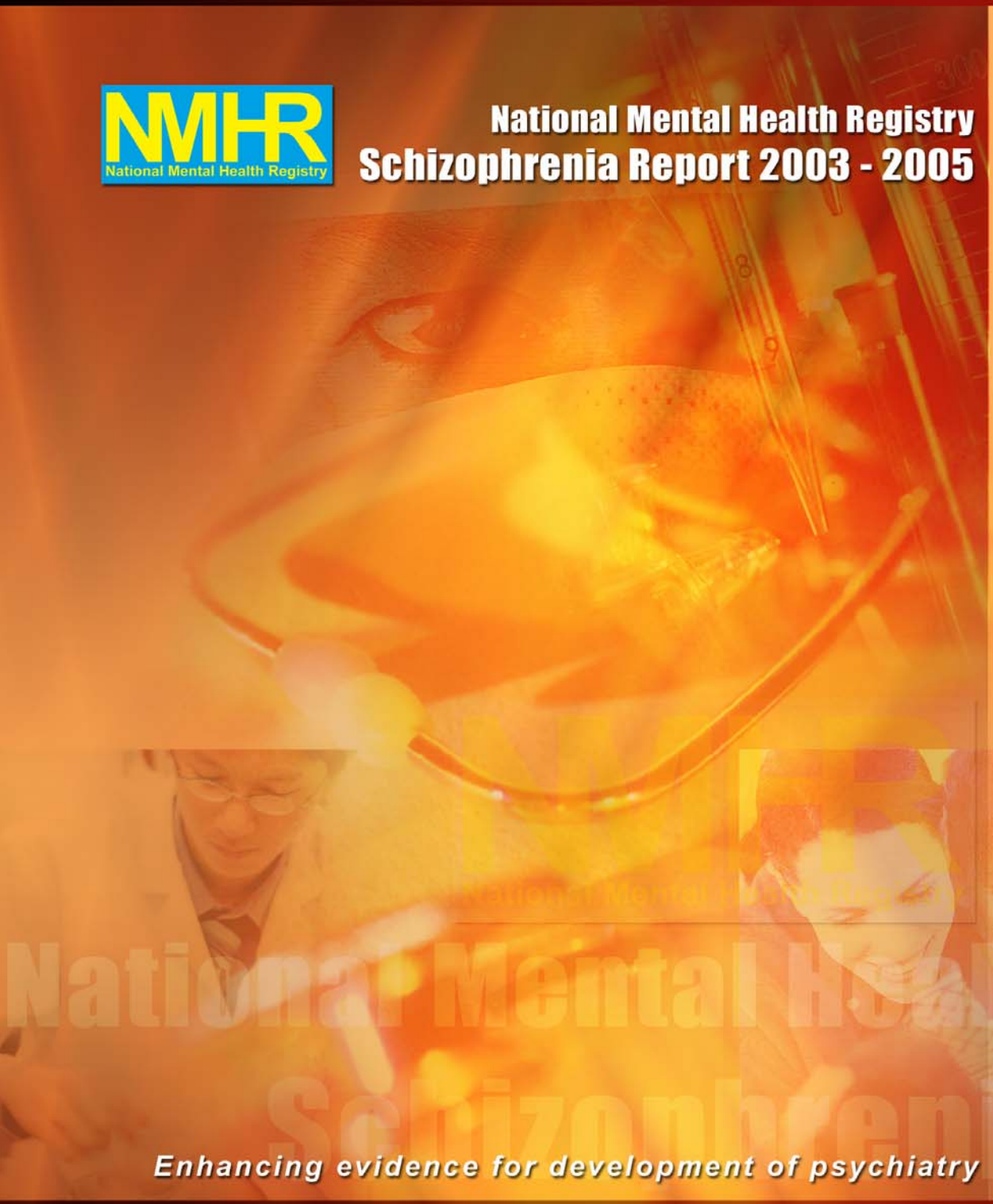
National Mental Health Registry
Schizophrenia Report 2003 - 2005



Enhancing evidence for development of psychiatry

MINISTRY OF HEALTH
MALAYSIA

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ACKNOWLEDGEMENT

The Schizophrenia Registry Report for year 2003-2005 is the second report of National Mental Health Registry (NMHR). This report is produced by utilizing data collected from 74 participating centres of NMHR. The success of the report relies mostly on the support and cooperation from various people. NMHR wishes to extend its utmost appreciation to everyone who have helped and contributed in getting the Schizophrenia Registry Report 2003-2005: National Mental Health Registry.

We would like to specially thank the:
Ministry of Health for the financial support given to us through the Medical Research Grant, IMR which has allowed us to continue the registry successfully.

Special thanks also go to:
All our centre site coordinators, medical officers, psychiatrists from various government hospitals and universities whose commitment, hard work and timely data submission made this report possible.

Our thanks also go to the Clinical Research Centre, Hospital Kuala Lumpur especially Dr. Lim Teck Onn for the technical support and guidance in managing the Mental Health Registry Unit during the initial phase.

And not forgetting the pharmaceutical industries and MPA for their generous support and in particular to:

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Janssen Cilag in 2006 and 2007
Bristol Myers - Squibb in 2007
Malaysian Psychiatric Association in 2007

Last but not least to others who have contributed to the success of this report.

Thank you.

DATO' HJ. DR. ABDUL AZIZ ABDULLAH
Chairman
National Mental Health Registry

FOREWORD

Thank you for the opportunity to write a few words in the foreword of this second report of the National Mental Health Registry (NMHR) for Schizophrenia. You will find in this report an analysis of the first three years of our existence. We have come a long way – from no database to a systematic registry of Schizophrenia. We have in this report though I must admit incomplete, an analysis of over 7000 new cases of Schizophrenia that have sought treatment in health facilities in Malaysia.

It was by no means an easy task to have the variables of this large collection of new cases of Schizophrenia to be analysed to give it a meaningful and useful report. From just 33 reporting SDPs in 2003, we have over 70 reporting centres in 2004/2005 that has contributed to this report. Currently, there are almost 200 reporting centres. This is a tremendous achievement in just over 3 years. I must record it, without their continuing support and commitment; it would not be possible to have these analysed data for the consumption of the stakeholders and evaluation of the progress of our own NMHR.

I am sure this report will be made to good use by the stakeholders in Psychiatry and Mental Health from the mental health professionals, administrators and policy makers, researchers and community leaders and carers. For the policy makers, in terms of the cost to manage just one illness in Psychiatry and how much more need to be provided allocation; for the carers and members of community in terms of outcome in the management and the cost and for the researchers for them to make use of the existing data for further research projects arising from the registry.

I would like to thank everyone who have contributed in several ways to enable us to produce this second report of the National Mental Health Registry for Schizophrenia.

Thank you.

DATO' HJ. DR. ABDUL AZIZ ABDULLAH
Chairman
National Mental Health Registry

ABOUT NMHR

The National Mental Health Registry (NMHR) collects information about patients with mental disorder in Malaysia. The information allows us to estimate the incidence of selected mental disorders, and to evaluate its risk factors and treatment in the country. Such information is useful for assisting the MOH, Non-Governmental Organizations, private providers and industry in the planning and evaluation of mental health services, leading to its prevention and control.

The NMHR is co-sponsored by the following organizations of the Ministry of Health Malaysia:
- Medical Development Division, Ministry of Health
- Public Health Department
- Psychiatry services (Department of Psychiatry and Mental Health)

An Advisory Committee has been established to oversee the operations of the NMHR. The MOH, Universities, professional bodies, Non-Governmental Organization and private healthcare providers are represented on this committee to ensure that the NMHR stays focus on its objectives, and to assure its continuing relevance and justification.

The objectives of the National Mental Health Registry are to:

i. Determine the disease burden attributable to mental disorders by quantifying its morbidity, and its geographic and temporal trends in Malaysia.
ii. Identify subgroups in the population at high risk of mental disorders to whom prevention effort should be targeted.
iii. Identify potential risk factors involved in mental disorders.
iv. Evaluate the treatment, control and prevention of mental disorders.
v. Stimulate and facilitate epidemiological research on mental disorder, e.g. generating hypotheses on etiology.

The NMHR receives data on mental disorders from the following main sources:

a) The National Vital Registration system (Jabatan Pendaftaran Negara); this is useful for determining mortality outcomes of patients with mental disorders.
b) The Ministry of Health hospital discharge information system
c) And most important of all, the individual doctors, medical assistants and nurses who care for patients with mental disorders, who voluntarily report data to the NMHR.

METHOD OF DATA COLLECTION

COVERAGE

In 2003 there were 29 Departments of Psychiatry under the Ministry of Health (MOH) and 4 from local universities. Of these public service departments, 29 were registered as source data producers from January 2003. This gave a coverage rate of 90.6% in the initial phase. If only the MOH Hospitals were taken into account, the coverage rate was 87.5%.
In year 2004 there was an increasing numbers of participating centres to 73 Source Data Providers (SDP) consisting of 20 health facilities and 21 Ministry of Health Hospitals. In 2005, one Health Facility has participated in NMHR.

DISEASE REGISTRATION METHODS

National Mental Health Registry (NMHR) has established a sophisticated unit named Mental Health Registry Unit (MHRU) to systematically collect data from the registered Source Data Providers. Based at Department of Psychiatry and Mental Health, Hospital Kuala Lumpur, MHRU manage the data collection, data entry, data analysis and data reporting. The source data providers are Ministry of Health hospitals and health facilities, Ministry of Education and Private Hospitals where mental disorders are seen and reported.

The data standards are established based on the usefulness for mental health registry, ease of data collection and compatibility with other data set (e.g. DSM IV).

Two types of case record forms (CRF) are employed in data collection. The Schizophrenia Notification Forms gather information on patient demography, clinical history and process of care. The outcomes form collect data on medical outcomes, side effect, social functioning and quality of life. The CRFs are used as part of the clinical records. Regardless of age, all patients who were diagnosed as Schizophrenia are included in the registry. The completed forms are sent to MHRU where data are analysed, interpreted and presented in regular report to be disseminated to the users. Participation of source data producers is entirely voluntary.

The data transferred to MHRU are kept strictly confidential with access only to authorized individual working in the MHRU.

STATISTICAL ANALYSIS

This report is a descriptive analysis. All data were described in terms of percentages except continuous data, like follow-up period and age. We calculated summary statistics like median, 25th percentile and 75th percentile, and then, median (50th percentile), mean, minimum and maximum value for age.
Missing data was ignored and the analysis confined to available data. Therefore, no imputation was done.

ABBREVIATION

CRF	Case Report Form
MOH	Ministry of Health
HKL	Kuala Lumpur Hospital
SDP	Source Data Providers
MHRU	Mental Health Registry Unit
JPN	Jabatan Pendaftaran Negara

GLOSSARY OF TERMS

Disease Register	The ongoing systematic collection, analysis and interpretation of a specific disease data essential to the planning, implementation and evaluation of clinical and public health practice, closely integrated with dissemination of these data to those who need to know. The final link in the chain is the application of these data to the management, prevention and control of the disease. A registration system includes a functional capacity for data collection, analysis and dissemination linked to clinical and public health programs.
Site	The location of an SDP reporting data on registrable patients to the registry.
Source data producer	The individuals or institutions that report the required data to the registry.
Sponsor	The individuals or institutions that own the registry.
Advisory Committee	A committee, board, council, panel or group thereof that is established by the sponsors of the registry to govern the registry. The Advisory Committee shall direct and control the activities of the designated collaborating unit, which manages the day-to-day operations of the registry.

INTRODUCTION

National Mental Health Registry (NMHR) has presented its first report in 2004, a year after its development. The report focused on schizophrenia as a pioneer project for the National Mental Health Registry. The development of the registry has progressed, collecting data from government-based facilities, the academia and public sector. Now the registry has progressed to include suicides and other mental illnesses such as depression and deliberate self harm.

The decision to develop this registry is to ensure that accurate information is available and accessible in a timely manner throughout the mental health sector. With this information, a clear and coherent strategy can be implemented to improve the mental health services and reduce the burden of mental health disorders in this country.

