Longitudinal descriptive study of diagnostic concordance between primary care and psychology support program in primary care

Cristina García-Pedrajas1*, Espe Marsó Bayona1*, Olga Pérez Ibáñez2, Susana Ochoa Guerreiro1,2, and Cristina Ventura Fornas1

1 Parc Sanitari Sant Joan de Diu (Spain).
2 CIBERSAM - Centro de Investigación en Salud Mental (Spain).

Abstract: Background: The objective was to describe the characteristics of a primary support program (PSP) and to analyze diagnostic concordance between primary care physicians (PCP) and psychologists over three years. Material and method: A descriptive, longitudinal prospective study over three years at five primary care centers in Barcelona. The sample was 1722 patients referred to psychology services. Descriptive statistics used to analyze sociodemographic variables and Cohen's Kappa to assess agreement. Results: The average waiting time between referral and first visit was 37.54 days. Stable over the three years were the number of high (34%), the number of cases of not presenting to first visit (21.4%), treatment dropout (19.9%), and referrals to other services (19.5%). There was a low overall concordance between PCP and psychologist. PCP most frequently diagnosed anxiety disorders. Psychologists most frequently diagnosed depression and anxiety. The highest concordance (2010: 0.343, 2011: 0.456, 2012: 0.662 Kappa Index) was observed in the diagnosis of eating behavior disorders followed by depression (2010: 0.302, 2011: 0.367, 2012: 0.362) and anxiety (2010: 0.245, 2011: 0.278, 2012: 0.296). Conclusions: PSP offers specialized brief interventions in primary care. Progressive increase of slight concordance was observed between professionals, while remaining close to the baseline percentage, indicating the need for increased opportunities for consultation.

Keywords: Mental health; Primary care; Psychologist; Diagnostic concordance; Primary care physician.

Introduction

Problems related to mental health are presented with a high prevalence in the field of primary care (PC) (Pastor, 2008; Serrano-Blanco et al., 2010; Ezquijaga-Terrazas, 2011), generating a great demand for treatment (Calderon et al., 2014; Espinosa-Sabina and Castilla-Pérez, 2002; Moré-Herrero, 2013; Sanchez-Gonzalez et al., 2011). Thus, the prevalence of mental disorders in this context has been estimated at 20-55% (Miranda-Chueca et al., 2003; Téllez-Lapeira et al., 2005). The recognition of this situation has led initiatives for a specialized and integrated approach to primary care. Internationally, especially in the US and British territories (World Health Organization et al., 2008; National Institute for Health & Clinical Excellence, 2011), pioneering projects are being developed based on the idea of collaboration models between PC and Mental health (MH). These models promote a multidisciplinary approach to the care and monitoring of patients and enhanced interprofessional communication and training care (Bower, 2002; Kelly et al., 2011; Patel and Saxena, 2014; Tanielian et al., 2000; Thielke, 2011).

Regarding the role of Clinical Psychology in this area, in 2007 in the UK a program called ‘Improving Access to Psychological Therapies’ (IAPT) was implemented. This program is addressed to adults with common mental disorders, especially depression and anxiety, and it is based on the use of cognitive-behavioral techniques, following the recommendations of the NICE guidance (National Institute for Health & Clinical Excellence, 2011; Cano-Vindel, 2013). According to the guidelines, the implementation of psychological treatments in OC is an effective and cost-effective approach for mild to moderate mental disorders (National Institute for Health & Clinical Excellence, 2011).

Nationally, there are psychological treatments protocols for emotional disorders in PC based on evidence (Barcons et al., 2014; Cano-Vindel, 2013) and various experiences have been implemented in different health services (Barcons et al., 2014; Calderon et al., 2014; Perez-Ibáñez et al., 2015).
In 2006, in Catalonia the Program Support to Primary (PSP) was created within the Director Plan for Mental Health and Addictions, where a multidisciplinary team of specialists in Mental Health providing assistance and training in Primary Care Centers (PCC) (Generalitat de Catalunya, 2006). The goal was to improve care for the psychological needs of the user. In this program, a clinical psychologist performed brief psychological interventions (individual, family and/or group) with patients referred from a Primary Care Physician (PCP). All the cases were review in interconsultation meetings (Pérez-Ibáñez et al., 2015).

