Since 1992, diagnoses were coded according to *International Classification of Diseases, Tenth Revision* (ICD-10). A unique identifying number [3, 4] assigned to individual service users ensured patient anonymity and remained unchanged throughout all medical contacts.

Data extraction

We extracted regional registry data regarding all psychiatric visits to all pediatric psychiatric clinics belonging to two catchment areas in Madrid. ICD-9 codes were converted to ICD-10 codes using guidelines published by the World Health Organization [3, 4].

Participants

This prospective cohort included all pre-schoolers (2–5 years), children (6–12 years), and adolescents (13–18 years) who received psychiatric care in two comparable catchment areas of the province of Madrid between 1 January 1992 and 30 April 2006 due to any psychiatric reason. These age groups were defined according to the National Library of Medicine and the National Institutes of Health's classification of ages. Inclusion criteria for this study were: [1] diagnosis of an ICD-10 anxiety disorder during at least one of the consultations, [2] age 2–18 years at first diagnosis of an ICD-10 anxiety disorder, [3] evaluated by a psychiatrist/psychologist on at least three occasions, and [4] psychiatric diagnoses documented during at least 80% of the subject's visits. Institutional Review Boards at "Fundacion Jimenez Diaz" and "12 de Octubre" Hospitals approved the study.

Setting

Services were rendered at psychiatric outpatient centers that are part of the Spanish National Health Service.

Variables

Diagnoses were made by treating psychiatrists/psychologists according to ICD-9 or ICD-10, depending on the assessment date. Treating clinicians had standard clinical training in diagnostic assessment and were hired by the National Mental Health System to specifically treat the child and adolescent population. Psychiatrists/psychologists recorded a maximum of 2 diagnoses per patient per visit for administrative purposes.

We grouped anxiety disorder diagnoses according to the following categories: phobic disorders (F40.0, F40.2, F40.8, F40.9, or F93.1); social anxiety disorders (F40.1 or F93.2); obsessive–compulsive disorder (OCD) (F42); stress-related disorders (F43.0, F43.1, F43.8, or F43.9); and "other" anxiety disorders (F41, F41.0, F41.1, F41.2, F41.3, F41.8, or F41.9) which, among others, included generalized anxiety disorder, and panic disorder. Although diagnosis included in ICD-10 and DSM-IV classifications are generally considered analogous, there are some differences

between both diagnostic systems. The ICD-10 includes several categories that are not present in the DSM-IV.

Data analysis

Diagnostic stability

We examined two complementary indices of diagnostic stability:

Temporal consistency

It is the presence or absence of a particular disorder at two different time points [19]. Three measures of temporal consistency are presented for each category of anxiety disorders [21]. The first, "prospective consistency", is the proportion of individuals in a category at the first evaluation who remain in the same category at their last evaluation. This would correspond to positive predictive value if the last diagnosis were the gold standard. It is clinically useful because it indicates the extent to which a diagnosis given at the initial evaluation will be present at the last evaluation, thus directing clinical treatment.

The second, "retrospective consistency", is the proportion of individuals with a diagnosis assigned at the last evaluation who had received the same diagnosis at the first evaluation. This is conceptually similar to sensitivity and as with prospective consistency, high values indicate good temporal consistency of the diagnosis.

However, prospective and retrospective consistency rates fail to account for the fact that new cases may develop after initial presentation and other cases may remit [19], which is corrected by the use of the third measure of temporal consistency, the kappa coefficient [7]. The kappa coefficient is the agreement between diagnoses at first and last evaluations and measures the agreement correcting for the effect of chance. We adopted the guidelines for the interpretation of kappa coefficients from Altman et al. [1]: <0.20, poor agreement; 0.21–0.40, fair agreement; 0.41–0.60, moderate agreement; 0.61–0.80 good agreement; and 0.81–1.00 very good agreement.

