ORIGINAL ARTICLE

Schizophrenic Disorders in Primary Care Mental Health

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Objectives. To determine the prevalence and incidence of schizophrenia and other psychoses in a mental health unit (MHU) closely connected to primary health care.
Design. Retrospective longitudinal study of the register of all patients with psychiatric illnesses detected in a specific geo-demographic and health care area.
Setting. Five basic health care areas of Barcelona, Spain (103 615 inhabitants).
Participants. MHU patients who had attended clinics due to mental health disorders during the period from 1982-2000 (N=21 236). Strict health and diagnostic criteria based on the DSM-4 classification were applied. All cases were validated using clinical history review and concensus.
Measurements. Incidence (in the last 3 years) and prevalence of schizophrenia and other psychoses in the whole period of study, both in the general population and in the risk population age group (15-54 years).
Results. In total, 838 patients complied with the diagnosis of suffering from schizophrenia (N=476) or other psychoses (N=362). The incidence of schizophrenia was 3.47/10 000 (95% confidence interval [CI], 2.3-4.6) in the general population and 5.09/10 000 (95% CI, 3.2-6.9) in the population at risk, and the prevalence of schizophrenia was 54.9/10 000 (95% CI, 41.8-50.1) in the general population and 80.7/10 000 (95% CI, 73.5-88) in the population at risk.
Conclusions. The MHU-primary health care interface can be a good place to detect and study schizophrenic syndromes and other psychoses, as long as they comply with the agreed health and research criteria.

Key words: Schizophrenia. Psychosis. Epidemiology. Risk factors. Prevention. Early detection.

TRASTORNOS ESQUIZOFRÉNICOS EN LA ATENCIÓN PRIMARIA A LA SALUD MENTAL

Objetivos. Determinar la prevalencia y la incidencia de la esquizofrenia y otras psicosis en una unidad de salud mental (USM) estrechamente vinculada con la atención primaria de salud.
Diseño. Estudio longitudinal, retrospectivo, del registro de todos los pacientes con psicopatología detectados en un área geodemográfica y asistencialmente delimitada.
Emplazamiento. Cinco áreas básicas de salud de Barcelona (103.615 habitantes).
Participantes. Pacientes de la USM que habían consultado por trastornos de salud mental durante el período 1982-2000 (n = 21.236). Se aplicaron criterios asistenciales y diagnósticos estrictos basados en la clasificación DSM-4. Todos los casos fueron validados mediante consulta de la historia clínica y el censo.
Mediciones. Incidencia (en los últimos 3 años) y prevalencia de esquizofrenia y otras psicosis, en todo el período del estudio, tanto en población general como en la población en edad de riesgo (15-54 años).
Resultados. En total, 838 pacientes cumplían los criterios para ser diagnosticados como esquizofrénicos (n = 476) o afectados por otras psicosis (n = 362). La incidencia de esquizofrenia es de 3,47/10.000 (intervalo de confianza [IC] del 95%, 2,3-4,6) en la población general y de 5,09/10.000/IC del 95%, 3,2-6,9) en la población en riesgo, y la prevalencia de esquizofrenia es de 54,9/10.000 (IC del 95%, 41,8-50,1) en la población general y de 80,7/10.000 (IC del 95%, 73,5-88) en la población en riesgo.
Conclusiones. La interfase USM comunitaria-atención primaria de salud puede ser un buen lugar para la detección y el estudio de los síndromes esquizofrénicos y otras psicosis, siempre que se cumplan determinados criterios asistenciales y de investigación.

Palabras clave: Esquizofrenia. Psicosis. Epidemiología. Factores de riesgo. Prevención. Detección precoz.

A commentary follow this article (page 125)

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Introduction

The epidemiological study of psychosis in general and schizophrenic syndromes in particular is almost a century old. Since the first studies by Faris and Dunham, Roger Bastide, or Raymond Cochrane, works in this field are usually grouped according to whether they have been carried out directly on the general population or by using "psychiatric case registers."[1] The scientific literature and the abstracts on the problems of each of these type of studies is very extensive.[2-11]

