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Diagnostic concordance between Primary Care and Mental Health

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SUMMARY

Objetivo. To analyse the diagnostic concordance index between Primary Care and Mental Health.

Methodology. Retrospective and descriptive study in Mental Health Centre of Villaverde, Madrid, Spain. The sample consists of 1050 consecutive new adult patients referred from Primary Care to Mental Health Center from January to December 2016. The following variables were recorded: Primary Health Center of origin, age, sex, type of activity requested in the referral (Psychiatry or Psychology), diagnosis established by Primary Care and diagnosis established by Mental Health.

Results. Diagnostic concordance between Primary Care and Mental Health presented a global kappa coefficient of 0.383 (CI 95% 0.333–0.433). The diagnostic groups with the lowest concordance were adaptive disorder (*kappa*: 0.200), anxiety disorder (*kappa*: 0.242) and depressive affective disorder (*kappa*: 0.340). The diagnostic groups with the highest concordance were bipolar disorder (*kappa*: 0.816) and psychotic disorder (*kappa*: 0.689). Adaptive disorder was the most frequently diagnostic in Mental Health among those who did not coincide with Primary Care (38.99%).

Conclusions. Diagnostic concordance between Primary Care and Mental Health is low, which could affect the quality of care offered to patients. New strategies are needed to increase this diagnostic concordance.

Key words. Primary Health Care. Mental health. Referral and Consultation. Diagnosis.

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Actas Esp Psiquiatr 2021;49(4):129-134 | ISSN: 1578-2735

CONCORDANCIA DIAGNÓSTICA ENTRE ATENCIÓN PRIMARIA Y SALUD MENTAL

RESUMEN

Objetivo. Analizar la concordancia diagnóstica entre Atención Primaria (AP) y Salud Mental (SM).

Metodología. Estudio descriptivo y retrospectivo realizado en el Centro de SM de Villaverde, Madrid, España. La muestra está conformada por 1050 pacientes adultos nuevos consecutivos derivados desde AP a SM desde enero a diciembre del año 2016. Se registraron las siguientes variables: Centro de AP de origen de la derivación, edad, sexo, tipo de actividad solicitante en la derivación (Psiquiatría o Psicología), diagnóstico establecido por AP y diagnóstico establecido por SM.

Resultados. La concordancia diagnóstica entre AP y SM presentó un coeficiente de *kappa* global de 0,383 (IC 95% 0,333–0,433). Los grupos diagnósticos con menor concordancia fueron el trastorno adaptativo (*kappa*: 0,200), el trastorno de ansiedad (*kappa*: 0,242) y el trastorno afectivo depresivo (*kappa*: 0,340). Los grupos diagnósticos con mayor concordancia fueron el trastorno bipolar (*kappa*: 0,816) y el trastorno psicótico (*kappa*: 0,689). El trastorno adaptativo fue el diagnóstico más frecuentemente diagnosticado en SM entre los no coincidentes con AP (38,99%).

Conclusiones. La concordancia diagnóstica entre AP y SM es baja, lo cual podría afectar a la calidad asistencial ofrecida a los pacientes. Se considera necesario el planteamiento de nuevas estrategias que permitan aumentar esta concordancia.

Palabras clave. Atención Primaria de Salud. Salud Mental. Derivación y Consulta. Diagnóstico.

In routine clinical practice in Primary Care (PC), a great deal of time and resources are spent on attending to patients with psychiatric pathology, the most frequently treated disorders being anxiety and affective disorders^{1,2,3}.

The coexistence of physical and psychological symptoms is a very common phenomenon that must be constantly addressed by PC physicians^{4,5}.

The prevalence of psychiatric disorders in PC consultations is high, with an overall prevalence of 24% reported⁶. Furthermore, it has been estimated that the prevalence of depression in PC consultations is 19.5%⁷. Stress and anxiety are factors that produce an important dysfunctionality, generating high health costs and a decrease in work productivity⁸.

In order to make coordination between the different specialties possible, the referral and interconsultation system is used so that the same patient can be treated by two or more professionals. Since the 1990s, internal referral processes have arisen in order to offer a coordinated health service between the different specialties⁹.

Diagnostic concordance between the PC specialist and the Mental Health (MH) specialist is of critical importance: on the one hand, if there is diagnostic concordance, the therapeutic approach initiated in PC can be continued in MH; on the other hand, the perception of the quality of care perceived by the patient will be greater¹⁰.

Several studies have been carried out in which it has been determined that the diagnostic concordance between PC and MH is low, showing also a tendency in PC to under-diagnose adaptive disorders, as well as an over-diagnosis of depressive affective disorders^{11, 12,13,14}.