Diagnostic constancy

As prospective and retrospective consistency and the kappa coefficient rely only on two evaluations, they often fail to reflect the diagnostic process through multiple evaluations that is more characteristic of routine clinical practice [3, 4]. To capture this process, we also measured the proportion of patients who received the same diagnosis in at least 75% of the evaluations. Subjects who received anxiety disorder diagnoses within the same category (i.e., within the

“phobic disorders” category) in at least 75% of evaluations were categorized as having a constant anxiety disorder.

Statistical analysis

We compared temporal consistency measures of different anxiety disorder diagnoses using Wald’s method [1] to calculate confidence intervals for each measure of temporal consistency (Statistical Package for the Social Sciences, version 14.0). We conservatively considered two confidence intervals that share a boundary or do not overlap to be significantly different from one another. All these comparisons were performed two-tailed. We calculated the duration of follow-up for each of the anxiety disorders studied. Kaplan–Meier survival analyses were conducted.

Results

Characteristics of the sample

Of the 23,163 youth in the registry, 1,869 met inclusion criteria and had 27,945 psychiatric/psychological consultations. Subjects were evaluated 15.0 times on average (range 3–204). Age at initial visit was distributed as follows: initially, 8.8% of the sample was evaluated between 2 and 5 years, 57.5% between 6 and 12 years, and 33.7% between 13 and 18 years.

Although the proportions of females (50.7%) and males (49.3%) were similar, differences between sexes were found after stratification by age at first evaluation ($\chi^2 = 46.7$, $df = 2$, $p < 0.001$). Significantly more males (55.2%) were initially diagnosed than females (44.4%) with an anxiety disorder during childhood followed by significantly more females (61.6%) than males (38.4%) diagnosed with an anxiety disorder during adolescence. The proportions of females (49.4%) and males (50.6%) who received an initial anxiety disorder diagnosis during pre-school years were not significantly different.

Duration of follow-up for the anxiety disorders varied depending on the anxiety disorder studied. The median number of days of follow-up was 554 (CI 434.6–673.4) for subjects with phobic disorder; 472 (CI 372.1–571.9) for subjects with social anxiety disorders; 1,404 (CI 1015.9–1792.1) for subjects with OCD; 357 (CI 231.8–482.2) for subjects with stress-related disorders; and 937 (CI 664.0–1210.0) for subjects with other anxiety disorders.

Temporal consistency of anxiety disorder diagnoses

Prospective consistency ranged from 66.4% for other anxiety disorders to 78.6% for stress-related disorders (Table 1). Retrospective consistency for anxiety disorder

categories ranged from 52.2% for OCD to 82.1% for stress-related disorders. OCD and “other” anxiety disorders had significantly lower overall retrospective consistency than phobic, social anxiety, and stress-related disorders. Kappa values ranged from 54.4% in “other” anxiety disorders to 79.5% in stress-related disorders.

Prospective and retrospective consistency rates for the majority of the anxiety disorder categories were similar in females and males (Table 1), the exceptions being OCD and “other” anxiety disorders. “Other” anxiety disorders in both sexes and OCD in males had the lowest kappa values of all the anxiety disorders and were in the range of 50–60%.

Prospective consistency rates for phobic disorders were significantly higher in those first evaluated during childhood compared with those first evaluated during adolescence (Table 2). Retrospective consistency rates for OCD and “other” anxiety disorders were significantly lower than for phobic, social anxiety, and stress-related disorders among those first evaluated in childhood.

Diagnostic constancy of anxiety disorder diagnoses

OCD and “other” anxiety disorders were significantly less constant than the remaining anxiety disorder categories (Table 3).

No significant sex differences were observed on the diagnostic constancy of the anxiety disorder categories studied.

Phobic disorder diagnoses were significantly more constant in those first evaluated in childhood while “other” anxiety disorders were significantly more constant in those first evaluated in adolescence.