This article aims to describe the sociodemographic and clinical characteristics of attended patients in 5 PCCs in the province of Barcelona during the years 2010, 2011 and 2012. Second, we also aim to analyze the rate of diagnostic agreement between the PCP and the psychologists in the program.

We intend such analysis to determine the profile of the patient treated by the psychologist in PC and quantitative variables of psychological intervention. We understand that this study may help improve the planning of future resources use. Thus, we believe that analyzing data reflecting interprofessional agreement can provide a reliable track for improving training and communication between professionals of both teams.

Method

Design

This was a prospective descriptive study over the years 2010, 2011 and 2012 in five PCCs in the province of Barcelona.

Participants

The participating centers were: PCC Can Bou (linked to MHC Castelldefels), PCC Jaume Soler and PCC Marti and Julia (linked to MHC Cornella), PCC Canaletes and PCC Montcada i Reixac (linked to MHC Ripollet-Cerdanyola-Montcada i Reixac).

Those patients referred to Psychology PSP through the referral form issued by the PCP (N = 1722) were followed up throughout the study years until the close of the psychological process, with the intention of collecting information about the intervention.

Patients from other PCPs, specialized professional non-psychologist (PSP psychiatry, PSP nursing), and any professionals from adult mental health centers (MHC), were excluded from the study.

Instruments

The referral sheet (which reflects the reason for consultation and ICD-10 PCP diagnostic referral criterion) was used to collect baseline data.

Process

On the first visit a series of data were collected by the psychologist, including the review of the diagnosis made by the PCP. All patients were followed up for their connection to the PSP and during successive visits completed study information (see Figure 1). Patients who consulted psychology services again after discharge during the study were also recorded.

In the evaluation protocol the following information was collected. At baseline:

- Socio-demographic characteristics of the sample (age, gender, employment status, psychopathological background, reason for consultation).
- Reason for consultation with the PCP. This variable was classified into three groups: ‘psychopathological problems’ or ‘family problems’, ‘work and/or social problems’ and finally ‘other reasons’ (medical board, reports, ...).
- Source of referral: Physician or referral through another PSP professional team (nurse or psychiatrist).
- PCP referral sheet diagnosis based on ICD-10 criteria. The main diagnosis was used in the case of comorbidity.
- ICD-10 diagnosis by the psychologist from the PSP.

The following information was collected visits:

- Total number of visits of psychological intervention: First visit (about 60 minutes) and successive visits (about 30 minutes) with a maximum of 15 days between the first visit and subsequent visits.
- Types of visits (individual, family, mixed and group).
- Interconsultations (if the particular case was previously commented upon in an interprofessional meeting).
- Closing psychological process: Considered as ‘Not attending first visit’, ‘discharged’, ‘abandonment’, and/or ‘referral to another resource’.

The research project was approved by the Committees for Research Ethics and Parc Sanitari Sant Joan de Deu (PSSJD). All participants were asked to sign their informed consent.
Figure 1. Description of the evaluation process in the participating centers.

Statistical analysis

Statistical analysis was performed by descriptive statistics. The file was segmented for 2010, 2011 and 2012, and comparisons were made for each of these years. The Cohen Kappa index and the percentage of agreement between diagnoses of PCP and mental health were calculated according to criteria of Landis and Koch (1977), with 0.4-0.6 being moderate agreement, 0.6-0.8 substantial agreement, and 0.8-1.0 perfect agreement. The statistical program used was SPSS version 22 (IBM Corp. IBM SPSS Statistics 2013. Released for Windows, Version 22.0 Armonk, NY. IBM Corp).

Results

The sample consisted of 1,722 patients: 522 patients in 2010, 548 patients in 2011 and 652 patients in 2012.