However, in our setting there are hardly any recent publications that study the diagnostic concordance between PC and MH. Therefore, the aim of the present study is to evaluate the diagnostic concordance of all patients referred from 7 PC Health Centers to MH during one year, all of them belonging to the area of Villaverde, Madrid, with patients being referred to the Villaverde MH Center, which belongs to the area of influence of the Hospital Universitario 12 de Octubre.

2. MATERIAL AND METHODS

2.1. Sample

The reference population of the study was 128,352 adults belonging to 7 Health Centers, with a staff of 96 PC Specialist Physicians and whose Mental Health Center of reference

was the Villaverde Mental Health Center. There were 798 referrals from these Health Centers to Psychiatry and 252 to Psychology, being a total of 1050 first consultations of new adult patients referred from PC to MH from January to December 2016.

2.2. Method

A cross-sectional study was conducted, using as a data source the databases provided by the Specialized Care Appointment Request System (SCAE) of PC and by the Electronic Health Record System, HCIS, of the Villaverde MH Center with the aim of selecting those adult patients referred as new consultations from PC to the Villaverde MH Center during 2016.

The following data were collected for each patient: Health Center, age, sex, type of requesting activity in the referral (Psychiatry or Psychology), diagnosis established by PC and diagnosis established by MH.

Subsequently, an evaluation of diagnostic concordance between PC and MH was performed. The diagnoses made by PC were grouped based on the coding of the diagnoses present in the International Classification of Primary Care (ICPC-2)¹⁵. The diagnoses made by MH were coded in the same groups established from PC and based on the coding of the International Classification of Diseases-10th version (ICD-10)¹⁶. In this way, the diagnostic groups shown in Table 1 and Table 2 were established, correlated with the ICPD-2 and ICD-10 diagnoses.

The diagnosis of MH was considered to be concordant with the diagnosis of PC when both belonged to the same diagnostic group according to this classification (table 1; table 2). The group of other diagnoses and the group of unspecified diagnoses were not included in the calculation of overall concordance since this would have produced an erroneous decrease in concordance, due to the enormous heterogeneity of this group and the lack of specificity of some of the diagnoses, such as unspecified affective disorder or unspecified mental disorder.

2.3. Statistical analysis

The analysis of diagnostic concordance between PC and MH was performed by calculating the *kappa* coefficient with the Statistical Package for the Social Sciences (SPSS) software version 24 and the Epidat software version 4.1.

The *kappa* coefficient was interpreted according to the agreed standards (<0.00: poor; 0.00-0.20: mild; 0.21-0.40: reasonable; 0.41-0.60: moderate; 0.61-0.80: considerable; 0.81-1: almost perfect)¹⁷.

Table 1		Classification of diagnostic groups based on the International Classification of Primary Care (ICPC-2)
Diagnostic group		ICPC-2 diagnostics.
Psychotic disorder		Schizophrenia, other organic psychoses, other unspecified psychoses.
Affective depressive disorder		Depressive feelings, depression/depressive disorders.
Bipolar affective disorder		Affective psychosis.
Substance use disorder		Chronic alcohol abuse, acute alcohol abuse, tobacco abuse, drug abuse.
Anxiety disorder		Anxiety disorders/anxiety state, feeling of anxiety/nervousness, acute stress, somatization/ conversion disorders.
Adaptive disorder		Life stage problems in adults.
Personality disorder		Personality disorders.
Cognitive impairment		Senile feelings/behavior, memory disorders, dementia.
Others		Sleep disturbances, feeling/feelings of irritability/anxiety, decreased sexual desire, absence/loss of sexual satisfaction, preoccupation with sexual preferences, stuttering/spasmodic dysphemia/tics, enuresis, encopresis, specific learning disabilities, fear of mental illness, mental disability/disability, other psychological/mental signs/symptoms, suicide/suicide attempt, neurasthenia/chronic fatigue syndrome, phobia/compulsive disorder, hyperkinetic disorders, post-traumatic stress disorder, mental retardation, anorexia nervosa/bulimia, other psychological/ mental problems.
No diagnosis specified		