Discussion

Diagnostic stability of anxiety disorders

The stability of all ICD-10 anxiety disorder categories was higher than expected as measured by their temporal consistency and diagnostic constancy. Our findings are in agreement with results of some [5, 8, 9, 23], but not all [6, 13, 16, 18] clinical and epidemiological studies that have evaluated the temporal diagnostic consistency of anxiety disorders in children and adolescents. Thus, while the former investigations showed fair to moderate values of diagnostic stability of anxiety disorders, the latter showed poor diagnostic stability. It is also of importance to recognize the likely contribution of the particular diagnostic criteria and clinician’s practice. Our result may partly reflect the contribution to real life diagnostic judgments and management decisions, which are related to the

Table 1 Temporal consistency of ICD-10 anxiety disorder diagnoses by sex ($n = 1,869$)

	First evaluation (n)	Prosp. cons. (%)	95% CI	Retros. cons. (%)	95% CI	First versus last evaluation (κ) (%)	95% CI
Females							
Phobic	393	75.9	(71.7–80.1)	78.9	(74.8–83.1)	62.0	(56.9–67.1)
Social anxiety	118	70.3	(62.0–78.5)	83.0	(75.6–90.3)	73.1	(66.1–80.0)
OCD	31	74.1	(58.7–89.5)	65.7	(49.9–81.4)	68.6	(55.6–81.6)
Stress-related	37	73.0	(58.7–87.3)	77.1	(63.2–91.1)	74.0	(62.4–85.5)
“Other”	146	68.4	(60.9–76.0)	55.8	(48.5–63.1)	53.6	(46.5–60.7)
Males							
Phobic	408	79.1	(75.1–83.0)	78.9	(74.8–83.1)	61.7	(56.6–66.8)
Social anxiety	111	73.8	(65.7–82.0)	74.5	(66.4–82.6)	70.7	(63.5–77.8)
OCD	32	75.0	(59.9–90.0)	43.6	(30.5–56.7)	53.1	(40.2–65.9)
Stress-related	33	84.8	(72.6–97.1)	87.0	(76.0–98.9)	85.6	(76.4–94.8)
“Other”	107	63.5	(54.4–72.6)	58.1	(49.1–67.0)	55.3	(46.9–63.5)
Total							
Phobic	801	77.5	(74.6–80.4)	78.6	(75.7–81.4)	61.8	(58.2–65.4)
Social anxiety	229	72.0	(66.2–77.8)	78.5	(73.0–84.1)	71.9	(66.8–76.8)
OCD	63	74.6	(63.8–85.3)	52.2	(41.9–62.5)	59.8	(50.5–69.1)
Stress-related	70	78.6	(69.0–81.2)	82.1	(72.9–91.2)	79.5	(72.0–87.0)
“Other”	253	66.4	(60.5–72.2)	56.5	(50.9–62.2)	54.4	(49.0–59.8)

All Kappa (κ) statistics are significant ($p < 0.001$)

CI Confidence interval, *Prosp. cons.* prospective consistency (%), *Retros. cons.* retrospective consistency (%)

proclivities of the diagnosing clinician, more than to patient/child characteristics or to the literality of the diagnostic classificatory system being used. This was not the scope of our investigation but is an area that deserves further research.

Diagnostic stability of anxiety disorders with onset in childhood or adolescence could be partially explained by genetic, biological, and developmental factors. Converging findings from twin and family studies suggest that genetic mechanisms underlie the risk for internalizing disorders and a greater risk for recurrence is reported in early onset internalizing disorders [15]. Although mental disorders in children and adolescents are described as having a “waxing and waning” [25] course, this increased probability of recurrence of internalizing disorders could result in the repetition of similar clinical manifestations over time. In this vein, it is conceivable that clinicians in our study, having diagnosed a patient during an acute episode of a particular disorder, would be more inclined to diagnose that same disorder when a new, but different anxiety disorder arose after a symptom-free interval. This could partly explain the high level of diagnostic stability observed in children and adolescents with anxiety disorders. On the other hand, studies with shorter follow-up duration or fewer assessment points may show lower rates if patients were symptom free at those evaluations.

