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Rates of First Episode of Psychosis in a Defined Catchment Area in Greece

Vaios Peritogiannis[1,*], Christos Mantas[2], Athina Tatsioni[3] and Venetsanos Mavreas[2]

[1]*Mobile Mental Health Unit of the Prefectures of Ioannina and Thesprotia, Society for the Promotion of Mental Health in Epirus, Ioannina, Greece*

[2]*Department of Psychiatry, Medical School, University of Ioannina, Ioannina, Greece*

[3]*Department of Internal Medicine, University of Ioannina, Medical School, Ioannina, Greece*

Abstract: This is the first Greek study presenting epidemiologic data on first-episode psychosis (FEP) patients in a defined catchment area. Data for first episode psychotic patients during a two-year period (2008 and 2009) were obtained by all the mental health providers in the area, public or private. A total of 132 FEP patients were examined in the 2-year period in the catchment area. Most of the patients (61.4%) were diagnosed and treated by private practicing psychiatrists. Statistical analysis showed no differences between the two sectors in terms of patients' age, gender, family and social status, profession and duration of untreated psychosis (median duration 6 months). Patients who were abusing substances and had no family psychiatric history were less likely been treated in the public sector. Immigrants comprised only a small proportion of the patients, probably because they have difficulties in accessing the mental health system.

Keywords: Early intervention, First episode of psychosis, Private sector, Public sector.

INTRODUCTION

Schizophrenia and related psychoses are chronic disorders with an onset usually in early adulthood that affect patients all over their life and generally have moderate prognosis. Several previous [1, 2] and more recent [3, 4] studies have suggested that early intervention is crucial for the improvement of the prognosis and outcome of these disabling disorders both medium- and long-term. However, the results of such studies have been criticized by others, and it is supported that the effectiveness of current protocols of early intervention is not superior to standard care [5, 6]. Moreover, it has been recently proposed that adequate funding and good clinical governance are critical in ensuring service quality and maintaining continuity of care, whether the early intervention in psychosis service is specialized or integrated within a generic mental health team [7]. Despite the ongoing debate about the effectiveness of specialized early intervention services, at recent years several such services have been developed worldwide for the early detection, intervention and comprehensive care of people who experience a first episode of psychosis (FEP).

The first step for the establishment of new services is the estimation of the needs of a defined area. This study aimed to explore the needs and provide epidemiological data on FEP patients in the prefectures of Ioannina and Thesprotia in Greece. This is the first Greek study on the rates of first episode of psychosis in a defined catchment area. The epidemiologic survey was performed in the context of the recently established, early intervention service (EIS) of the University Hospital of Ioannina [8].

*Address correspondence to this author at the Mobile Mental Health Unit of the Prefectures of Ioannina and Thesprotia, Society for the Promotion of Mental Health in Epirus, Ioannina, Greece; Tel: 00302651021227; Fax: 00302651021227; E-mail: vaios.peritogiannis@medai.gr

MATERIALS AND METHODOLOGY

The catchment area of the prefectures of Ioannina and Thesprotia belongs to the Epirus region, north-western Greece, and has a population of about 220000 inhabitants. Mental health services of the area comprise the inpatient and outpatient psychiatric department of the University Hospital of Ioannina, the outpatient psychiatric department of the General State Hospital, the outpatient department of the Social Insurance Organization (IKA), and the Mobile Mental Health Unit (MMHU I-T) which delivers services in rural and remote areas. Patients may also be treated by private practice psychiatrists in both prefectures. Although in Greece care is public, a large proportion of patients prefer to be examined by private practice physicians. There is no registration system for the first diagnosed psychotic patients, so for the performance of a reliable epidemiological survey data should be obtained from all those who may have examined and treated such patients. Data for first episode psychotic patients during a two-year period (2008 and 2009) were obtained by reviewing the medical records of the patients examined in the two hospitals, IKA and the MMHU I-T. For patients treated in the private sector, data was obtained by personal communication with the 12 treating psychiatrists of the area for the aforementioned period. All the procedures were approved by the Ioannina University Hospital's ethics committee.

All diagnoses were made by treating clinicians according to ICD-10 criteria, as this classification is officially used in the country. However, only clinicians of the EIS regularly

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use a standardized assessment interview, while their private sector colleagues rely only on usual clinical assessment. Information regarding stability of the diagnoses during the study period was not available. However, there is evidence that stability of ICD-10 psychotic-disorder diagnoses over time is high [9]. Duration of Untreated Psychosis (DUP) was calculated by the first author (VP) with the retrospective application of the principles of the Symptom Onset in Schizophrenia (SOS) inventory [10] to the patients' information as recorded at their charts (public sector), or as provided by treating psychiatrists (private sector).