Based on the World Health Organization's recommendations (WHO, 2002) we need to narrow the gap between what is urgently needed and what is currently available. The four strategies recommended by WHO are:

1. Information for better decisions
2. Integrate policy and service development
3. Advocacy against stigma and discrimination
4. Enhanced research capacity.

These strategies are fundamentally related to one another. The development and existence of a registry is a prerequisite to translate policies into service needs.

Research capacity and culture is greatly influenced by an efficient health information system. National Mental Health Registry (NMHR) would be addressing the first component of health information which is current services and clients; input regarding criteria for access and relation to needs of population served, intervention provided, minimum data set for individual patients and outcome data (Raphael, 2004).

This National Mental Health Registry (NMHR) Report 2003-2005 provides detailed information about the profile of persons with schizophrenia who presented for the first time to various psychiatry and mental health providers throughout Malaysia. More detailed description regarding pharmacotherapy is reported and few cross tabulations done in an effort to provide better understanding and more clinically meaningful reports. With this report, the registry will provide epidemiological data and temporal trends of schizophrenia in Malaysia.

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LIST OF SOURCE DATA PROVIDERS

No	Name of Hospital / Institution	Year
1	Hospital Sultanah Bahiyah, Alor Setar, Kedah	2003
2	Hospital Sultan Abdul Halim, Sungai Petani, Kedah	2003
3	Hospital Tuanku Fauziah, Kangar, Perlis	2003
4	Hospital Pulau Pinang, Pulau Pinang	2003
5	Hospital Bahagia, Ulu Kinta, Perak	2003
6	Hospital Teluk Intan, Perak	2003
7	Hospital Ipoh, Perak	2003
8	Hospital Taiping, Perak	2003
9	Hospital Raja Perempuan Zainab II, Kota Bharu, Kelantan	2003
10	Hospital Sultanah Nur Zahirah, Kuala Terengganu, Terengganu	2003
11	Hospital Tengku Ampuan Afzan, Kuantan, Pahang	2003
12	Hospital Sultan Haji Ahmad Shah, Temerloh, Pahang	2003
13	Hospital Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur	2003
14	Hospital Selayang, Selangor	2003
15	Hospital Tengku Ampuan Rahimah, Klang, Selangor	2003
16	Hospital Kajang, Selangor	2003
17	Hospital Tuanku Ja'afar, Seremban, Negeri Sembilan	2003
18	Hospital Melaka, Melaka	2003
19	Hospital Permai, Johor Bahru, Johor	2003
20	Hospital Sultanah Aminah, Johor Bahru, Johor	2003
21	Hospital Pakar Sultanah Fatimah, Muar, Johor	2003
22	Hospital Batu Pahat, Johor	2003
23	Hospital Sentosa, Kuching, Sarawak	2003
24	Hospital Umum, Kuching, Sarawak	2003
25	Hospital Miri, Sarawak	2003
26	Hospital Sri Aman, Sarawak	2003
27	Hospital Sibu, Sarawak	2003
28	Hospital Mesra, Bukit Padang, Sabah	2003
29	Hospital Universiti Sains Malaysia, Kubang Kerian, Kelantan	2003
30	Pusat Perubatan Universiti Malaya, Wilayah Persekutuan Kuala Lumpur	2003
31	Universiti Putra Malaysia, Wilayah Persekutuan Kuala Lumpur	2003
32	Hospital Universiti Kebangsaan Malaysia, Wilayah Persekutuan Kuala Lumpur	2003
33	Hospital Tung Shin, Wilayah Persekutuan Kuala Lumpur	2003
34	Hospital Bukit Mertajam, Pulau Pinang	2004
35	Hospital Sungai Buloh, Selangor	2004
36	Hospital Banting, Selangor	2004
37	Hospital Kulim, Kedah	2004
38	Hospital Kuala Nerang, Kedah	2004

LIST OF SOURCE DATA PROVIDERS

No	Name of Hospital / Institution	Year
39	Hospital Langkawi, Kedah	2004
40	Hospital Baling, Kedah	2004
41	Hospital Sik, Kedah	2004
42	Hospital Machang, Kelantan	2004
43	Pej. Kesihatan Kinta, Klinik Kesihatan Menglembu, Perak	2004
44	Pej. Kesihatan Kinta, Klinik Kesihatan Malim Nawar, Perak	2004
45	Pej. Kesihatan Kinta, Klinik Kesihatan Kg Simee, Perak	2004
46	Pej. Kesihatan Kinta, Klinik Kesihatan Chemor, Perak	2004
47	Pej. Kesihatan Kinta, Klinik Kesihatan Gopeng, Perak	2004
48	Pej. Kesihatan Kinta, Klinik Kesihatan Manjoi, Perak	2004
49	Pej. Kesihatan Kinta, Klinik Kesihatan Kampar, Perak	2004
50	Pej. Kesihatan Batang Padang, Klinik Kesihatan Tanjung Malim, Perak	2004
51	Pej. Kesihatan Manjung, Poliklinik Kesihatan Lekir, Perak	2004
52	Pej. Kesihatan Hulu Perak, JPL Hospital Gerik, Perak	2004
53	Pej. Kesihatan Bachok, Klinik Kesihatan Bachok, Kelantan	2004
54	Pej. Kesihatan Daerah Tumpat, Klinik Kesihatan Bandar Tumpat, Kelantan	2004
55	Pej. Kesihatan Daerah Kuala Krai, Klinik Kesihatan Bandar K. Krai, Kelantan	2004
56	Pej. Kesihatan Bandar Pasir Mas, Klinik Kesihatan Bandar P. Mas, Kelantan	2004
57	Pej. Kesihatan Gua Musang, Klinik Kesihatan Bandar Gua Musang, Kelantan	2004
58	Pej. Kesihatan Jeli, Klinik Kesihatan Jeli, Kelantan	2004
59	Pej. Kesihatan Seberang Perai Utara, Klinik Kesihatan Butterworth, P. Pinang	2004
60	Hospital Yan, Kedah	2004
61	Hospital Tapah, Perak	2004
62	Hospital Slim River, Perak	2004
63	Hospital Tanah Merah, Kelantan	2004
64	Hospital Batu Gajah, Perak	2004
65	Hospital Dungun, Terengganu	2004
66	Hospital Seri Manjung, Perak	2004
67	Hospital Tengku Anis, Pasir Puteh, Kelantan	2004
68	Hospital Putrajaya, Wilayah Persekutuan Putrajaya	2004
69	Hospital Jitra, Kedah	2004
70	Hospital Kemaman, Terengganu	2004
71	Hospital Kampar, Perak	2004
72	Hospital Kepala Batas, Pulau Pinang	2004
73	Hospital Sungai Bakap, Pulau Pinang	2004
74	Pej. Kesihatan Daerah Petaling, Poliklinik Kelana Jaya, Selangor	2005

CHAPTER 1 : DEMOGRAPHIC PROFILES OF PATIENTS WITH SCHIZOPHRENIA.

NUMBER OF CASES REGISTERED.

From 2003 to 2005 a total number of 7351 cases of schizophrenia has been registered. The number of cases registered in 2003 (2292 cases), 2004 (2551cases) and 2005 (2508 cases) were consistent through out. The increase number of Source Data Providers in 2003 (33), 2004 (43) and 2005 (1)

Possible reasons for under reporting of cases through the years are:

1. Delayed reporting.
2. Not reporting
3. Services Reasons - change in coordinator of the Source Data Providers, transfer of medical officers

DEMOGRAPHIC DATA.

Gender

From the reported cases in the NMHR throughout the 3 years data, majority were males (>60%). It has been shown from many epidemiological studies that the ratio between males to females is 2:1. Possible explanations for the discrepancy in gender ratio is that in our culture, males are more aggressive and they tend to present more to Mental Health facilities compared to females. Families tend to be more tolerant to females who are less aggressive.

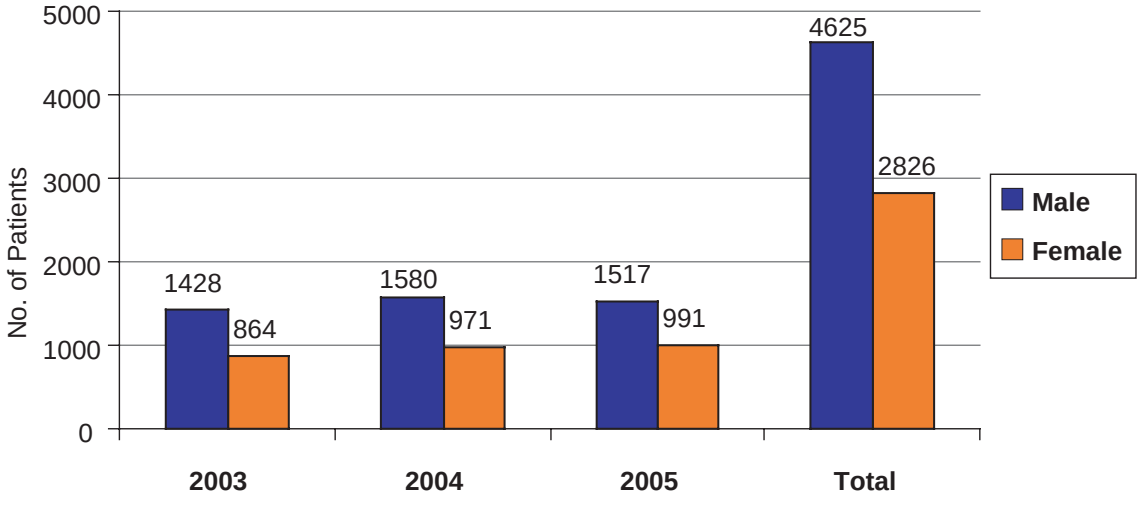


Figure1: Gender distribution of registered cases.

Age

	2003			2004			2005		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
	N=2287	N=1423	N=864	N=2550	N=1580	N=970	N=2503	N=1513	N=990
Mean	33	31	34.4	34	31.4	36	33.1	31.5	35.4
Median	31	29	32.5	32	29	34	31	29	34
Minimum	10	12	8	12	10	13	9	9	13
Maximum	82	85	78	88	90	85	91	82	91

Table 1: Age distribution by gender – Prevalence cases

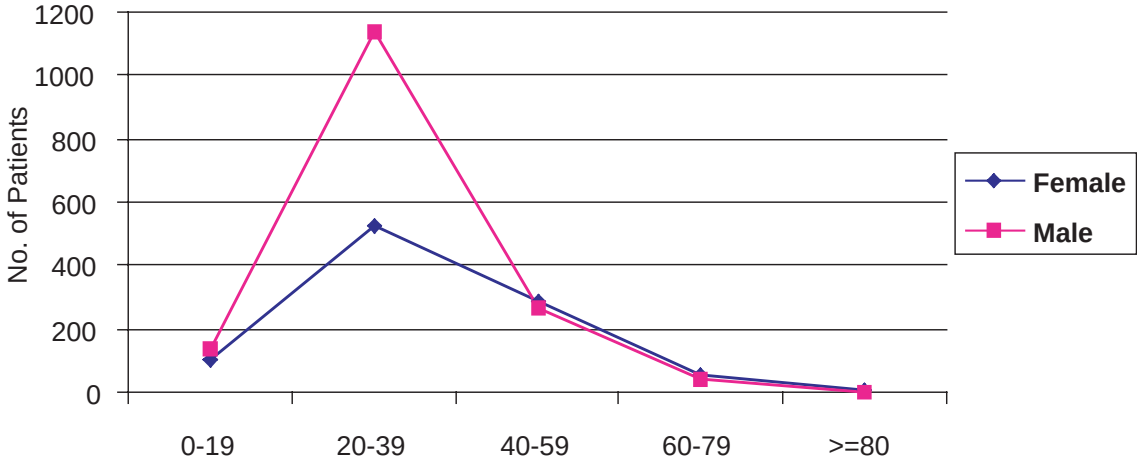


Figure 2: Distribution of age at presentation for registered cases

When comparing the age presentation throughout the 3 years, males typically develop illness earlier than females. The presentation seems to peak at the age 30 and decline rapidly. It was found that females tend to present slightly late and seems to spread over the years, which coincide with reproductive age. This could probably relate to coping skills of being parents and managing other life events during this period.