Firstly, among the theoretical problems, is that the definition and specifications have to be considered for the syndrome, the group, or the schizophrenic disorder. Another problem is how to detect the patients affected in the community when, as a rule, they tend to avoid contact and therefore, diagnosis. The tendency to under-diagnose[10] can lead to researchers taking pragmatic decisions such as, substituting the use of standardised and semi-standardised interviews for a check-list based on the clinical information obtained from clinical histories taken at hospital admissions and/or discharges, which may not be so reliable. It can also lead to grouping patients with different diagnoses, by including or excluding doubtful cases, or to considering the incidence and prevalence data obtained in hospitals or psychiatric services without taking into account the prevalence and incidence latent in the population for years, due to the characteristics of the disorder.[3,4]
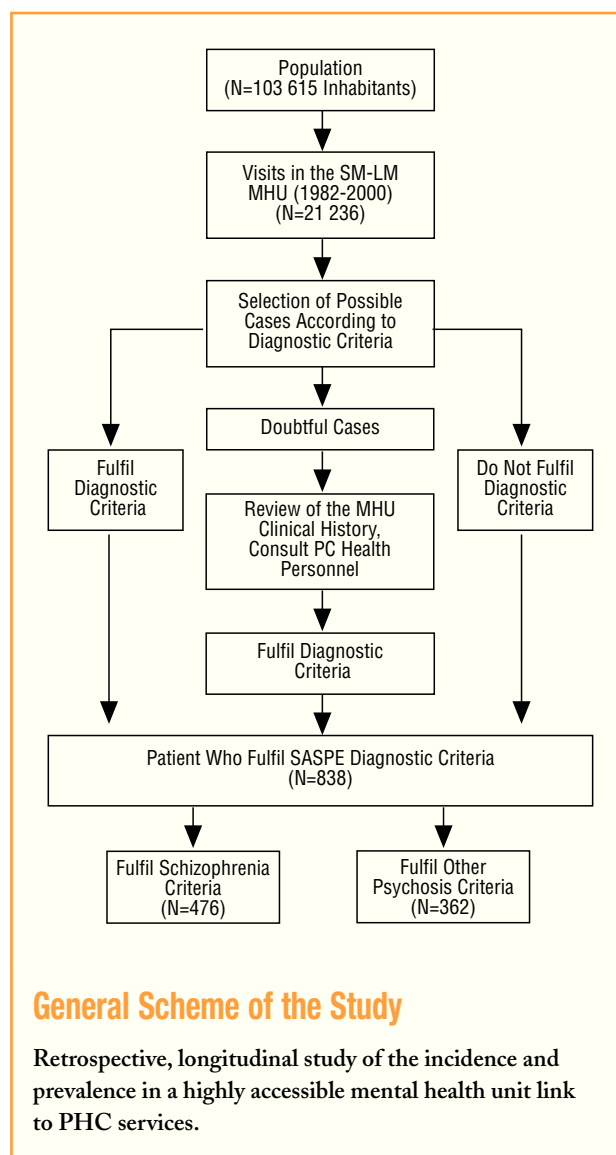
That is why to collect data directly from primary health care (PHC) and mental health units (MHU) closely linked to PHC could be a way of complementing and, perhaps qualifying the data provided by other types of studies.[12-15]

The objective of this study was to determine the prevalence and incidence of schizophrenia and other psychoses in a MHU with close links to PHC centres.

Methods

It is a retrospective longitudinal study of a population being treated in the Sant Martí-La Mina MHU (SM-LM-MHU) of the Catalonian Health Institute. This MHU, given its links with PHC and reference teams at secondary and tertiary level, as well as its strict boundaries, can rely on the collaboration of PHC in the detection and validation of cases. This study forms part of a much wider research projects called the SASPE Project (Schizophrenia Alert Signals and Prodromic Signs).[13]

The population in which the study was carried out is organised into 5 basic health areas which, together, have a total population of 103 615 inhabitants, and have used the SM-LM MHU as a referral centre for all types of mental health disorders, both for treatment and prevention, for more than 20 years. For the type of study proposed, it was necessary to rely on an easily accessible MHU with close links to the PCH centres. The SM-LM MHU appeared to fulfil these requirements, since it functioned within health centres and seemed to be one of the easiest to access in

General Scheme of the Study

Retrospective, longitudinal study of the incidence and prevalence in a highly accessible mental health unit link to PHC services.

Europe: at the end of 2001, 22 846 people from the registered population (103 615 inhabitants) had visited this MHU at some time, which corresponds to 22.5% of the population in its area.

TABLE 1	DSM-IV Diagnosis Used for "SASPE Case" Classification*	
Schizophrenia	295.10, 295.20, 295.30, 295.60, 295.90
Schizophreniform disorder	295.40
Schizoaffective disorder	295.70
Paranoia disorder	207.10
Short psychotic disorder	298.8
Shared psychotic disorder	297.3
Psychotic disorder due to: medical illness	293.0
Substance-induced psychotic disorder	292.11
Unspecified psychotic disorder	298.90
Childhood psychotic disorders: general disorders of development	299.00, 299.10, 299.80

*DSM indicates Diagnostic and Statistical Normal of Mental Disorders.