For the determination of patients' socio-economic status we used an adapted form of the UK classification system, which has been used in previous research [11]. More specifically, three social classes were defined, namely upper (corresponding to the class I), middle (comprising classes II and III) and lower (comprising classes IV and V), respectively. This adaptation was based on economic criteria of the patients' families rather, than on their working status, since a large proportion of patients were very young, were still students and may have never worked. The Statistical Package of the Social Sciences (SPSS 19.0) was used to perform all analyses. Analysis was made with the use of the student t-tests and the statistical level for significance was chosen at $p<0.05$.

RESULTS

A total of 132 FEP patients were examined in the 2-year period in the catchment area. Eight patients (6%) were immigrants. Most of the patients (81 or 61.4%) were diagnosed and treated by private practicing psychiatrists. The majority of patients examined in the public sector (45 out of 51, 88.2%) were referred to the EIS. Demographic and clinical characteristics of the patients are presented in Table **1**. Data regarding base-line symptom severity were not available for private sector patients, because private practice psychiatrists do not regularly use assessment tools.

Statistical analysis showed no differences between the two sectors in terms of patients' age, gender, family and social status, profession and DUP. The median DUP was 6 months for both sectors. Education was associated with the treatment setting selection, and college education was predictive of the use of the public sector ($p<.001$). First episode patients who had a history of alcohol/substance abuse were more likely been treated in the private sector ($p=.021$). A positive family history of a psychiatric disorder was associated with treatment in the public sector (OR 0.43, 95% CI 0.20-0.92, $p=0.028$). There was an interaction of the variables "substance abuse" and "family history". Logistic regression showed that treatment setting was determined by the combination of these two variables, and that patients who were abusing alcohol or substances and had no family psychiatric history were less likely been treated in the public sector (OR 0.19, 95% CI 0.04-0.90, $p=0.036$).

DISCUSSION

The acquisition of data on the rates on FEP in a defined area is essential for planning and providing mental health services. We were able to identify 132 FEP cases who received treatment in every available setting in our catchment area in a 2-year-period. This makes an annual incidence rate of 30 new cases per 100000 which is within the range reported in previous research in different countries [12]. In our study most patients (61.4%) have been exclusively treated by private practicing psychiatrists. This may reflect patients' attitudes toward hospital psychiatric treatment; or it may be that the EIS unit, where most public sector cases were referred had just been established at the time of the study. Moreover, at that time financial crisis in Greece was in the beginning and more patients could afford treatment in the private sector. However, this is a relevant finding, because most patients did not receive the comprehensive multidisciplinary care delivered by the EIS unit of the University Hospital of Ioannina. Moreover, it has been suggested that specialized first-episode psychosis services may effectively address the issues of involving and educating families about psychosis as well as stigma [13]. It is not known whether this is the case in the private sector in our country. On the other hand, preference for the psychiatric private sector is widespread in Western countries, and there is evidence that, with the exception of some University centers, the quality of treatment in the public sector is poor [14, 15].

Notably, there was not a single case of first episode patient treated by the MMHU, but patients from rural areas would be rather examined by outpatient hospital services or private practicing psychiatrists. The MMHU delivers services since 2007 and has contributed significantly to the reduction of hospitalizations of chronic psychotic patients living in rural and remote areas of the prefectures of Ioannina and Thesprotia [16]. We assume that perceived stigmatization of FEP patients and their families in these rural areas prevents them from seeking help by a local mental health service.

Immigrants comprised only a small proportion of the patients (8 cases, 6%). The immigrant population in our catchment area is estimated at 4.4% [17], mostly at working age. It has been demonstrated, that migration is associated with high incidence rates of psychosis [18]. In a recent study at a socioeconomically deprived area of inner London immigrants were over-represented among FEP cases. From a total of 484 FEP patients, only 23.1%% were British, while the proportion of British in the population at risk was as high as 41.6% [19]. Recent evidence in our country suggests that immigrants experienced higher degrees of inequity in primary health care that is possibly caused by their restricted access to social insurance health care [20]. This may be the case of some FEP cases which go unrecognized in this population. We assume that FEP immigrant patients may have problems of access to the mental health system, resulting from socioeconomic reasons, insurance issues and barriers within the system, i.e. difficulties in language and little appreciation of the culture and adversities of this population by mental health staff and primary care physicians. Conceivably, efforts should be made for the identification of such cases by the mental health system.