Table 2		Classification of diagnostic groups based on the International Classification of Diseases-10th version (ICD-10)
Diagnostic group		ICD-10 diagnoses
Psychotic disorder		Schizophrenia, schizotypal disorder, delusional disorder and other non-mood related psychotic disorders (F20-F29).
Affective depressive disorder		Major depressive disorder, single episode (F32). Major depressive disorder, recurrent (F33). Dysthymic disorder (F34.1).
Bipolar affective disorder		Manic episode (F30). Bipolar disorder (F31). Cyclothymic disorder (F34.0).
Substance use disorder		Mental and behavioral disorders due to psychoactive substance use (F10-F19).
Anxiety disorder		Phobic anxiety disorders (F40). Other anxiety disorders (F41). Dissociative and conversion disorders (F44). Somatoform disorders (F45). Other nonpsychotic mental disorders (F48).
Adaptive disorder		Reaction to severe stress, and adjustment disorders (F43).
Personality disorder		Disorders of adult personality and behavior (F60-F69).
Cognitive impairment		Vascular dementia (F01). Dementia in other diseases classified elsewhere (F02). Unspecified dementia (F03).
Others		Mental disorders due to known physiological condition (F04-F09). Behavioral syndromes associated with physiological disturbances and physical factors (F50-F59). Other single mood disorders (F38). Unspecified mood [affective] disorder (F39). Intellectual disabilities (F70-F79). Pervasive and specific developmental disorders (F80-F89). Behavioral and emotional disorders with onset usually occurring in childhood and adolescence (F90-F98). Mental disorder, not otherwise specified (F99).
No diagnosis specified		

3. RESULTS

In Villaverde MH, 1050 new patients referred from PC were attended during 2016, which formed the sample of this study.

Of the patients referred by the different Health Centers, 24.86% (261) were referred by Los Ángeles Health Center, 19.33% (203) by San Andrés Health Center, 18.67% (196) by Los Rosales Health Center, 11.14% (117) by San Cristóbal Health Center, 11.14% (117) by El Espinillo Health Center, 10.29% (108) by Potes Health Center and 4.57% (48) by Perales del Río Health Center. The mean age of the sample was 48.01 ± 17.41 (median, 47) years.

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The sample was made up of more women than men, with 33.9% (356) men and 66.1% (694) women. More referrals were made to Psychiatry than to Psychology, with 76% (798) of new consultations to Psychiatry and 24% (252) of new consultations to Psychology.

The overall *kappa* coefficient between the diagnoses made by PC and MH was 0.383 (95% CI 0.333-0.433). The percentage of diagnostic coincidence between PC and MH was 47.69%.

The diagnostic groups with the lowest concordance were adjustment disorder (*kappa*: 0.200), anxiety disorder (*kappa*: 0.242) and depressive affective disorder (*kappa*: 0.340). The diagnostic groups with the highest concordance were bipolar disorder (*kappa*: 0.816) and psychotic disorder (*kappa*: 0.689).

The analysis of diagnostic concordance between PC and MH is shown in Table 3, with the diagnostic groups ordered according to the *kappa* index.

The diagnostic concordance between PC and MH according to the different diagnostic groups, indicating the most frequent diagnosis in MH among those not coinciding with PC, is shown in Table 4, ordering the diagnostic groups according to the percentage of coincidence between PC and MH.

Adaptive disorder was the most frequently diagnosed diagnostic group in the MH among those not coincident with PC (38.99%), with anxiety disorder being the PC diagnostic group in which the MH most frequently diagnosed an adaptive disorder (36.91%), followed by the group with no diagnosis specified (36.60%) and finally by depressive affective disorder (23.56%). In addition, of the cases diagnosed as an adaptive disorder by MH, only 28.21% of them had been diagnosed

Diagnostic group	<i>Kappa</i>	CI 95%
Psychotic disorder	0,816	0,639-0,993
Affective depressive disorder	0,689	0,534-0,843
Bipolar affective disorder	0,646	0,501-0,790
Substance use disorder	0,622	0,343-0,901
Anxiety disorder	0,504	0,311-0,697
Adaptive disorder	0,340	0,272-0,407
Personality disorder	0,242	0,179-0,303
Cognitive impairment	0,200	0,141-0,258

All p < 0,01

The most frequent diagnostic group in MH was the adaptive disorder with a percentage of 34.10% (358), while the percentage of adaptive disorders within the PC diagnoses was 16.67% (175). The most frequent diagnostic group in PC was anxiety disorder with a percentage of 30.38% (319), while in MH the percentage of anxiety disorders was 16.67% (175).

The group with no specified diagnosis accounted for 23.81% (250) of PC diagnoses, decreasing to 9.90% (104) in MH.

4. DISCUSSION

In the present study, a low diagnostic concordance between PC and MH can be observed, with a diagnostic coincidence in only 47.69% of patients with an overall *kappa* coefficient of 0.383 (95% CI 0.333-0.433).