TABLE 2	Criteria for the Diagnosis of a "Case" in SASPE Studies
Criteria	
A.	A1. The diagnoses in Table 1 carried out according to DSM-IV criteria
	A2. Maintained a minimum of 6 months
	A3. And 3 or more visits to a mental health unit
	Or
B.	B. Two or more admissions to psychiatric hospital services or psychiatric hospitals with these diagnostic groups (Table 1)
	Or
C	C. Two or more visits to emergency services of a general hospital or a hospital psychiatric service of a hospital with these diagnoses on discharge (Table 1)

The criteria by which the patients included in Case Register of the MHU were diagnosed as a "SASPE case" are summarised in Tables 1 and 2. All the patients who have visited the MHU at any time can be found in this Register, although later on the treatment may be joint or, in a small percentage of cases, the treatment might have been entrusted to the PCH centre with the collaboration of the specialist team.

The computerised clinical records of all the patients were used to determine the prevalence and incidence of schizophrenia and other psychoses in the reference population. From these patients, those who fulfilled the criteria of a definition of a working case were selected so as not to "over-include" cases. Each record was validated with demographic information, after eliminating the deaths and those who had moved, and where necessary, by consulting their family doctors, nurses or paediatricians, until deciding whether they fulfilled the criteria to be defined as a "SASPE case."

The incidence of schizophrenia and other psychoses, in the general population as well as population age at risk (15-54 years), has been calculated for the period 1998-2000. The prevalence of schizophrenia and other psychoses has been calculated for the whole of the study period (1982-2000). The population denominators of the La Verneda district come from the year 2000 census update and those of La Mina (a municipality of Sant Adrià del Besós), from the 1996 electoral register.

Results

Detection was fairly stable in the team. Since it was formed (in 1989), between 42 and 87 new cases per year have been detected (Table 3). Their diagnoses are summarised in Table 4.

The mean incidence of schizophrenia in the general population in the last 3 years was 3.47 cases per 10 000 inhabitants (95% confidence interval [CI], 2.3-4.6), while in the population at risk (15-54 years), it was 5.09 cases per 10 000 inhabitants (95% CI, 3.2-6.9).

If the cases with psychosis in the general population are taken together, the mean incidence in the last 3 years was 6.17 cases per 10 000 inhabitants (95% CI, 4.6-7.6).

The schizophrenic syndromes, even with these strict criteria, were the most prevalent psychoses in our population: 45.9 per 10 000 inhabitants (95% CI, 41.8-50), in the general population, and 80.8 per 10 000 inhabitants (95% CI, 73.5-88) in the population at risk (Table 5). Its detected

TABLE 3	Year of First Visit of Schizophrenic Patients or Those With Other Psychoses Grouped According to All Ages and Risk Age (15-54 Years)			
Year	Schizophrenia		Other Psychosis	
	All Ages	15-54 Years	All Ages	15-54 Years
1982	11	8	6	3
1983	14	10	6	3
1984	16	16	7	6
1985	5	4	2	1
1986	10	10	3	2
1987	4	4	4	2
1988	16	15	18	13
1989*	23	23	19	11
1990	24	21	29	22
1991	31	28	22	12
1992	42	39	45	23
1993	34	33	25	18
1994	32	25	26	17
1995	44	37	28	14
1996	36	32	21	11
1997	27	26	17	13
1998	34	26	24	14
1999	32	28	27	17
2000	41	35	33	19
Totals	476	420	362	221

*Year of forming the Sant Martí-La Mina Mental Health Unit care team.

TABLE 4	Diagnoses Including Psychotic Patients Classified as a "SASPE Case"	
DSM-IV Diagnostic	Frequency	Percentage
Schizophrenia	404	48.2
Schizophreniform disorder	38	4.5
Schizoaffective disorder	34	4.1
Paranoiac disorder	209	24.9
Short psychotic disorder	11	1.3
Shared psychotic disorder	1	0.1
Psychotic disorder due to a medical illness	9	1.1
Substance-induced psychotic disorder	10	1.2
Unspecified psychotic disorder	62	7.4
Childhood psychosis	60	7.2
Totals	838	100.0

prevalence is greater than the rest of the psychoses together and more than twice as high as the paranoid disorders.