Table 1 shows the sociodemographic characteristics of the sample in each year of study. A total of 70.7% of the entire sample were women, showing no significant differences
over three years. Over the three years age became increasingly significant. Regarding the employment situation it should be noted that significant differences were found over three years, being below the number of sick leaves during the last year. Significant differences were found regarding previous treatments received, with an increase in other treatments of different of PCP professional (private centers and other public or private care units) in the last two years.

**Table 1.** Socio-demographic characteristics of people attended by psychologist of the PSP in 2010, 2011 and 2012.

<table>
<thead>
<tr>
<th>Gender</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>( \chi^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Man</td>
<td>148</td>
<td>175</td>
<td>181</td>
<td>27.8%</td>
</tr>
<tr>
<td>Woman</td>
<td>374</td>
<td>373</td>
<td>471</td>
<td>.246</td>
</tr>
</tbody>
</table>

**Table 2.** Description of the processes performed during the three years.

<table>
<thead>
<tr>
<th>Reason for consultation</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>( \chi^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychopathology</td>
<td>365</td>
<td>380</td>
<td>459</td>
<td>70.8%</td>
</tr>
<tr>
<td>Family</td>
<td>110</td>
<td>114</td>
<td>132</td>
<td>20.4%</td>
</tr>
<tr>
<td>Others</td>
<td>42</td>
<td>51</td>
<td>57</td>
<td>8.8%</td>
</tr>
</tbody>
</table>

**Table 3.** The most frequent diagnoses made by PCP were ‘anxiety’ and ‘without definitive diagnosis’ (Figure 2), while the most common by psychologist were ‘depression’, ‘anxiety’ and ‘adjustment disorder’ (Figure 3). Regarding the agreement between the diagnoses recorded by PCP and psychologists, greater concordance was observed in the diagnoses of ‘disorder eating’, ‘depression’ and ‘anxiety’ over the three years (Table 3). An increase in Cohen Kappa in the agreement between PCP and psychologist was found in diagnoses of ‘anxiety’, ‘depression’, ‘work problems’, ‘mixed disorder’, ‘eating disorder’ and ‘personality disorder’, observed over the three years. Kappa coefficients are higher than 0.40 in ‘eating disorder’ in 2011 (0.456) and in 2012 (0.662) and ‘work problems’ in 2012 (0.498).
Regarding patient profile attended by psychologist in the PSP, similar results were found in the published literature. From the first visit psychologists are performing diagnostic and psychotherapeutic intervention. It also highlights the role of the psychologist filtering mild/moderate pathology problems remained stable over the three years. This is important because it indicates that approximately one third of the population started with the illness for the first time, so psychological treatments could be decisive in preventing chronicity (Aragonés et al. 2013; Barcons et al., 2014).

The average number of visits for each patient, despite being statistically different over the years, was not clinically relevant because it remained stable at between 3 to 4 visits. It is an acute intervention, reactive and of mild disease, with a psychological approach brief and on demand. Clinical psychologist immersed in a primary care adapted to this context and he/she works with the ‘registration scheme of primary care’; more agile and focused in demand of the patients. From the first visit psychologists are performing diagnostic and psychotherapeutic intervention. It also highlights the role of the psychologist filtering mild/moderate pathology from severe. The latter cases are attended in the Center for Mental Health Adults (MHC). We believe that this filter...
should be handled by the specialist psychologist in mental health as suggested by Moré Herrero (2013), because this could ensure tighter diagnosis of demand and referral to other community resources. All these functions are performed both in direct attendance (face to face) and interconsultation (distance) with specialists from PC (Cuesta et al., 2000; Franquelo et al., 2008; Hornillos Jerez et al., 2009; Landa et al., 2008; Ordoñez, and Gómez-Ullate, 2009).

If we analyze the closure of the psychotherapeutic process, we note that from the total of discharged patients, only 6.5% reapplied for specialized attention during this study period. We believe that this low percentage is an endorsement of the benefit of psychological intervention framed in the PSP.