Duration of untreated psychosis was not significantly different for patients been treated in the private or the public sector (mean duration 18.2 and 22.5 months, respectively). The median DUP was 6 months for both sectors. The interval between the onset of psychotic symptoms and treatment initiation has been shown to be a predictor of outcome, and shorter DUP has been associated with better chance for recovery [21, 22]. It is unknown whether private sector care

Table 1. FEP Patients' Demographic and Clinical Characteristics

	Private Sector (n=81)	Public Sector (n=51)	p
Age (years, mean, SD)	31.5 (10.597)	29.1 (8.196)	NSS
Gender (male, %)	72	64.7	NSS
Family status (single, %)	75.3	92.9	NSS
Social Status (%)			
Lower	34.6	43.1	NSS
Middle	51.9	52.9	
Upper	13.6	3.9	
Education (%)			
Primary	29.6	9.8	
High school	27.2	15.7	
College	11.1	52.9	P<.001
University	32.1	21.6	
Profession (%)			
Unemployed	28.4	41.2	NSS
Full time job	48.1	37.3	
Student	23.5	21.6	
DUP (months, SD)	18.2 (35.31)	22.5 (38.15)	NSS
History of alcohol/substance abuse	24 (29.6%)	6 (11.8%)	P=.021
Family history for mental illness	20 (24.7%)	22 (43.1%)	P=.028

providers can make efforts to reduce DUP, but public health services should arrange initiations for facilitating access to mental health care and educating the public regarding psychotic illness in young persons.

According to statistical analysis, education was associated with treatment setting selection, and having or being studied in college predicted treatment in the public sector. This finding is not easy to be interpreted and it is not known whether this level of education contributes to the development of a positive attitude toward the public health system. Another finding of statistical and probably clinical significance was that patients with a history of alcohol or substance abuse were more likely to be treated in the private sector. This finding could be interpreted in several ways. It may be possible that the public sector physicians tend to underestimate the role of alcohol or substance abuse in psychopathology. This is supported by the relatively low rates of 11.8% of alcohol/substance abuse recorded for public sector patients, compared to previously reported, much higher rates [23]. Or, that dual diagnosis patients would prefer the perceived less restricted context of the private sector. No matter the explanation, dual diagnosis patients, who are a particular challenging subgroup, would not receive a more intensive and comprehensive care provided by the multidisciplinary EIS team.

The selection of the private sector as treatment setting was found merely to be determined by the combination of having a history of alcohol or substance abuse and a negative family psychiatric history. This means that patients with a positive family history for mental disorder would prefer to be treated in the public health system. It is difficult to interpret this finding. Perhaps the families of those FEP patients, who were familiar with mental illness, were aware of the early intervention service of the University Hospital, where most public sector cases were treated. However, there is evidence that families with a past history of psychiatric hospitalization of a family member were less likely to recommend other family members to mental health services, as indicated by the long delay between onset of psychotic symptoms and first admission which was found to be independently predicted by a family history of psychiatric hospitalization [24, 25].

Regarding illness severity at baseline, we have to note that PANSS scores were not available for patients treated in the private sector. Probably these patients might be less severely ill, to be treated as outpatients. Patients requiring hospitalization would be treated, sometimes involuntarily, by the EIS.

Our data are supposedly complete because we obtained data from every resource in the area patients could seek mental health care. A small number of cases may have been missed if they have been examined in other cities, such as the capital of Greece, Athens or the second large city, Thessaloniki. Other cases may have been missed if they were hospitalized in private hospitals in other cities, as in our region there is no private inpatient facility. A possible explanation for such a preference may be the perception that in those large cities with well-organized private facilities, FEP patients would receive better care; or it was the perceived stig-

matization that led patients and families to seek care in other cities. We believe that the number of such cases is small, and we also assume that these patients were difficult to receive optimal long term care due to distance from their treating service which would render regular follow-up difficult.

It should be mentioned that the structure of the health system in Greece which is largely based on private practice physicians [26] makes any epidemiologic survey performance a difficult task. For example, in the large population cities of Athens and Thessaloniki where there are many psychiatrists working in private practice, an effort to collect epidemiological data would be extremely difficult.

This study has several limitations. Patients' diagnoses at the private sector were made according to usual clinical examination and history of the patients, without the use of a diagnostic interview, or other instrument. The validity and reliability of the diagnosis may thus be questionable in some cases. Moreover, DUP was calculated retrospectively, by applying the principles of SOS to the information at patients' charts, without interviewing the patients and other informants. Furthermore, baseline severity of psychopathology was not available for private sector patients.

CONCLUSION

In our catchment area most first episode patients are been treated by private sector clinicians. The selection of the private sector as treatment setting was found merely to be determined by the combination of having a history of alcohol or substance abuse and a negative family psychiatric history. Immigrants comprised a small proportion of the patients, despite evidence of higher rates of psychotic disorders in this population. The results of this first Greek study on the rates of first episode of psychosis in a defined area are relevant and may inform clinical practice and mental health policy.

CONFLICT OF INTEREST

The authors confirm that this article content has no conflicts of interest.

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REFERENCES

[1] Craig TKJ, Garety P, Power P, *et al*. The Lambeth Early Onset (LEO) Team: randomised controlled trial of the effectiveness of specialised care for early psychosis. BMJ 2004; 329: 1067-70.