Demographic Data	2003		2004		2005		Total	
	No	%	No	%	No	%	No	%
Gender	**N = 2292**		**N = 2551**		**N = 2508**		**N = 7351**	
Male	1428	62	1580	62	1517	60	4525	62
Female	864	38	971	38	991	40	2826	38
Citizenship	**N = 2291**		**N = 2551**		**N = 2507**		**N = 7349**	
Malaysian	2236	98	2500	98	2450	98	7186	98
Non-Malaysian	55	2	51	2	57	2	163	2
Ethnic Group	**N = 2288**		**N = 2546**		**N = 2507**		**N = 7341**	
Malay	1211	53	1428	56	1336	53	3975	54
Chinese	628	27	690	27	768	31	2086	28
Indian	207	9	217	9	217	9	641	9
Orang Asli	15	1	10	0	11	0	36	0
Kadazan	47	2	42	2	28	1	117	2
Iban	46	2	22	1	30	1	98	1
Others	134	6	137	5	117	5	388	5
Marital Status	**N = 2245**		**N = 2485**		**N = 2425**		**N = 7155**	
Single	1543	69	1662	67	1689	70	4894	68
Married	532	24	618	25	520	21	1670	23
Widowed	39	2	57	2	49	2	145	2
Divorced	95	4	122	5	136	6	353	5
Separated	36	2	26	1	31	1	93	1
Education Level	**N = 2231**		**N = 2457**		**N = 2386**		**N = 7074**	
No Formal Schooling	125	6	168	7	134	6	427	6
Primary School – Not completed	167	7	204	8	128	8	553	8
Primary School – completed	371	17	396	16	429	18	1196	17
Secondary School – PMR	652	29	658	27	612	26	1922	27
Secondary School - SPM	668	30	765	31	770	32	2203	31
Secondary School – STPM	93	4	57	2	67	3	217	3
Tertiary – Diploma	91	4	131	5	118	5	340	5
Tertiary – Degree	59	3	71	3	70	3	200	3
Tertiary – Master/PhD	5	0	7	0	4	0	16	0

Table 2: Demographic Data – prevalence cases

From our data, the majority of patients were Malaysians (98%) with predominantly Malays (54%) followed by Chinese (28%) and Indians (9%) which are reflective of our Malaysian population.

Most of the cases reported were single (68.7%), while widowed, divorced and separated contributed to 8.3%. A high proportion of the patients attained their education until secondary level. A minority of registered cases obtained tertiary education.

Employment Status	2003		2004		2005		Total	
N	2290		2546		2488			
	Male (%)	Female (%)	Male (%)	Female (%)	Male (%)	Female (%)	Male (%)	Female (%)
Never employed	193 (14)	197 (23)	215 (14)	186 (19)	197 (13)	255 (26)	605 (13)	638 (23)
Unemployed	640 (45)	490 (57)	748 (47)	592 (61)	743 (50)	518 (52)	2131 (47)	1600 (57)
Self-employed	127 (9)	26 (3)	161 (10)	25 (3)	143 (10)	34 (3)	431 (10)	85 (3)
Employed Part-time	167 (12)	36 (4)	143 (9)	36(4)	152 (10)	41 (4)	462 (10)	113 (4)
Employed Full-time	300 (21)	114 (13)	308 (20)	132 (14)	265 (18)	140 (14)	873 (19)	386 (14)
Total (100%)	1427	863	1577	971	1507	990	4511	2824

Table 3: Employment cases – prevalence cases

Employment Status.

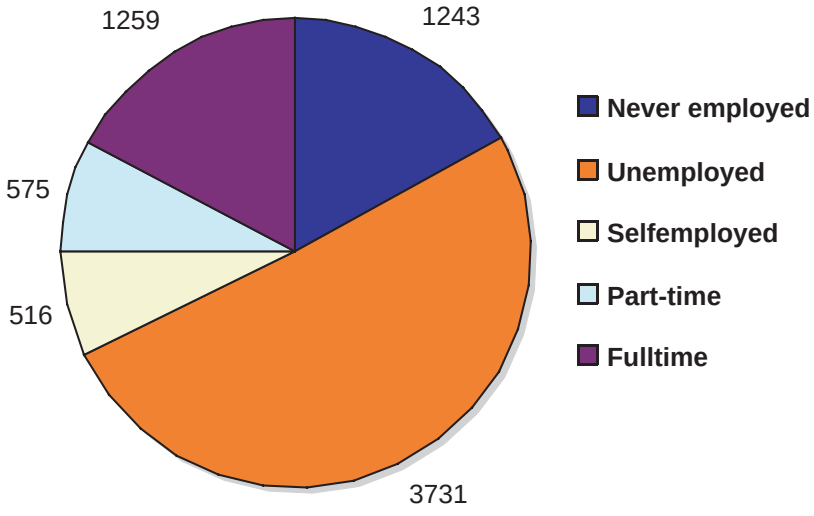


Figure 3: Distribution of employment status -registered cases

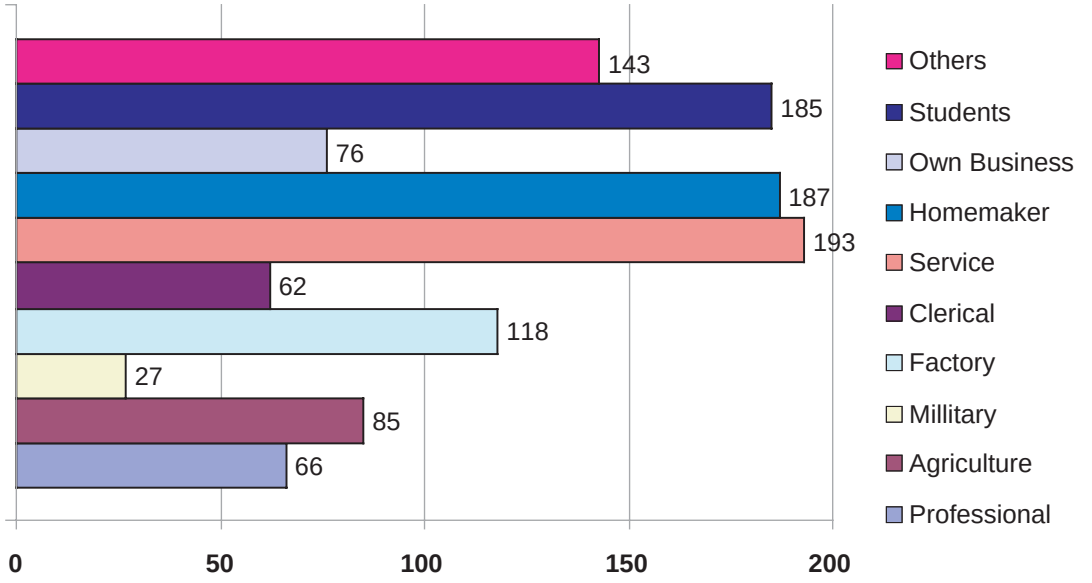


Figure 4: Distribution of present occupation - registered cases

Looking into employment status, majority of the registered cases were never employed or unemployed. Males were more employable than females among registered cases.

Looking at the occupation at presentation, minority were employed. Among those who were employed, homemakers (18%), service sector (15%) and students (15%).

PHYSICAL PARAMETERS

Weight

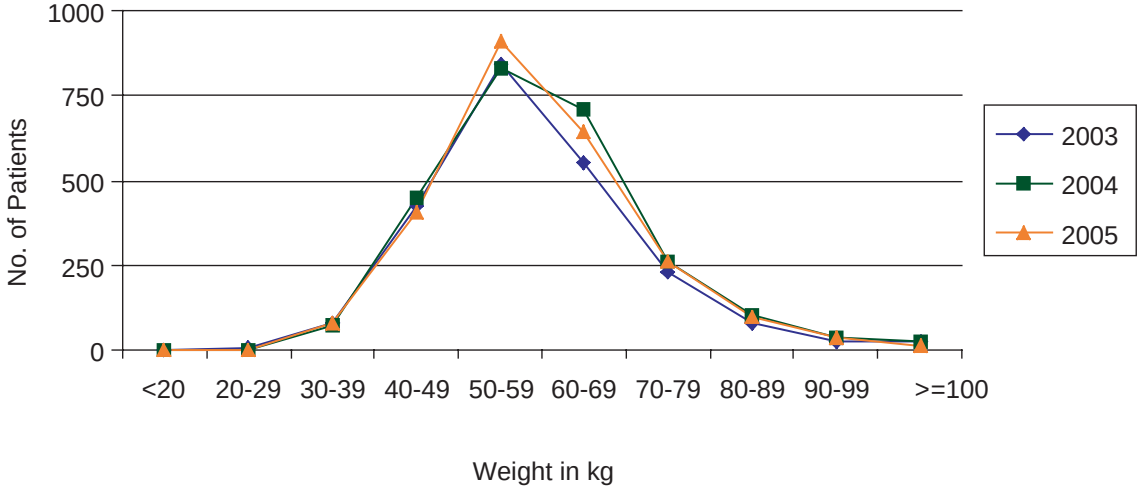
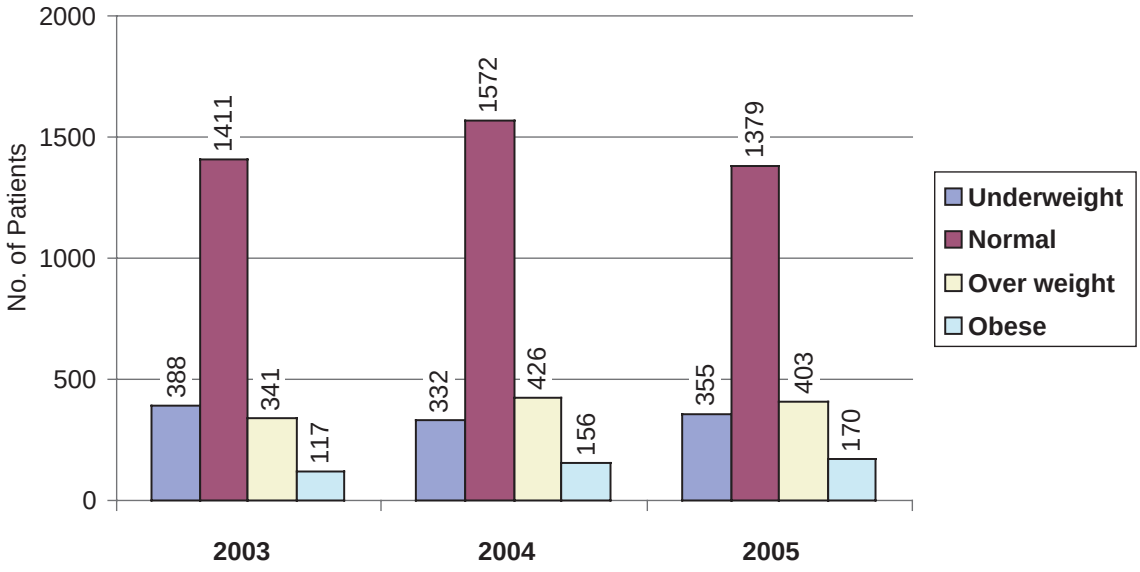


Figure 5: Distribution of patient's weight - registered cases



Under weight (BMI< 18.5) Normal (BMI 18.5 - <25.0) Over weight (BMI 25.0 - <30.0) Obese (BMI>30.0)

Figure 6: Distribution of patient's BMI - registered cases

Mean weight of the patients were 58kg-59kg with about 60% within normal BMI, 15-17% were overweight and 5-7% were obese.

Weight change occurs over time and against a background of progressive weight gain in the 'normal' population. Antipsychotic drugs in current use are associated with weight changes. Atypical antipsychotics had been especially associated with weight gain as an unwanted side-effect. As these drugs are used to prescribe on a long-term basis therefore there is a need to examine the possible obesogenic effects of drugs. Based on data available from our registered cases on BMI, prescribers of antipsychotics need to consider the possible weight gain. Regular monitoring of body weight is recommended.