Epidemiologic and clinic-based studies [15] have shown that anxiety disorders usually have the earliest age of onset, compared with other childhood psychiatric disorders. This

observation has been related to “developmental readiness” to manifest anxiety disorders in the face of stressful conditions [15]. However, considering the broad array of developmental changes that occur through early childhood, adolescence, and young adulthood, clinical manifestations of anxiety disorders may also change over time affecting stability of anxiety disorder diagnoses. Alternatively, it may be that children with early onset anxiety disorders are exhibiting a phenotype reflecting genotypes with higher penetrance and thus contributing to a more stable clinical presentation and, therefore, more likely to be diagnosed with the same disorder over time (homotypic continuity).

Diagnostic stability of specific anxiety disorder diagnoses

Phobic and social anxiety disorders showed the highest diagnostic stability, whereas OCD and “other” anxiety disorders (which include generalized anxiety disorder and panic disorder) showed the lowest diagnostic stability.

The relatively higher diagnostic stability of phobic disorders is in agreement with results from clinical and epidemiological studies. Last et al. [17] reported that a small proportion of subjects with simple phobia developed a new psychiatric disorder during the follow-up. Similarly, Pine et al. [20] found that subjects with simple phobia and social anxiety tended to have a stable course of illness.

Our study reflects a high degree of developmental continuity for phobic, social anxiety, and stress-related

Table 2 Temporal consistency of ICD-10 anxiety disorder diagnoses by age at first evaluation ($n = 1,869$)

	First evaluation (n)	Prosp. cons. (%)	95% CI	Retrosop. cons. (%)	95% CI	First versus last evaluation (κ) (%)	95% CI
Pre-schoolers							
Phobic	73	86.3	(78.4–94.1)	67.7	(58.2–77.2)	51.9	(39.3–64.5)
Social anxiety	14	64.2	(39.1–89.3)	75.0	(50.0–99.4)	66.6	(45.0–88.1)
OCD	4	50.0	(10.0–98.9)	100.0	(100.0–100.0)	66.1	(22.2–100.0)
Stress-related	6	100.0	(100.0–100.0)	85.7	(59.7–100.0)	92.0	(76.3–100.0)
“Other”	11	66.4	(60.5–72.2)	56.5	(50.9–62.2)	39.2	(12.6–65.8)
Children							
Phobic	549	80.8	(77.5–84.1)	80.0	(76.6–83.3)	59.8	(54.9–64.5)
Social anxiety	128	76.5	(69.2–83.9)	74.8	(67.3–82.2)	72.3	(65.8–78.8)
OCD	27	85.1	(71.7–98.5)	50.0	(35.5–64.4)	61.8	(48.5–75.0)
Stress-related	35	82.8	(70.3–95.3)	82.8	(70.3–95.6)	82.3	(72.4–92.1)
“Other”	60	60.0	(47.6–72.3)	37.5	(27.8–47.1)	42.2	(32.0–52.2)
Adolescents							
Phobic	179	63.6	(56.6–70.7)	80.2	(73.7–86.8)	61.3	(54.2–68.3)
Social anxiety	87	66.6	(56.7–76.5)	86.5	(78.4–94.7)	72.0	(63.5–80.3)
OCD	32	68.7	(52.6–84.8)	52.3	(37.2–67.4)	57.0	(43.1–70.7)
Stress-related	29	68.9	(52.1–85.8)	80.8	(64.3–95.6)	72.9	(59.3–86.4)
“Other”	182	69.7	(63.1–76.4)	67.1	(60.5–73.8)	55.3	(48.1–62.4)

All Kappa (κ) statistics are significant ($p < 0.001$)

CI Confidence interval, *Prosp. cons.* prospective consistency (%), *Retrosop. cons.* retrospective consistency (%)

disorders. This finding, in agreement with a previous report conducted in a large epidemiological sample [11], underscores the notion that these anxiety disorders are not merely an epiphenomenon or precursor of other forms of psychopathology as has been previously reported [10].