An analysis of the data according to each diagnostic group shows large variations between them, and it is striking that the most prevalent diagnostic groups were those with the lowest concordance, these being adjustment disorder, anxiety disorder and depressive affective disorder. In contrast, bipolar affective disorder and psychotic disorder, less prevalent entities with respect to the previous ones, had the highest concordance rates. A possible explanation for this could be that the more serious disorders, on the one hand, present more easily identifiable symptoms and, on the other hand, given their seriousness, generate greater dedication on the part of the physician in the examination and taking of the clinical history, which leads to an improvement in the diagnostic capacity.

According to the results obtained, the most frequent pathology referred from PC was anxiety disorder (30.38%), which seems to be overdiagnosed if we compare it with the percentage of anxiety disorders diagnosed by MH (16.67%).

Table 4 Diagnostic concordance between Primary Care (PC) and Mental Health (MH) according to diagnostic groups

Diagnostic group	Number of cases diagnosed in PC	Number of cases diagnosed in MH	Coincidence percentage ^a	Most frequent diagnosis in MH among those not coincident with PC.
Psychotic disorder	19	27	84,21%	Anxiety disorder and cognitive impairment (5,26%)
Cognitive impairment	6	10	83,33%	Adaptive disorder (16,67%)
Bipolar affective disorder	11	11	81,82%	Psychotic disorder and substance use disorder (9,09%)
Substance use disorder	24	34	79,17%	Adaptive disorder (8,33%)
Personality disorder	14	25	71,43%	Anxiety disorder and adaptive disorder (7,14%)
Others	41	63	70,73%	Adaptive disorder (17,07%)
Adaptive disorder	175	358	57,71%	Affective depressive disorder (20,57%)
Affective depressive disorder	191	243	53,93%	Adaptive disorder (23,56%)
Anxiety disorder	319	175	30,91%	Adaptive disorder (36,91%)
No diagnosis specified	250	104	15,60%	Adaptive disorder (36,60%)

^aIt expresses the percentage of the total number of PC cases, in each of the diagnostic groups, that presented a diagnostic coincidence with MH

Depressive affective disorder and adjustment disorder are respectively the second (18.19%) and third (16.67%) most frequent diagnoses referred from PC. Both diagnoses seem to be underdiagnosed in PC, comparing the percentage of depressive affective disorders (23.14%) and adaptive disorders (34.10%) diagnosed in MH.

This implies that 69.09% of anxiety disorders referred from PC were not, according to the professionals of MH, patients with such diagnosis, being more than a third of them adaptive disorders.

In addition, 23.56% of the patients diagnosed with depressive affective disorder by PC were diagnosed by MH as having an adaptive disorder, and 36.60% of the patients who did not have a specified diagnosis had an adaptive disorder according to MH.

On the other hand, there was a low identification of adaptive disorders by PC, with only 28.21% of the adaptive disorders that were diagnosed by MH having been identified as such in PC, with a greater proportion having been referred as anxiety disorders (32.68%). This implies that almost three quarters of the adaptive disorders referred from PC were not considered as such by the MH, with anxiety disorder being the diagnostic group most frequently referred as an adaptive disorder without diagnostic concordance.

The importance of this fact lies in the fact that adaptive disorders are nosological entities that are very different from anxiety disorders and depressive affective disorders, both in terms of their clinical features and their treatment, with the indications for referral for each being very different and, therefore, a correct diagnosis and appropriate referral are necessary for their proper management. Previous studies had also shown a difficulty in PC in identifying adaptive disorders as well as an overdiagnosis of depressive affective disorders^{12,13,14,15,18}.

As for severe mental disorder, giving this category to psychotic disorder and bipolar affective disorder, there is a high diagnostic concordance between PC and MH. It seems, therefore, that the most severe and complex pathologies are well identified in PC, however, within the common mental disorder there is a great discordance in the diagnosis.

When interpreting the data, the following limitation in the design of the study should be taken into account: in order to facilitate the analysis of the data, broad diagnostic groups were made based on the different diagnoses according to ICPC-2, in the case of PC, and according to ICD-10 in the case of MH.

It can be deduced from this study that diagnostic agreement between PC and MH is low, being very heterogeneous among the different disorders, with the

lowest rates of diagnostic agreement in common mental disorders. On the other hand, it is necessary to improve the diagnostic agreement between PC and MH, which could favor the quality of care offered to patients and a lower number of referrals of patients with common mental disorders that could be managed from PC. This would probably require consensus meetings and the creation of working groups between PC and MH, as well as a better referral system between both professional teams.

CONFLICT OF INTEREST

The authors of this work declare that they have no conflicts of interest.

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