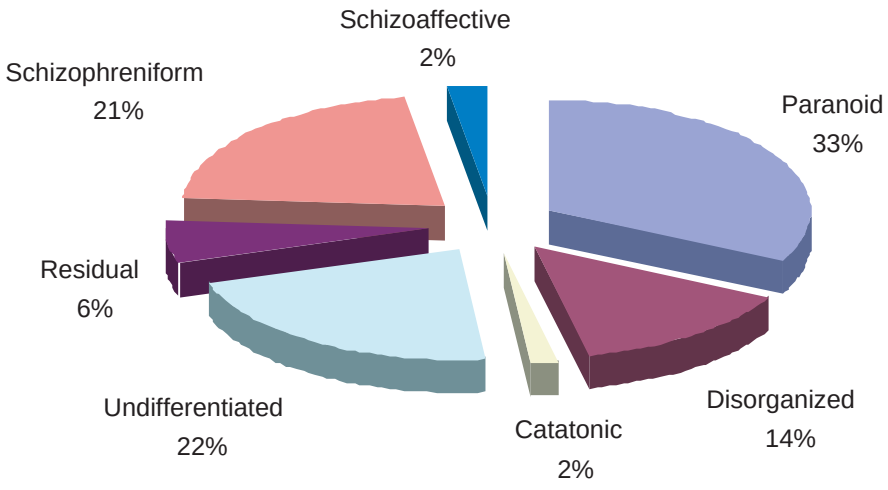


Figure 7: Sub-types of Schizophrenia

Based on the DSM-IV classification of mental disorders, 36% of patients were found to have paranoid schizophrenia followed by undifferentiated type and disorganized type. The difference between the subtypes of schizophrenia is only on the “predominant clinical picture that is done at the time of admission”.

DURATION OF UNTREATED PSYCHOSIS (DUP).

Duration of untreated psychosis (DUP) is defined in this registry as the time period from onset of the first symptoms to initiation of neuroleptic treatment. The mean DUP from analysis of data was 28 months, with a median of 12 months and ranged from 0–564 months. The DUP for males was found to be 23-26 months as compared 30-33 months for females for the 3 years.
Studies on DUP has demonstrated that patients generally receive treatment within 6 months of symptom onset, others remain untreated in the community for 1–2 years (e.g. McGlashan, 1999; Barnes et al, 2000; Ho, et al, 2000). There must be concerted effort to reduce the DUP to less than 6 months for better long term prognosis of schizophrenia in Malaysia.

Year	2003			2004			2005		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Mean (sd)	23.2 (44.1)	33.1 (62.3)	28.23 (52.8)	24.4 (44.7)	30.9 (61.2)	28.3 (52.7)	26.9 (51.5)	32.0 (61.8)	29.5 (56.3)
Median	11	12	12	12	12	12	12	12	12
Mode	12	1	12	12	12	12	12	12	12
Minimum	0	0	0.25	0	0	0	0	0	0
Maximum	468	420	468	564	564	564	516	492	516

Table 4: Duration of untreated psychosis in months – Registered cases

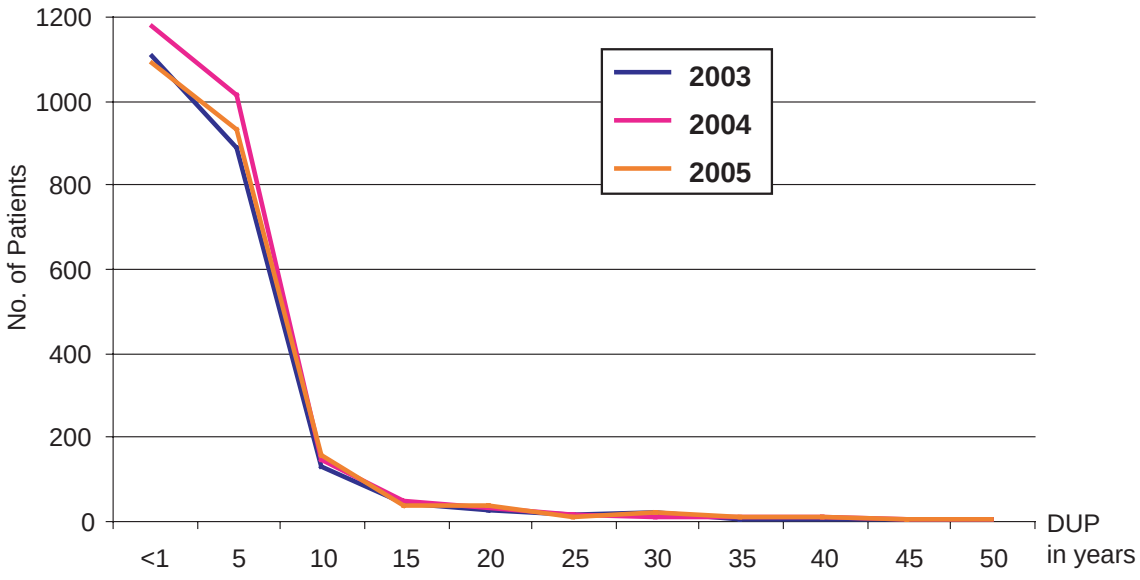


Figure 8: Duration of untreated psychosis in years – Registered cases

It is also indicated that the extended period of DUP is important because it may be during this time that schizophrenia becomes chronic. There is an emerging body of both direct and indirect evidence to suggest that, independently from other factors, a longer DUP seems to have an adverse effect on both the short and long-term course and the outcome of schizophrenic patients. The clinical importance of this evidence is that DUP is one of the few prognostic factors that can be influenced (Loebel et al. 1992; Drake et al. 2000; Larsen et al. 2000; Black et al. 2001; Malla et al. 2002; Harrigan et al. 2003). Unlike other prognostic factors, it can be reduced through changes in health service delivery (Larsen et al. 2001). This emphasizes the value of early recognition and the necessity for prompt delivery of early, appropriately designed and effective intervention programmes for those with a recent onset of psychosis. From our data there is much program planners and implementers need to institute to reduce the DUP in our Malaysian context.

DUP of Inpatients

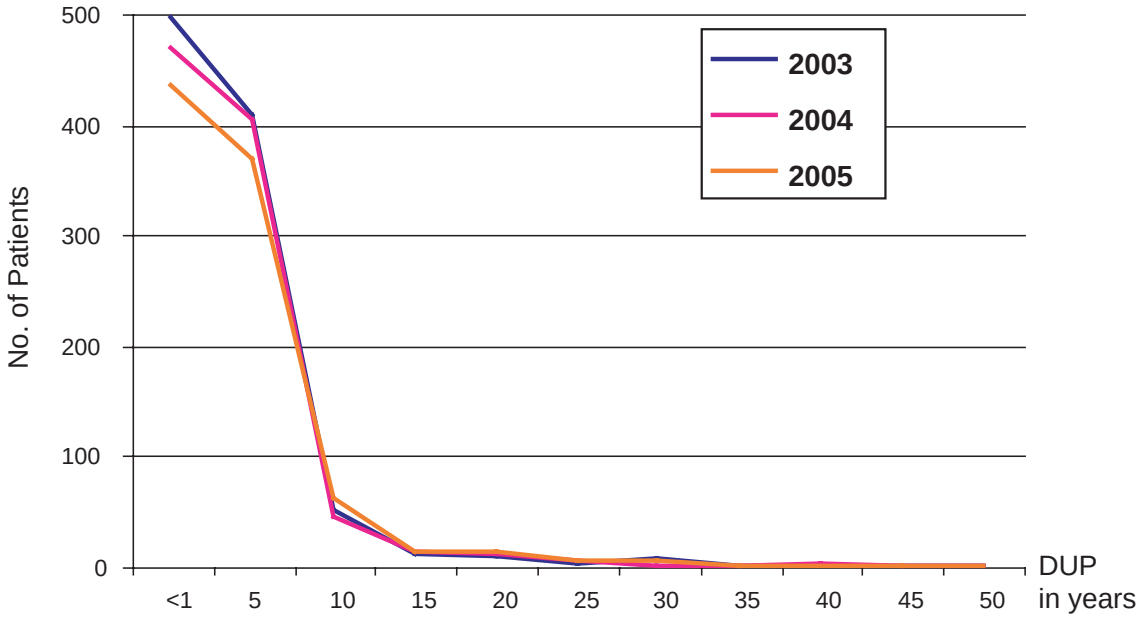


Figure 9: DUP of Inpatients

The graph above showed that about 90% of patients who were treated as inpatients had DUP of < 5 years and about 50% of them were treated within 1 year. There were a few patients who were treated after more than 20 years with the longest DUP of 46-50 years. There were many reasons to explain this which include lack of awareness and knowledge and traditional beliefs of family member, absence of carers, and others.

COMORBIDITIES IN SCHIZOPHRENIA

Comorbidity, which signifies the simultaneous occurrence in a person two or more disorders, may results in lower adherence to medical treatment, increase in disability and mortality, and higher health costs. It was found that in this cohort, approximately 20% suffered from some form of comorbidity with substance abuse being the commonest (about 80%). Cannabis was found to be the commonest substance of abuse followed by amphetamine / methamphetamine.

Comorbidities	2003		2004		2005	
	N	*(%)*	N	*(%)*	N	*(%)*
Total	2292		2551		2508	
Yes	*396*	(17)	*500*	(20)	*503*	(20)
Substance abuse	*314*	(14)	*420*	(16)	*400*	(16)
Depression	*69*	(3)	*82*	(3)	*83*	(3)
Personality Disorder	7	*(0)*	2	*(0)*	8	*(0)*
Others	17	*(1)*	16	*(1)*	24	*(1)*

Table 5: Comorbidities- registered cases

CO MORBID SUBSTANCE ABUSE: TYPES OF SUBSTANCES

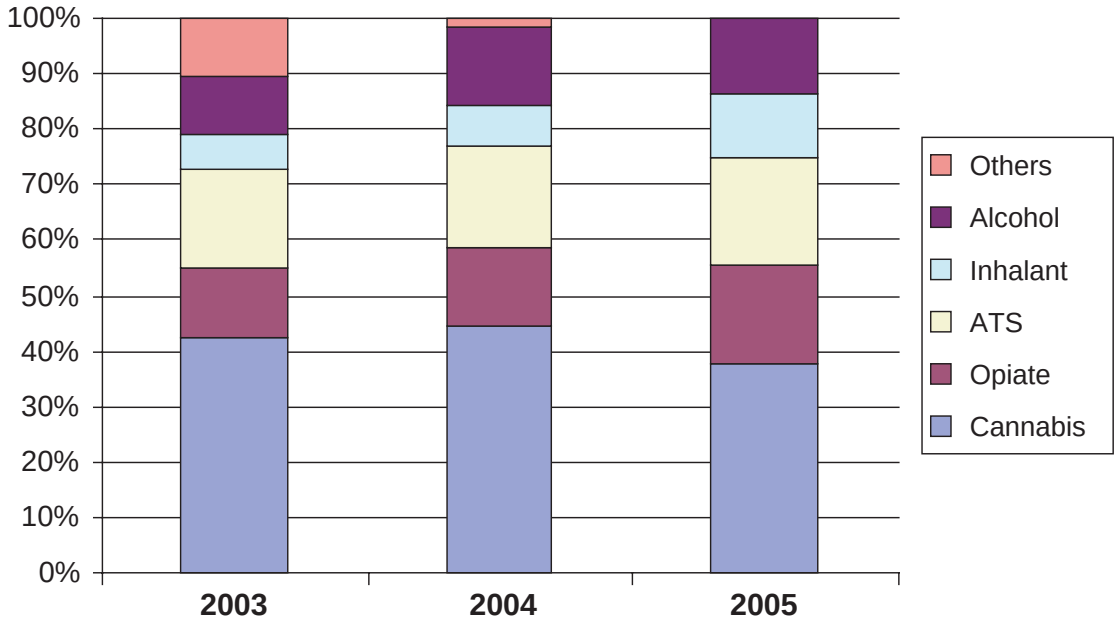


Figure 10: Co morbid substance abuse – types of substances

It is known that cannabis use may increase the risk of psychotic disorders and result in a poor prognosis for those with an established vulnerability to psychosis. (Arseneault L 2004). It is recommended that in program delivered, preventive measures to discourage cannabis use among vulnerable youths be considered very seriously to reduce risks of psychotic disorders.