Discussion

According to the North American National Institute of Mental Health, the annual incidence of schizophrenia varies between 0.9 and 1.3/10 000 in the Epidemiological Catchment Area study.[16-20] The German ABC study,[4,18,19] had an incidence of 1.02/10 000 in the popu-

TABLE 5 Prevalence of Schizophrenia and "Other Psychosis" Detected in the Sant Martí-La Mina Mental Health Unit, Years 1982-2000*

Diagnostic	N	%	General Population		Age at Risk	
			Prevalence (Per 10 000 Inhabitants)	95% CI	Prevalence (Per 10 000 Inhabitants)	95% CI
Schizophrenia	476	56.8	45.9	41.8-50.1	80.8	73.5-88
"Other psychoses"	362	43.2	34.9	31.3-38.5	61.4	55.1-67.7
Paranoiac disorders	209	24.9	20.2	17.4-22.9	35.5	30.7-40.3
Other adult psychoses	93	11.1	9.0	7.15-10.8	15.8	12.6-19
Other psychosis starting in childhood	60	7.1	5.8	4.3-7.2	45.4†	34-56.9
Total	838	100	80.9	75.4-86.3	142	133-152

*CI indicates confidence interval.
†Population 0-14 years, N=13 204.

lation at risk (15-54 years). The Spanish study by Vázquez-Barquero in Cantabria[9] showed an incidence of 0.80/10 000 and 1.90/10 000 in the population age at risk (15-54 years). The variations in the differences in incidence and prevalence between the different studies can be seen in Table 6.

This disparity has been attributed to the different study populations, to different information sources consulted, as well as the different diagnostic criteria used.

Our intention was to carry out a study not so much on the general population, but on the population "actually cared for" at some time in their history.

For this reason, it seemed ideal to investigate the incidence and prevalence in this health care service in PHC centres and/or MHUs.

Unfortunately, the psychiatric case records are systems that are limited to patients who contact the health care services: if only the hospital services are taken into account, even in the case of schizophrenia, this can lead to a significant bias, by leaving out an important proportion of people affected.

The problem is also observed even if the "psychiatric" case registers are extra-hospital, outpatient or community, which is why it is advisable to carry out studies in the general population such as in PHC: it is a health care service that, if it is sufficiently developed in the country, receives a large amount of all types of illnesses, including mental ones.[1,5,12-28]

As can be seen, for the group of studies with populations on treatment, the indices provided by the SASPE Project are higher, even after discounting patients who have died or moved, which indicates that there is greater access to this service.

TABLA 6 Methodology Used and Principal Results Obtained in National and International Studies As a Source of Comparison by the SASPE Team

Author and Literature Reference	Population (Cases of Schizophrenia, Paranoia, and Other Psychotic Disorders)*	Method	Basic Ambit	Prevalence (%)		Incidence Basic (Per 10 000 Inhabitants)	
				Schizophrenia	Deirious and Other Adult Psychoses	Schizophrenia	Schizophrenia and Other Psychotic Disorders
Jablenski et al, OMS, 1992[6] (Ten Country Study)†	– 980	Hospital case register in 13 areas of 10 countries Structured interview + CATEGO	Hospital (10 countries)	0.36-0.69 annual	0.31-0.59	0.9-2.1 (?)	2-5 (?)
Gattaz and Häfner	150 000	Case register	Hospital				1.02†
ABC Study[19]†	232	Case register and double phase					
ECA-NIMH[8]†	20 000 (>3000)	Case registers in catchment areas	Sections of general population	0.7-1.9, 1.3-1.4		10-71	
Vázquez-Barquero EPEEC[9]†	522 663, 1223 (86)	Cross-sectional study from the first health care contact	Hospital	0.5-1.1	0.8+1.9+		
Herrera et al, Baix Llobregat (Barcelona)	811 (10+8)	Double phase	Sample of general population	1.08-1.35	0.85-1.08		
Alanen et al, Finlandia[2]	General health care population	Case register	Health care population	0.9-2.1		1.6-2.0	
DSM-IV[16]		Expert consensus	All	0.5-1.0	0.20-0.30	1.00	1.36
Tizón et al, SASPE study[13]† (Barcelona)	103 615, 21 536 (838)	Case register of cases + defined criteria	PCH	0.41-0.50, 0.7-0.8‡	0.31-0.38, 0.5-0.6‡	2.3-4.6, 3.2-6.9‡ (1998-2000)	4.6-7.6 (1998-2000)

*PHC indicates primary health care.
†Calculated results in population at risk: 15-54 years.
‡In population at risk and with census corrected at random to incorporate the possible "socially derived" impact.