On the other hand, our results regarding obsessive–compulsive disorder are in agreement with findings from an outpatient study of youngsters with obsessive–compulsive disorder reporting that 71% met criteria for a different psychiatric disorder during follow-up (mean follow-up time = 11.2 years) [24]. A diagnosis of obsessive–compulsive disorder may significantly increase the likelihood of suffering from additional psychopathology, partly explaining the higher rate of unstable course of obsessive–compulsive disorder found in our study. OCD also showed the lowest rates of retrospective consistency among all the anxiety disorders studied, which may reflect clinicians’ difficulty in identifying OCD symptoms during the first evaluation. Should this finding be replicated, it would demonstrate the need for better assessment of this disorder among youth evaluated in psychiatric outpatient services.

The lower prospective and retrospective consistency and diagnostic stability of “other” anxiety disorder diagnoses—which includes diagnoses, such as generalized

anxiety disorder and panic disorder—may suggest the difficulties that clinicians encounter when evaluating children and adolescent with such diagnoses. This finding may also imply that for subjects who suffer from OCD or from “other” anxiety disorders there may be a “heterotypic continuity” [11] of the disorder. As well, it has been suggested that diagnoses, such as generalized anxiety disorder are early manifestations of mood disorders implying a heterotypic course [10]. Nonetheless, given that diagnostic reliability decreases with the number of digits employed in the ICD-10 (i.e., reliability of ICD-10 F41 diagnosis would be higher than ICD-10 F41.1 diagnosis), it is conceivable that the diagnostic stability of generalized anxiety disorder and panic disorder would result in even lower figures. Alternatively, clinicians in our sample may have underdiagnosed generalized anxiety disorder and panic disorder and may have used the “other” anxiety disorder category (ICD-10 F41) as a residual category instead of using the more specific diagnostic categories for unspecified anxiety disorders ICD-10 F41.8 or F41.9. In this case, these unspecified anxiety disorders—but not major diagnoses, such as generalized anxiety disorder and panic disorder—would be the ones with low diagnostic stability values.

Table 3 Percentage of children and adolescents with constant anxiety disorder diagnoses by sex and age at first diagnosis ($n = 1,869$)

	Female (%)	95% CI	Male (%)	95% CI	Total (%)	95% CI
Preschoolers						
Phobic disorders	68.6	(56.7–80.4)	57.6	(48.3–66.8)	62.7	(53.6–71.7)
Social anxiety disorders	75.0	(42.9–100.0)	57.1	(34.8–79.3)	68.4	(47.5–89.3)
OCD	–	–	33.3	(6.0–65.9)	25.0	(0.0–55.0)
Stress-related disorders	50.0	(1.0–98.9)	50.0	(21.7–78.2)	45.5	(33.4–57.4)
“Other”	35.7	(9.6–61.7)	15.4	(01.7–28.9)	25.9	(9.3–42.4)
Children						
Phobic disorders	68.3	(63.6–72.8)	67.5	(64.0–70.9)	67.8	(64.4–71.2)
Social anxiety disorders	68.8	(60.0–77.6)	53.8	(46.5–60.9)	60.1	(53.0–67.2)
OCD	47.8	(33.0–62.5)	38.6	(26.9–50.2)	41.8	(29.9–53.6)
Stress-related disorders	70.0	(50.8–89.1)	72.7	(59.2–86.1)	71.4	(57.7–85.0)
“Other”	21.7	(12.8–30.5)	27.7	(20.9–34.5)	24.7	(18.1–31.2)
Adolescents						
Phobic disorders	48.3	(38.0–58.6)	62.5	(56.1–68.3)	53.5	(47.2–59.8)
Social anxiety disorders	50.0	(36.0–63.9)	63.3	(54.5–72.0)	55.6	(46.5–64.5)
OCD	39.4	(22.7–56.0)	51.5	(39.4–63.5)	45.5	(33.4–57.4)
Stress-related disorders	47.6	(22.3–72.8)	66.7	(51.2–82.0)	55.6	(39.3–71.7)
“Other”	46.9	(37.1–56.6)	43.6	(37.8–49.2)	45.7	(40.0–51.4)
Total						
Phobic disorders	62.5	(58.4–66.5)	65.6	(62.7–68.4)	64.1	(61.1–66.9)
Social anxiety disorders	61.1	(53.6–68.6)	56.8	(51.3–62.2)	58.9	(53.5–64.3)
OCD	41.4	(30.7–51.9)	43.4	(35.1–51.5)	42.6	(34.3–50.7)
Stress-related disorders	57.1	(41.9–72.2)	68.3	(58.6–77.9)	62.2	(52.2–72.2)
“Other”	39.1	(32.2–45.9)	35.0	(30.7–39.2)	37.4	(33.1–41.7)