Also in the third year the percentage of absenteeism (patients not attending first visit) increased significantly. In parallel we note an increase in the waiting time from referral to first psychologist over three years, which was also detected by Ortiz-Lobo, 2006. This may mean that during the waiting time the problem was solved or the referral was motivated more by expectations of the doctor than by the patient’s own. However, the number of dropouts decreased over the three years, which suggests that referrals by the PCP became increasingly appropriate. In fact, the dropout rate is similar to that for specialized care (Espinosa-Sabina and Castilla-Pérez, 2002; Ortiz-Lobo, 2006; Serrano et al., 2014).

The main reason for consultation was psychopathological problems, suggesting that the referral was appropriate since the objective of the program was to address mild and moderate mental disorders. The literature review found that emotional disorders are the most common reason for PC consultation (Barcons et al., 2014; Calderon-Gomez et al., 2014; Goñi et al., 2008; Robles et al., 2009). These results agree with those of the present study, while the most prevalent disorders were, in the opinion of psychologist, ‘depressive disorder’, ‘anxiety disorder’ and ‘adjustment disorder’ over three years.

The most frequent diagnosis by PCP was ‘anxiety disorder’ which has been increasing over the years. The second most prevalent diagnosis was ‘without diagnosis’ showing a progressive decrease. In almost 50% of cases interconsultation was performed (space of training and coordination of cases). It is expected that the work done to consolidate inter-clinical contact between professionals helped bring about better diagnoses by the doctors (Hornillos Jerez et al., 2009; Landa et al., 2008; Moré-Herrero, 2013; Ordoñez and Gómez-Ullate, 2009).

Regarding the diagnostic agreement, we have found a low overall agreement between diagnoses of PCP and psychologist of the program; only the 'eating disorder' exhibited acceptable values and good agreements. These results are not surprising when we consider that they have different professional equipment, training, procedures, functions and assessment purposes. However, a slight increase in agreement was observed over three years in the diagnoses of 'anxiety', 'depression', 'work problems', 'mixed disorder', 'eating disorder' and 'personality disorder'. This points up the ease of detection of anxiety and depressive symptoms, as well as behavioral and eating disorders, from the PCP, given the amalgam of existing psychopathology. The psychologist, in the specialized visit, can refine the diagnosis, often directing the anxious-depressive detected by the PCP by adjustment disorder, as also seen in other studies (Landa et al., 2008).

**Conclusions**

Typical interventions by the clinical psychologist in PC are short and demand-focused, based on the patient profile: usually a woman, 40 years old, with no previous history, occupationally active, and with presence of anxiety symptoms (assessed by PCP) and adaptive symptoms (assessed by psychologist).

The low concordance found between professionals suggests the importance of increasing training, and interconsultation with PCP.

Regarding the limitations of the study, it should be considered that part of this research is based on the model of the PSP of our institution, which may limit the generalizability of the results to other models. In addition, the fact that it only considers the first diagnosis in cases of comorbidity may obviate relevant clinical data. In addition, the broad categories of disorder (e.g. "anxiety disorder") rather than specific categories could limit the interpretation of the results. However, we need to group the data in order to work with them in a more comprehensible manner. Furthermore, data on new visits of patients treated and discharged during these three years were recorded only during the time period of the study, so patients that returned to attention after this period were not reflected.

Some variables that might be important were not included in the study, such as medication and referral to other professionals. For this reason, we could not evaluate the evolution of these variables over the three years period.

Finally, our aim was to reflect the reality of the work of psychologist in primary care, where early intervention promotes prevention, detection of the disorder, appropriate treatment and non-chronicity of the disorder. This type of approach affects the reduction of financial and social costs that these patients would normally represent (Barcons et al., 2014; Gili et al., 2012; Robles et al., 2009; National Institute for Health & Clinical Excellence, 2011).

We must emphasize the limited number of studies that we found in this area. However, we also think that this represents an incentive for future research in order to optimize existing resources and this model of collaborative work. It is necessary to improve communication and coordination among professionals in order to optimize diagnosis and treatments.

**Acknowledgements.** Thanks to Sonia Aparicio, Inés Cots and AP-PSI Barcelona Research Group.
References


(Article received: 17-02-2017; revised: 04-05-2017; accepted: 16-05-2017)