A number of hypotheses have been put forward to explain the association between cannabis use and psychosis.(Hall W 1998; W; 1998; Hall W 2000; McKay DR 2000) The most widely proposed hypotheses are:

- that cannabis use precipitates psychosis among those vulnerable to developing the disorder
- that cannabis use exacerbates symptoms or prolongs the illness
- that those with schizophrenia, or a vulnerability to it, use cannabis to self-medicate psychiatric symptoms or medication side-effects
- that the association results from either common risk factors (such as personality or family history of schizophrenia) or confounding variables (such as drug use or poor adherence to antipsychotic medication).

Patients with comorbid schizophrenia and substance use disorders have been consistently shown to have more negative outcomes than their counterparts without comorbid disorders. These include disadvantages in terms of treatment and psychosocial outcome health status, and access to treatment tailored to their particular needs.

The second most common comorbidity our patients' with schizophrenia presented with was depression which constituted nearly 18% of all comorbidities and a smaller group with personality disorders (< 2%).

PAST OR CURRENT MEDICAL CONDITIONS

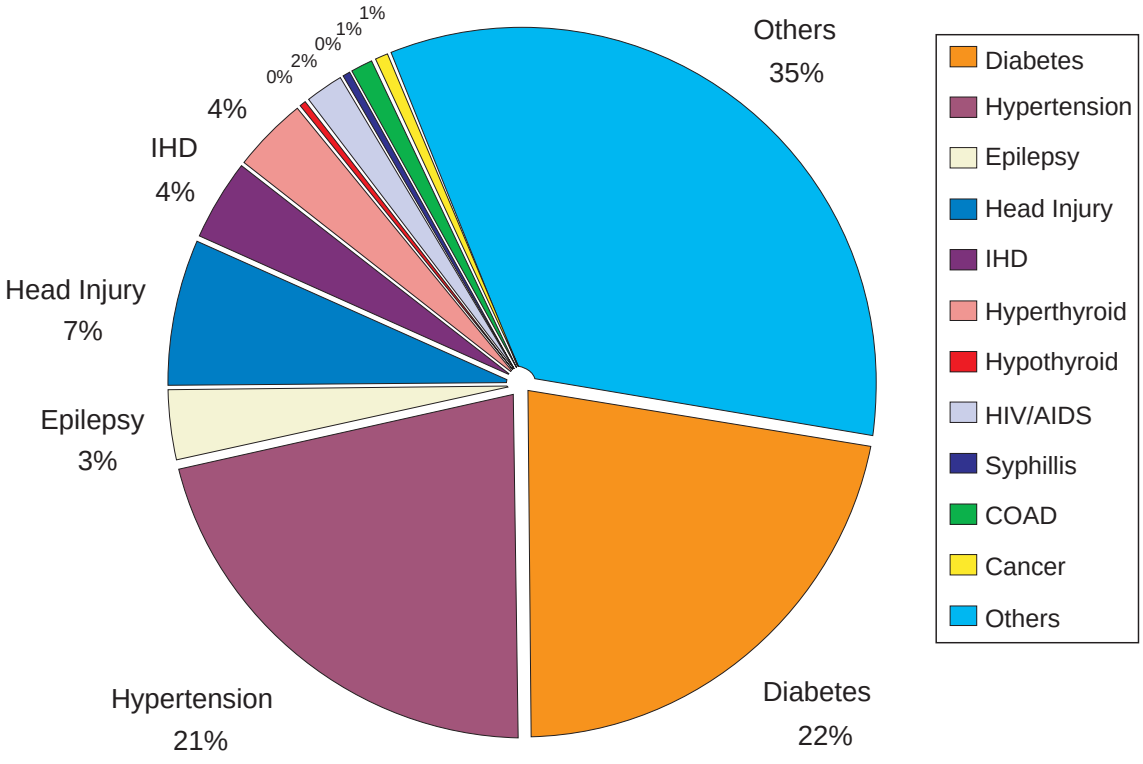


Figure 11: Past or current medical conditions

It is a common finding that patients with schizophrenia are at greater risk for heart disease and diabetes. Our data unfolds that diabetes and hypertension are the two most common medical illnesses suffered by more than 40 % of all patients' with medical illness with diabetes making up approximately 20% and hypertension another 20%.

The prevalence of diabetes among people with schizophrenia may be two to four times higher than in general population.'(Dixon 2003; Lindenmayer 2003; Subramaniam 2003) Schizophrenia appears to be an independent risk factor for diabetes (Henderson 2002).

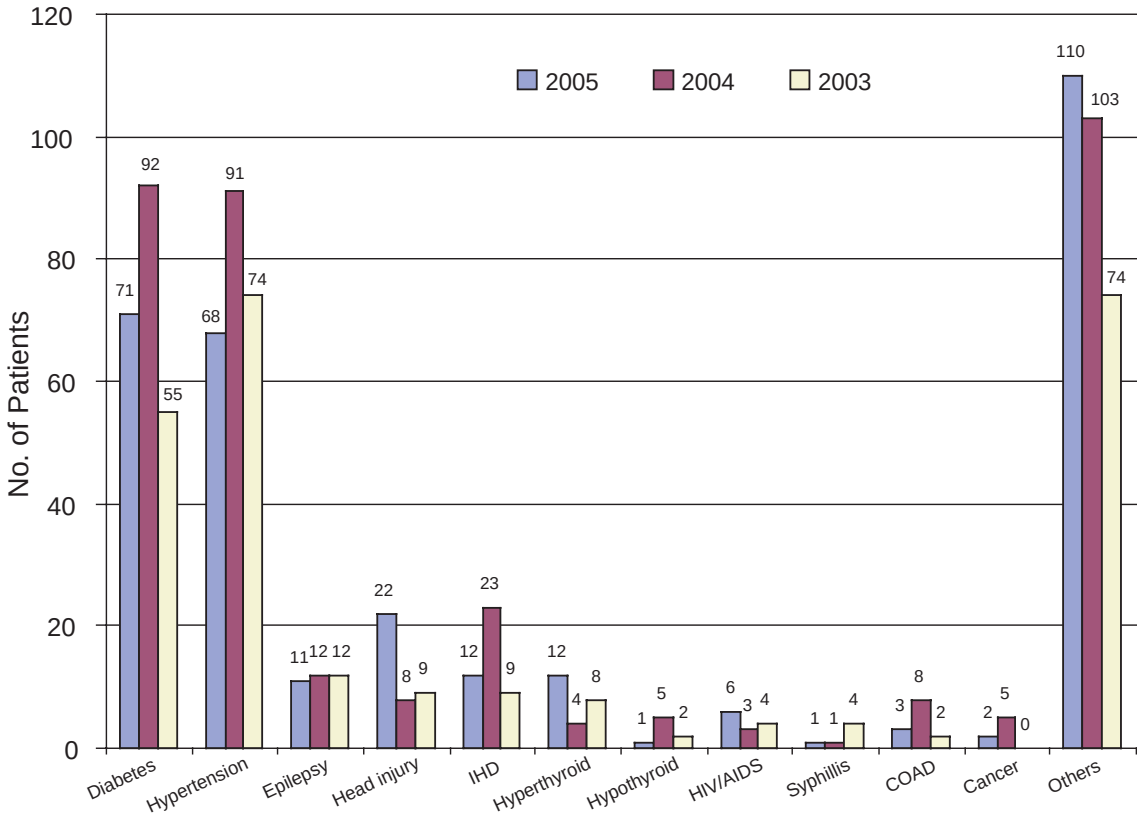


Figure 12: Past or current medical conditions

One set of explanations for these vulnerabilities points to the lifestyles of people with schizophrenia, which are often associated with poor dietary habits, obesity, high rates of cigarette smoking, and the use of alcohol and street drugs. Moreover some antipsychotic medications to treat schizophrenia have been associated with weight gain, triggering the onset of diabetes, increases in levels of plasma lipids, and abnormal findings on ECGs. Comorbidities in psychotic disorders are often under-recognized, under-diagnosed and hence under-treated (Fenton WS 2001; Addington DD 2002). Hence, it is important for clinicians to recognize and diagnose them early in the course of the psychotic illness and administer appropriate treatment when necessary.

FAMILY HISTORY AND SCHIZOPHRENIA

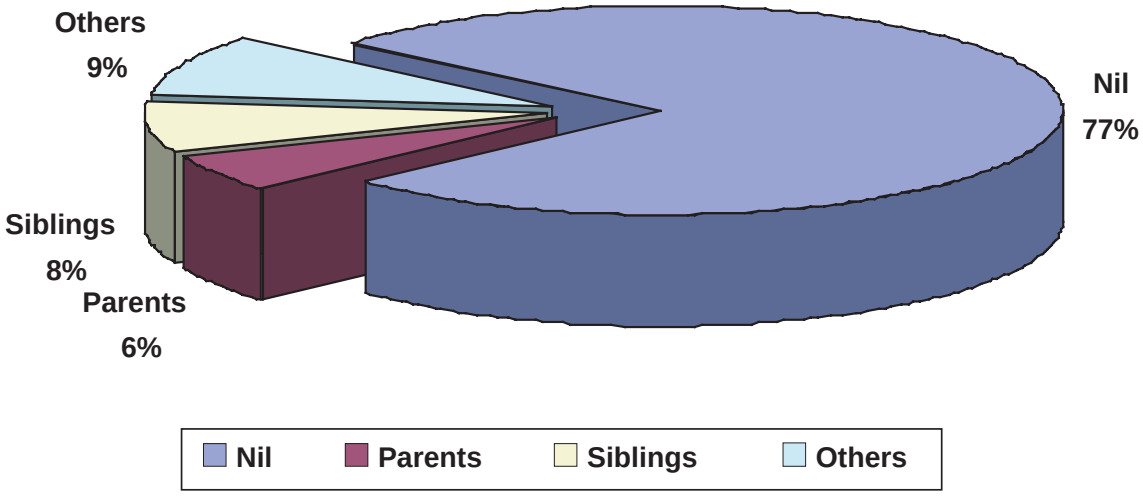


Figure 13: Family history of schizophrenia; Prevalence cases

A family history of a parent or sibling with schizophrenia puts an individual at greater risk of schizophrenia. (Gottesman, 1991). Those with one of the parents having schizophrenia have a 5% more chance of getting schizophrenia, while those with siblings with schizophrenia have a 10% chance of having the disease. This is consistent with our findings of family history of illness in parents (6%), siblings (8%) and others (9.7%) making a total 21.6% with family history of mental illness. There is some evidence that those with higher familial genetic loading for schizophrenia also have an earlier age at onset of the disorder (Kendler & MacLean, 1990; Pulver et al, 1990; Suvisaari et al, 1998). Unfortunately in this cohort this risk was not investigated.

CIRCUMSTANCES LEADING TO CONTACT

	2003	2004	2005	Total
N	4636 *(100%)*	5194 *(100%)*	5107 *(100%)*	14937
Patients with any circumstances	2237 *(48%)*	2530 *(49%)*	2483 *(49%)*	7250
Patients with specific circumstances				
Self referral	185 *(4%)*	215 *(4%)*	240 *(5%)*	640
By family	1365 *(29%)*	1519 *(29%)*	1378 *(27%)*	4262
By police	404 *(9%)*	406 *(8%)*	327 *(6%)*	1137
By friend	45 *(1%)*	71 *(1%)*	70 *(1%)*	186
Under court order	48 *(1%)*	40 *(1%)*	57 *(1%)*	145
Others	297 *(6%)*	362 *(7%)*	503 *(10%)*	1162
Family and police	55 *(1%)*	51 *(1%)*	49 *(1%)*	155

Table 6: Mode of contact of registered cases

From Table 6, about 30% of patients were brought to medical attention by their family members 29% (2003), 29% (2004), and 27% (2005). Generally aggressive patients are brought in by police, however it was found that only 8% of registered cases were brought with assistance from police.