CI confidence interval

Strengths and weaknesses

This is the largest longitudinal study evaluating the diagnostic stability of anxiety disorders in youngsters using two complementary indices. The reasons for the higher diagnostic stability found in our study are unclear, but may be due to the large sample size, extensive duration of follow-up, high number of assessments, diagnostic criteria, or demographic variables. Nevertheless, our result must be interpreted with caution and in the context of several limitations discussed below.

ICD-10 diagnoses were established clinically and not with the use of standardized assessments, possibly affecting accuracy. Follow-up assessors were not blind to the patient's previous diagnosis. Treating psychiatrists/psychologists often had access to past records and diagnoses, and may have been inclined to keep the previous diagnosis rather than assign a different one. However, this is not supported by the fact that we found strikingly low values of diagnostic stability of chronic mental disorder diagnoses using similar methodology in an adult sample treated by the same team of psychiatrists and psychologists [2].

Clinicians who assigned the diagnoses were not specifically trained to maintain inter-rater reliability. However, improved inter-rater reliability would have been likely to further increase, rather than decrease, diagnostic stability by reducing random error. This study has the limitations of most large-scale surveys. It is possible that patients with the most unstable diagnoses moved or sought treatment elsewhere, thus, confounding diagnostic stability through alternate pathways of treatment-seeking. However, rates of annual residential changes to other provinces in Spain or other countries among young people are estimated at <2% (“National Statistics Institute” (INE); <http://www.ine.es>). Given that most Spaniards receive medical and mental health care in public services, it is unlikely that many patients sought treatment in other settings. Further, we intentionally selected subjects with 3 or more visits to pediatric psychiatric clinics, the results of this investigation may not be generalized to those subjects with subthreshold, more transient or less impairing disorders. We based our estimations on the notion that the follow-up of the patients was the result of a single episode of a disorder. Given the characteristics of our dataset, we could not account for the possibility that some patients may have been followed for

independent episodes that not only could be distant in time but also of a different nature. This limitation, however, would have resulted in decreasing rather than increasing the diagnostic stability of the anxiety disorder diagnoses studied. We also did not have data on the efficacy of the treatment interventions carried out. Nevertheless, comparisons between the degree of diagnostic stability found in our study and figures reported by other researchers must be interpreted with caution. Although it is generally assumed that diagnoses according to DSM-IV and ICD-10 are corresponding [22], differences exist and are manifest in four aspects of the diagnostic criteria: typology, identifying criteria, inclusion, and exclusion criteria [2]. Furthermore, it has been suggested that these classification systems may diagnose different groups of people with anxiety disorders in epidemiological samples [22].

Despite all these limitations, the high degree of diagnostic stability found for the majority of the anxiety disorders studied is remarkable.

Conclusion

Bearing in mind the limitations of the study, phobic, social anxiety, and stress-related disorder diagnoses in children and adolescents treated in community outpatient services appear to have high diagnostic stability.

In this sample OCD and “other” anxiety disorders, such as generalized anxiety disorder and panic disorder have relatively lower long-term diagnostic stability. This may reflect the fact that these disorders are hard to diagnose.

If these findings were to be replicated in future investigations, this information could be useful to develop more appropriate diagnostic ascertainment as well as treatment recommendations and interventions among children and adolescents suffering from anxiety disorders.

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Appendix

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