What Is Known About the Subject

- It is usually said that schizophrenic disorders have a prevalence of around 1% in the general population and an annual incidence of 1-2 per 100 000 inhabitants.

- There is a significant variation between different studies. The prevalence data is being revised "downwards" and each particular psychotic disorder according to dispersion is still higher.

- However, in the health system clinics, these patients and their families are among the most suffering they support, as well being among those which take up a larger economic share of the social and health budgets.

What This Study Contributes

- The SASPE project tries to contribute a direct perspective of the incidence, prevalence and the characteristics of schizophrenia and other psychoses based on cases actually treated in PHC and in MHUs linked to PHC, and not only in hospitals or by population surveys.

- It confirms that the majority of psychotic patients are seen in PHC or in the PCH-MHU interface (the type of work that we have called "Primary Care to Mental Health").

- The data contributed by this type of study, the incidence and the prevalence, can be more useful and realistic for PHC than those coming from studies based in the hospital setting, in the sense that they correlate more directly with their clinical and health care needs.

From the results of the present research, it seems that PHC centres and the mental health teams linked to them are good places to detect mental disorders, particularly when it is combined with the stability of the MHU in the same area and with the same population. Studies with a treated population can provide more realistic figures of psychiatric disease in the population and of course, the different characteristics of different types of syndromes and psychopathological problems.

It is traditionally considered that studies in the general population, in double phase, are better to estimate the real incidence and prevalence of psychosis of this population. However, with the results of the present study, that consideration would have to be qualified.

This may offer a new contribution for studies based on psychiatric or PHC centre case records and, in general,

on the case records linked with the community clinic and PHC[1]: with suitably supported PHC doctors it is likely that they could detect more cases than they used to. A relationship with a highly accessible MHU can improve detection (and care) of these types of patients in the health system in general.

Our prevalence results as regards the general population, are somewhat lower than those reported in some international population based studies, probably due to our strict criteria, but it is possible that they are more realistic: all correspond to real cases, continually or repeatedly treated as schizophrenics or psychotics. On the other hand, there is a similarity between our data and the prevalence in the age at risk normally reported for schizophrenia: although it is 1% in American Psychiatric Association estimates,[16] these figures are tending to be corrected downwards[7,20,22,23] and would be nearer our 0.8% in the at risk age group.

Likewise, we believe that our data are fairly close to the real incidence and prevalence of schizophrenia in a particular population for another reason: because our methodology has allowed us not to mix the schizophrenia diagnosis or other psychosis diagnoses in the same group as often happens. These diagnoses can include the "schizophrenic spectrum" (which can include personality disorders, such as schizotypy or schizoid), and bipolar or depressive psychosis, as in the ABC studies.[19]

On the other hand, population studies, and more so those of the ECA and the like, as pointed out some time ago,[7] create problems of over-dimensionalisation. If, despite everything, our incidence and prevalence data continues to be comparable with them, it is most likely due to either the particular characteristics of the population studied or to a greater ability to pick up "cases" owing to the method used: collection of data of those actually treated in highly accessible mental health services included in the PHC services.

Even taking the results of the German ABC study and the Cantabrian studies into account, it still seems that, in our population, one can be sure there is a number of schizophrenics and patients with other psychoses who have still not been detected. If the first symptoms phase started an average of 5 years before,[2,3,9-12,22] the prodromic or pre-psychotic phase was present at least 1 year before.[4,19,28] These patients still go undetected by all the studies, even, to a greater extent, by community and PHC studies.

As limitations of our study, our definition of a case has to be mentioned, perhaps excessively restricted: it may have given rise to false negatives on including strict time criteria. Despite this, we could say that our results are comparable to those of the majority of methodologically reliable studies, and thus provide supplementary support to our results.

In any case, repeat studies like ours are required: on carrying them out in extra-hospital MHUs with other health,

population, or technical-scientific characteristics, perhaps they may provide different data. Likewise, this type of study would need to be extended to the international setting and, particularly, to urban environments. Also, it would be advisable to take advantage of these types of estimations based on PHC to investigate and define risk factors, accessible from this health care service: perhaps they could provide knowledge for the early detection and primary and secondary prevention of schizophrenia and the rest of the psychotic disorders, in the adult, as well as in children and adolescents. And we must not forget that these patients, as well as their families, are suffering, and are likely deteriorating more severely than almost any other contemporary health care clinical problem.

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