CARE SETTING AT FIRST CONTACT

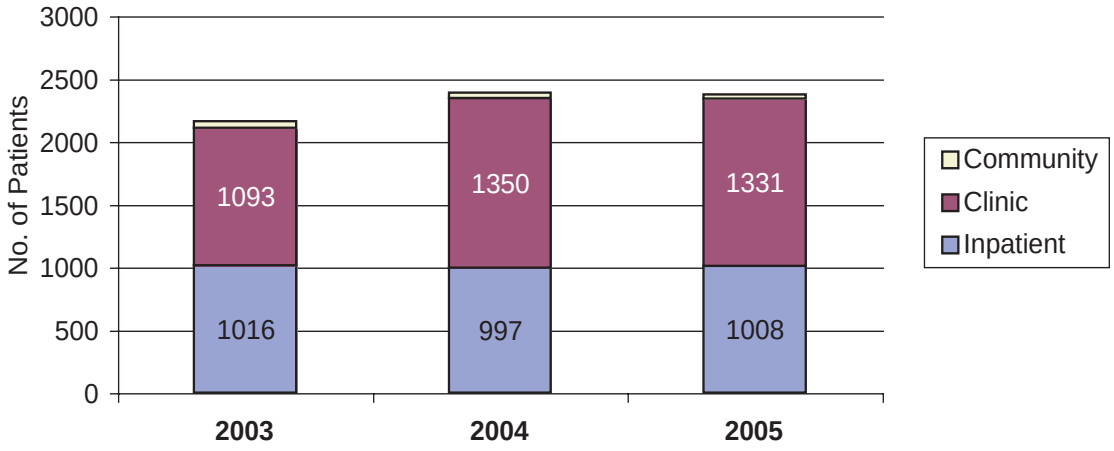


Figure 14: Type of care setting at first contact

Slightly more than half were treated as outpatient on first contact. This high percentage of registered cases that needed inpatient treatment at the first point of contact is an indicator of severity of illness. There is a need for early detection and prompt treatment for example early intervention program for schizophrenia.

One to two percent was referred from community psychiatric services. Most probably these were cases detected by the community services of the health facilities.

GENDER OF INPATIENTS

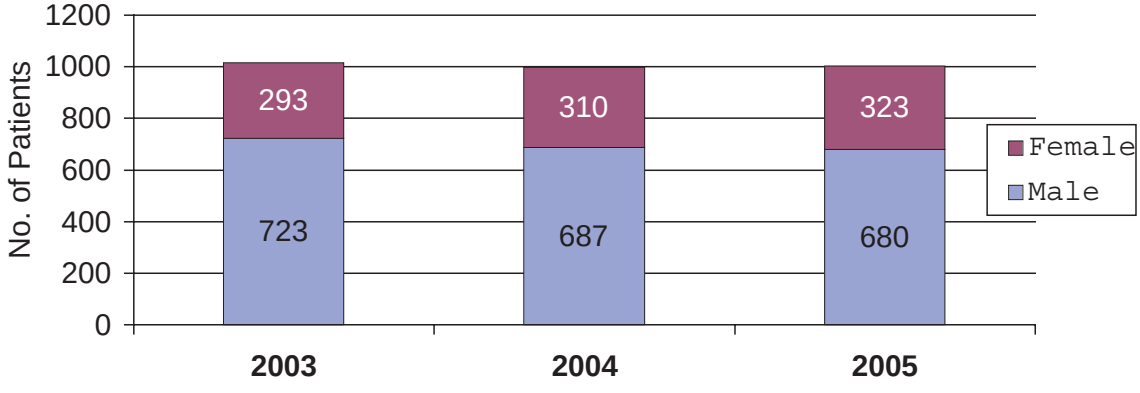


Figure 15: Gender of inpatients

More than 65% of patients admitted on first contact were males. This may be due to their being more aggressive and unmanageable in their home environment or community which warranted them to be admitted at their first contact.

EMPLOYMENT STATUS OF INPATIENTS

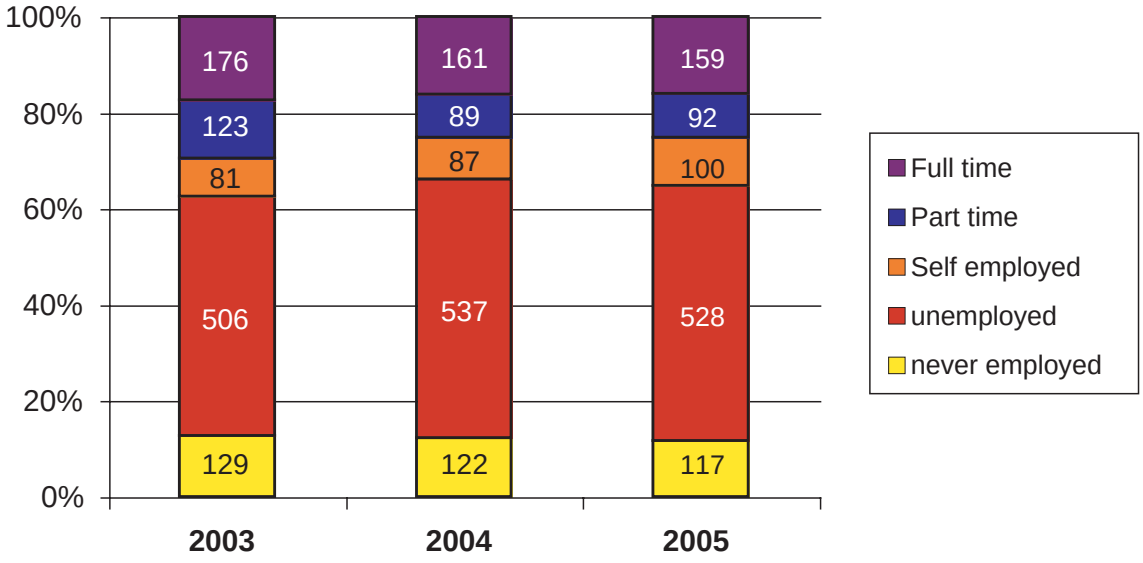


Figure 16: Employment status of inpatients

Patients who were treated as inpatient on first contact were mostly unemployed or never employed (63-66%). There are about 9-17% of patients who were working but were treated as inpatient. The severity of illness among inpatient may be the reason for their admission and inability to obtain and sustain employment.

PHARMACOTHERAPY AND USE OF CONCOMITANT MEDICATIONS

	2003	2004	2005	Total
N	1785 *(100%)*	1959 *(100%)*	1904 *(100%)*	5648
Oral only	1767 *(99%)*	1933 *(99%)*	1871 *(98%)*	5571
Depot only	18 *(1%)*	26 *(1%)*	33 *(2%)*	77

Table 7: Route of pharmacotherapy

Almost all patients (98-99%) were only started on oral medication during first contact. This was probably due to the fact that depot treatment was reserved for patients with poor compliance to oral treatment.

Type Of Pharmacotherapy

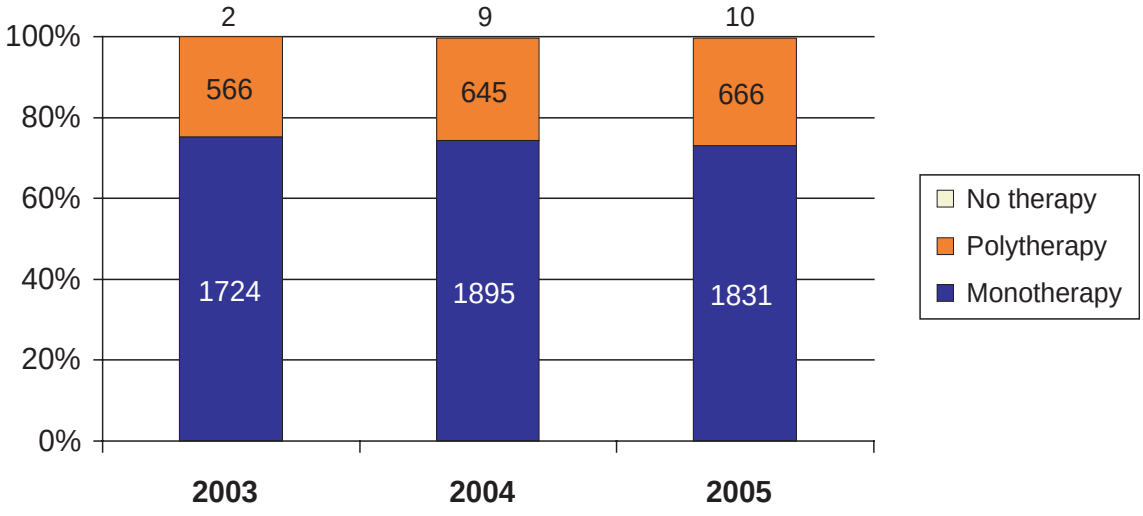


Figure 17: Type of pharmacotherapy

More than 70% of patients were only given one type of medication whereas about 23.5% were given polytherapy which is a combination of typical, atypical and depot antipsychotics.

Details Of Pharmacotherapy

	2003	2004	2005	Total
Monotherapy				
Typical N	720 *(100%)*	776 *(100%)*	553 *(100%)*	2049
CPZ	83 *(11.5%)*	86 *(11.1%)*	93 *(16.8%)*	262
Melleril	8 *(1.1%)*	18 *(2.3%)*	1 *(0.2%)*	27
PPZ	21 *(2.9%)*	21*(2.7%)*	22 *(4%)*	64
HPL	357 *(49.6%)*	348 *(44.8%)*	213 *(38.5%)*	918
Stellazine	35 *(4.9%)*	20 *(2.6%)*	17 *(3.1%)*	72
Sulpiride	200 *(27.8%)*	270 *(34.8%)*	202 *(36.5%)*	672
Others	16 *(2.2%)*	13 *(1.7%)*	5 *(0.9%)*	34
Atypical N	330 *(100%)*	362 *(100%)*	421 *(100%)*	1113
Risperdal	249 *(75.5%)*	238 *(65.7%)*	268 *(63.7%)*	755
Olanzapine	65 *(19.7%)*	86 *(23.8%)*	107 *(25.4%)*	258
Quetiapine	3 *(0.9%)*	10 *(2.8%)*	14 *(3.3%)*	27
Clozapine	9 *(2.7%)*	24 *(6.6%)*	27 *(6.4%)*	60
Ziprasidone	0	2 *(0.6%)*	4 *(1%)*	6
Others	4 *(1.2%)*	2 *(0.6%)*	1 *(0.2%)*	7
Depot N	18 *(100%)*	26 *(100%)*	33 *(100%)*	77
Modecate	12 *(66.7%)*	15 *(57.7%)*	17 *(51.5%)*	44
Fluanxol	5 *(27.8%)*	10 *(38.5%)*	10 *(30.3%)*	25
Clopixol	0	0 (0)	3 *(9.1%)*	3

Table 8: Details of pharmacotherapy - Monotherapy

The most commonly used typical agents were haloperidol, followed by sulpiride and chlorpromazine. However there was a trend over the 3 years which showed an increasing prescription of perphenazine and a decrease in the use of haloperidol.

Among the commonly used atypical antipsychotics, risperidone was the most preferred initial treatment of patients followed by olanzapine and quetiapine. Presumably this prescribing pattern was due to their availability in the reporting centers.

Polytherapy.

Polytherapy	2003		2004		2005		Total
N	695	*(100%)*	754	*(100%)*	814	*(100%)*	2263
Typical & typical	77	*(11.1%)*	61	*(8.1%)*	86	*(10.6%)*	224
Atypical & typical	104	*(15%)*	90	*(11.9%)*	117	*(14.4%)*	311
Atypical & atypical	3	*(0.4%)*	4	*(0.5%)*	4	*(0.5%)*	11
Typical & depot	453	*(65.2%)*	525	*(69.6%)*	496	*(60.9%)*	1474
Atypical & depot	51	*(7.3%)*	65	*(8.6%)*	102	*(12.5%)*	218
Atyp & typ & depot	7	*(1%)*	9	*(1.2%)*	9	*(1.1%)*	25

Table 9: Details of polytherapy

Prescribing patterns from the data are contrary to existing evidence. There is a concern for the use of polytherapy in our practice.