[2] Petersen L, Jeppesen P, Thorup A, *et al*. A randomised multicentre trial of integrated versus standard treatment for patients with a first episode of psychotic illness. BMJ 2005; 331: 602.

[3] Larsen TK, Melle I, Auestad B, *et al*. Early detection of psychosis: positive effects on 5-year outcome. Psychol Med 2011; 41: 1461-9.

[4] Hegelstad WT, Larsen TK, Auestad B, *et al*. Long-term follow-up of the TIPS early detection in psychosis study: effects on 10-year outcome. Am J Psychiatry 2012; 169: 374-80.

[5] Malla A, Pelosi A. Is Treating Patients With First-Episode Psychosis Cost-Effective? Can J Psychiatry 2010; 55: 3-8.

[6] Burns T. Early intervention in psychosis. Br J Psychiatry 2010; 197: 415.

[7] Carr V. Time to move on? Commentary on the early intervention in psychosis debate. Aust N Z J Psychiatry 2012; 46: 384.

[8] Mantas C, Mavreas V. Establishing and operating an early intervention service for psychosis in a defined catchment area of northwestern Greece within the context of the local mental health network. Early Interv Psychiatry 2012; 6: 212-7.

[9] Salvatore P, Baldessarini RJ, Tohen M, *et al*. McLean-Harvard International First-Episode Project: two-year stability of ICD-10 diagnoses in 500 first-episode psychotic disorder patients. J Clin Psychiatry 2011; 72: 183-93.

[10] Perkins D, Leserman J, Jarskog F, *et al*. Characterizing and dating the onset of symptoms in psychotic illness: the Symptom Onset in Schizophrenia (SOS) inventory. Schizophr Res 2000; 44: 1-10.

[11] Skapinakis P, Weich S, Lewis G, *et al*. Socio-economic position and common mental disorders: Longitudinal study in the general population in the UK. Br J Psychiatry 2006; 189: 109-17.

[12] McGrath J, Saha S, Welham J, *et al*. A systematic review of the incidence of schizophrenia: the distribution of rates and the influence of sex, urbanicity, migrant status and methodology. BMC Med 2004: 2; 13.

[13] Gerson R, Davidson L, Booty A, *et al*. Families' experience with seeking treatment for recent-onset psychosis. Psychiatr Serv 2009; 60: 812-6.

[14] Leslie D, Rosenheck R. Comparing Quality of Mental Health Care for Public-Sector and Privately Insured Populations. Psychiatr Serv 2000; 51: 650-5.

[15] Kiil A. What characterises the privately insured in universal health care systems? A review of the empirical evidence. Health Policy 2012; 106: 60-75.

[16] Peritogiannis V, Mantas C, Alexiou D, *et al*. The contribution of a mobile mental health unit to the promotion of primary mental health in rural areas of Greece: a 2-year follow-up. Eur Psychiatry 2011; 26: 425-7.

[17] Migration Policy Institute. Statistical data on immigrants in Greece: An analytic study of available data and recommendations for conformity with European Union standards. Athens: Migration Policy Institute, 2004.

[18] Cantor-Graae E, Selten JP. Schizophrenia and migration: a meta-analysis and review. Am J Psychiatry 2005; 162: 12-24.

[19] Coid J, Kirkbride J, Barker D, *et al*. Raised incidence rates of all psychoses among migrant groups: findings from the East London first episode psychosis study. Arch Gen Psychiatry 2008; 65: 1250-8.

[20] Lahana E, Pappa E, Niakas D. Do place of residence and ethnicity affect health services utilization? Evidence from Greece. Int J Equity Health 2011; 10: 16.

[21] Perkins D, Gu H, Boteva K, Lieberman J. Relationship between duration of untreated psychosis and outcome in first-episode schizophrenia: A critical review and meta-analysis. Am J Psychiatry 2005; 162: 1785-804.

[22] Farooq S, Large M, Nielssen O, Waheed W. The relationship between the duration of untreated psychosis and outcome in low-and-middle income countries: A systematic review and meta analysis. Schizophr Res 2009; 109: 15-23.

[23] Larsen T, Melle I, Auestad B *et al*. Substance abuse in first-episode non-affective psychosis. Schizophr Res 2006; 88: 55-62.

[24] Verdoux H, Bergey C, Assens F, *et al*. Prediction of duration of psychosis before first admission. Eur Psychiatry 1998; 13: 346-52.

[25] O'Callaghan E, Turner N, Renwick L, *et al*. First episode psychosis and the trail to secondary care: help-seeking and health-system delays. Soc Psychiatry Psychiatr Epidemiol 2010; 45: 381-91.

[26] Economou C. Greece: Health system review. Health Syst Transit 2010; 12: 7.

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