Polypharmacy may be used for a number of reasons, i.e. when a patient responds poorly, a physician may augment another medication to what is currently prescribed; once the patient shows improvement, the physician or the patient may be reluctant to change the regime. Other reasons include while switching medication, a physician noticed an improvement when a new medication was being up-titrated and an earlier medication being down-titrated, the physician may stop the cross titration and continue prescribing both antipsychotic medications. Short hospital stay may increase the pressure for polypharmacy. Sometimes physician may feel that different medications are better for different symptoms even though the drugs are similar. For whatever reason, our practice in psychiatry should be evidence-based i.e. monotherapy.

Use Of Concomitant Medications

	2003	2004	2005	Total
N	1014 *(100%)*	1188 *(100%)*	1411 *(100%)*	3613
Antidepressant	85 *(8.4%)*	125 *(10.5%)*	137 *(9.7%)*	347
Anticholinergic	718 *(70.8%)*	859 *(72.3%)*	970 *(68.7%)*	2547
BDZ	161 *(15.9%)*	137 *(11.5%)*	209 *(14.8%)*	507
Antiepileptics	24 *(2.4%)*	49 *(4.1%)*	66 *(4.7%)*	139
Others	26 *(2.6%)*	18 *(1.5%)*	29 *(2.1%)*	73

Table 10: Details of concomitant pharmacotherapy

The table above shows that about 68-73% concomitant drugs are anticholinergics. This was perhaps due to the side effects caused by typical antipsychotics. The other concomitant medication often prescribed was benzodiazepines (11-16%). This might be due to the need to sedate patients at night or when patients were very restless or disturbed.

Benzodiazepines

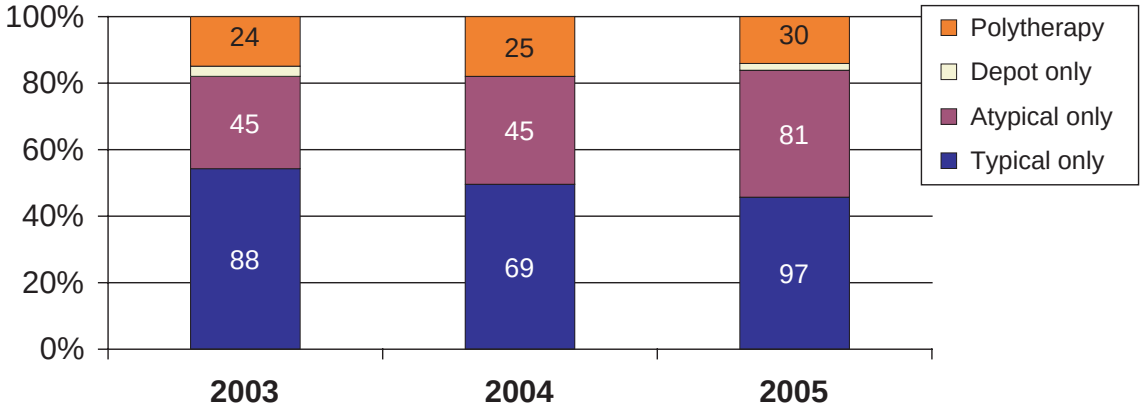


Figure 18: Benzodiazepines used by type of therapy

Anti Cholinergic

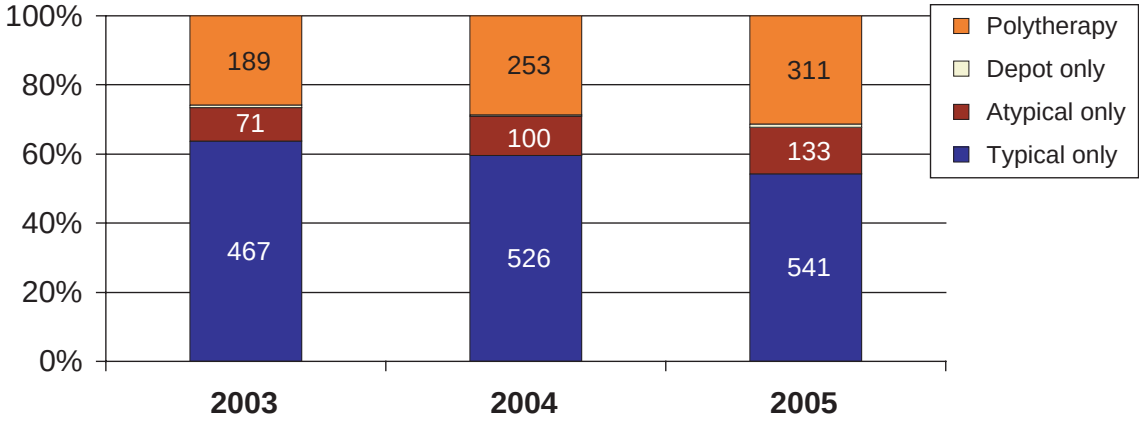


Figure 19: Anti cholinergics used by type of therapy

The data showed that concomitant therapy with anti cholinergic was found in more than 50% among those treated with typical antipsychotics. Both typical and atypical antipsychotics represent the first line treatment in acute and chronic schizophrenia. Treatment with the “older” or typical antipsychotic often leads to extra pyramidal symptoms (EPS), which range from mild Parkinson’s like tremors to rigidity to debilitating dystonia and tardive dyskinesia. The results indicate that atypical antipsychotics strongly predict fewer concomitant prescription, implying the reduce need for EPS management.

CHAPTER 4 : INCIDENCE CASES OF SCHIZOPHRENIA

INCIDENCE OF SCHIZOPHRENIA 2003-2005 AND ITS TREND

From year 2003 to 2005, there were 3714 new cases of schizophrenia being registered (Fig. 20) with an increase in the number of centers participating in this registry (Tab. 11).

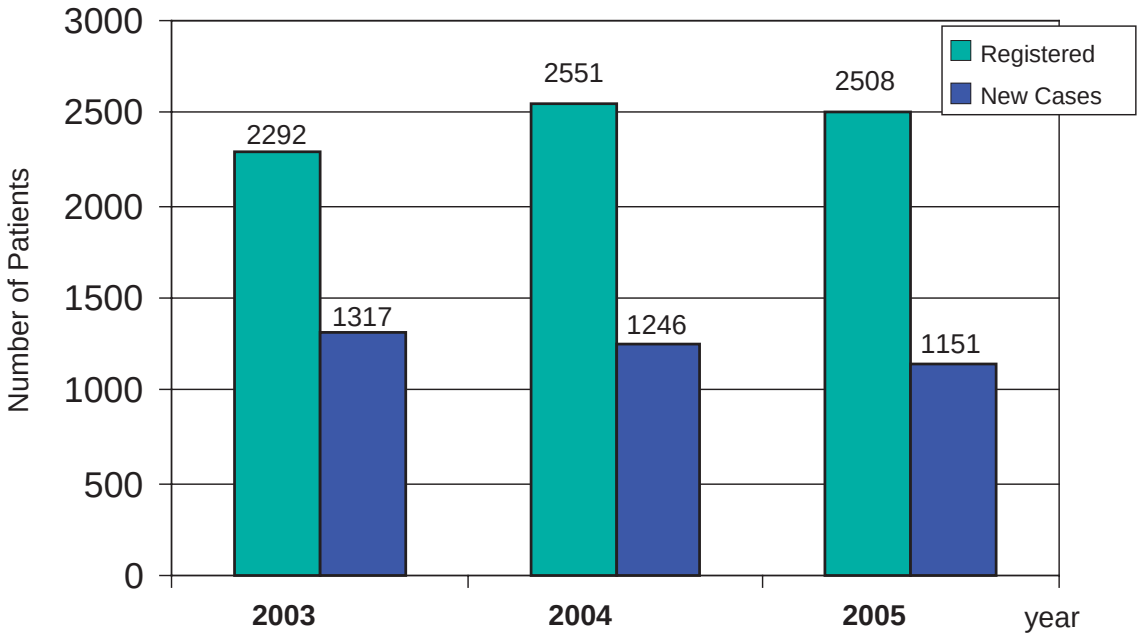


Figure 20: Registered Cases and Incidence cases of Schizophrenia 2003-2005

Year	2003	2004	2005	Total
SDP	33	43	1	77

Table 11: Number of Source Data Producers in 2003-2005.

With the Malaysian population of 25 million, the expected number of new cases of schizophrenia is about 25,000 (incidence of 0.1%). This registry captured about 5 cases per 100,000 population / year where else the expected cases is about 100 / 100,000 / year: This constitute about 5% of the expected cases which is very much and under reporting.

There are a few possible explanations to these observations which include the cases seen at the participating centers not being reported or the stigma which still exists that prevents patients from seeking treatment. At present private psychiatric clinic and hospital are not participating in this registry and significant number of new cases usually tend to visit these centers.

DEMOGRAPHIC PROFILE

From 2003 to 2005, among 7351 cases that were notified, 50.5 % (N = 3714) were identified as new cases. Ninety seven percent (N = 3604) were Malaysian citizens with 62.3% males and 37.7% females. At the time of reporting, the average age of these new patients was 30 years old. Female patients presented to the psychiatric services slightly later (mean age of 31) compared to male patients (mean age of 28).

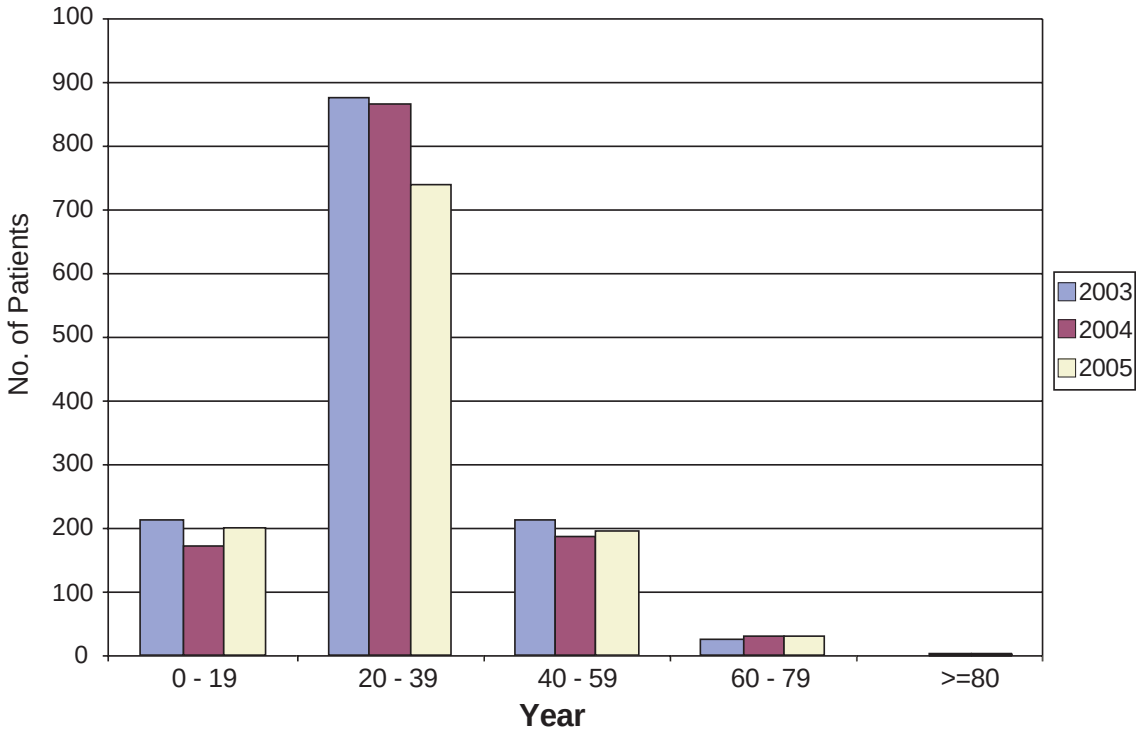


Fig. 21: Age Distribution 2003-2005

Two third of them were at their productive age (20 to 40 years old). The youngest age to have being diagnosed schizophrenia was 8 years and the eldest was 91 years. About 16 % of them were children and adolescents and expectedly very low percentage to have the illness above 80 years old (N=6, 0.2 %)

Demographic Data	2003		2004		2005		Total	
	No	%	No	%	No	%	No	%
Gender	**N = 1317**		**N = 1246**		**N = 1151**		**N = 3714**	
Male	826	63	796	63.9	691	60	2313	62.3
Female	491	37	450	36.1	460	40	1401	37.7
Citizenship	**N = 1317**		**N = 1246**		**N = 1151**		**N = 3714**	
Malaysian	1276	97	1213	97.4	1115	96.9	3604	97
Non-Malaysian	41	3	33	2.6	36	3.1	110	3
Ethnic Group	**N = 1314**		**N = 1244**		**N = 1151**		**N = 3709**	
Malay	742	56	752	60.5	651	56.6	2145	57.8
Chinese	287	22	247	19.9	270	23.5	804	21.7
Indian	97	7	93	7.5	98	8.5	288	7.8
Orang Asli	9	1	8	0.6	6	0.5	23	0.6
Kadazan	39	3	26	2.1	21	1.8	86	2.3
Iban	36	3	18	1.4	24	2.1	78	2.1
Others	104	8	100	8	81	7	285	7.7
Marital Status	**N = 1290**		**N = 1210**		**N = 1101**		**N = 3601**	
Single	900	70	848	70.1	783	71.1	2531	70.3
Married	310	24	275	22.7	234	21.3	819	22.7
Widowed	17	1	18	1.5	22	2	57	1.6
Divorced	39	3	60	5	53	4.8	152	4.2
Separated	24	2	9	0.7	9	0.8	42	1.2
Education Level	**N = 1285**		**N = 1216**		**N = 1112**		**N = 3613**	
No Formal Schooling	73	6	76	6.3	67	6	216	6
Primary School - Not completed	87	7	87	7.2	85	8	259	7.2
Primary School - completed	223	17	184	15.1	179	16	586	16.2
Secondary School - PMR	380	30	310	25.5	283	25	973	26.9
Secondary School - SPM	396	31	421	34.6	369	33	1186	32.8
Secondary School - STPM	45	4	29	2.4	34	3	108	3
Tertiary - Diploma	49	4	70	5.8	59	5	178	4.9
Tertiary - Degree	30	2	37	3	34	3	101	2.8
Tertiary - Master/PhD	2	0	2	0.2	2	0	6	0.2

Table 12: Demographic Data – incidence cases

The socio demographic data is similar to the all registered cases of schizophrenia.

Employment Status

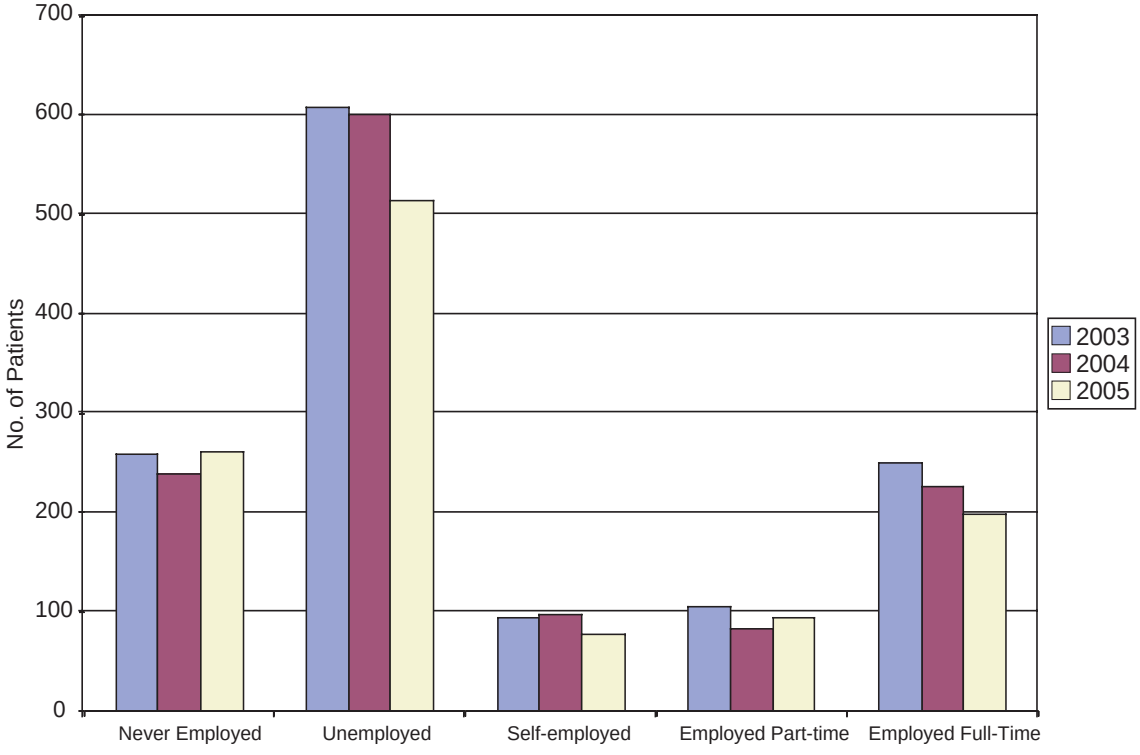


Fig. 22: Employment 2003-2005

Almost 70% of new cases had never being employed or were not employed at the time of reporting. The employment status was not seen to be influenced much by the educational level, marital status or sub-types of diagnosis and characteristics at onset. However, higher percentage of female patients (78.4%) was found to be unemployed as compared to males (59.9%). Among the working males, about 30% of them were able to work as part time or full time as compared to only 19.1% of female patients.

Twenty percent of them were still students at the time of reporting; about 30% able to do service-related work such as homemaker, waiter, maid, barber and security guard. About 6% were professionals and 2.4% were in military or police.

Weight

Eighty percent of patients had a fairly good BMI (<25), 14% were overweight (BMI> 25) and about 4% were obese (BMI > 30). The comparison of BMI with the prevalence cases is shown in the table below

BMI	Under weight	Normal	Over weight	Obese
Prevalence	1075 (15%)	4317 (62%)	1170 (17%)	443 (6%)
New Cases	674 (18.7%)	2277 (63.1%)	500 (13.9%)	155 (4.3%)

Table 13: Weight-BMI

CLINICAL PROFILE

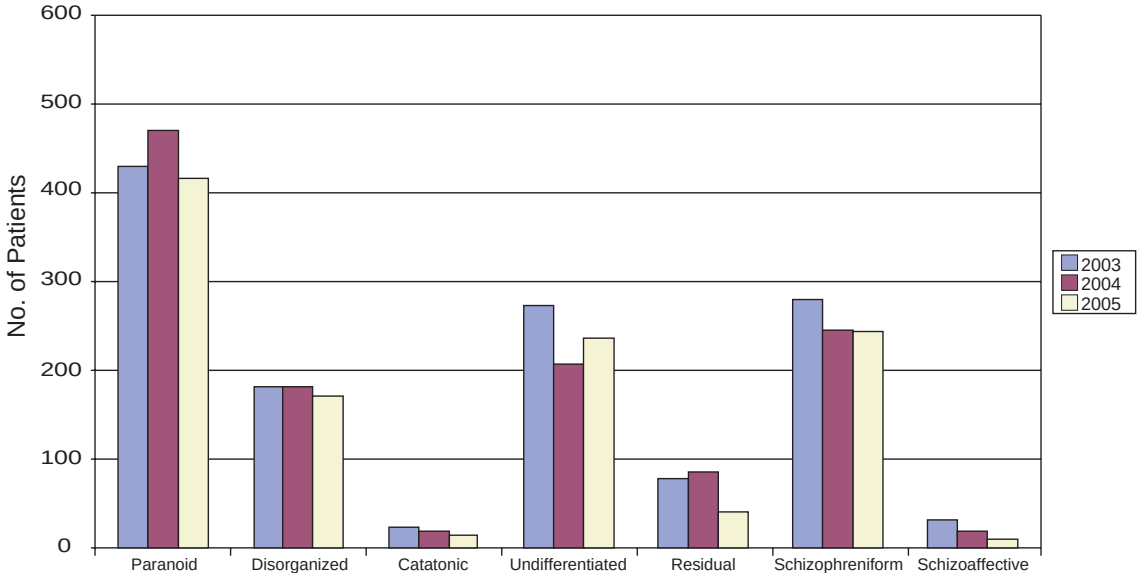


Fig. 23: Schizophrenia Subtype 2003-2005

There is no difference of sub-type distribution between prevalence and new cases of schizophrenia reported. Forty percent had an acute onset, 20% had insidious onset, 20% had chronic and another 20% had acute on chronic.

The mean duration of untreated psychosis (DUP) was 34.8 months (about 3 years) while the DUP of the prevalence cases was 28.7 months (about 2.4 years). This long DUP is unacceptable and measures should be taken to reduce it in order to improve outcome. The mean DUP of female patients (40 months) was noted to be longer than males (30 months). The DUP among those who were employed seemed to be shorter as compared to those who were unemployed. (Refer Table 14)

	Prevalence cases (months)	New cases (months)
Mean	28.7	34.8
Median	12	12
Mode	12	12

Table 14: Duration of untreated psychosis 2003-2005

PROCESS OF CARE

Care setting at first contact was similar to prevalence cases.

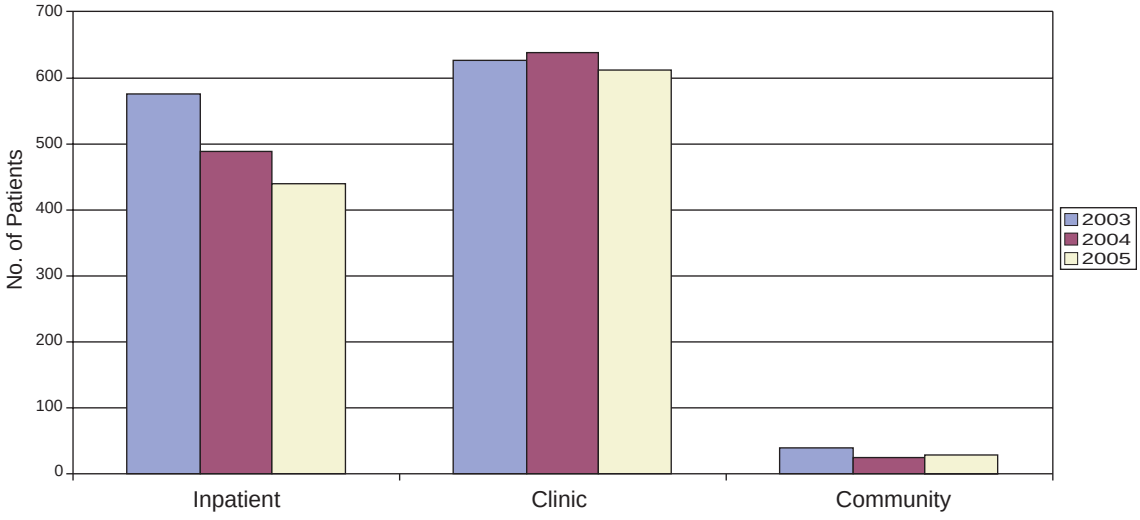


Fig. 24: Care at First Setting 2003-2005

Pharmacotherapy.

	Prevalence cases	New Cases
N	7351	3711
Monotherapy	5606 (76.3%)	3254 (87.7%)
Polytherapy	1727 (23.5%)	452 (12.2%)
Unavailable treatment data	18 (0.2%)	5 (0.1%)

Table 15: Comparison of Pharmacotherapy 2003-2005

Ninety nine percent of patients were prescribed with oral medication only. Eighty eight percent were on monotherapy as compared to only about 12% were on polytherapy. A significant percentage (12.2%) of new cases were given polytherapy. Amongst this group of patients most of them were given typical oral antipsychotic and depot injection simultaneously at their first contacts.

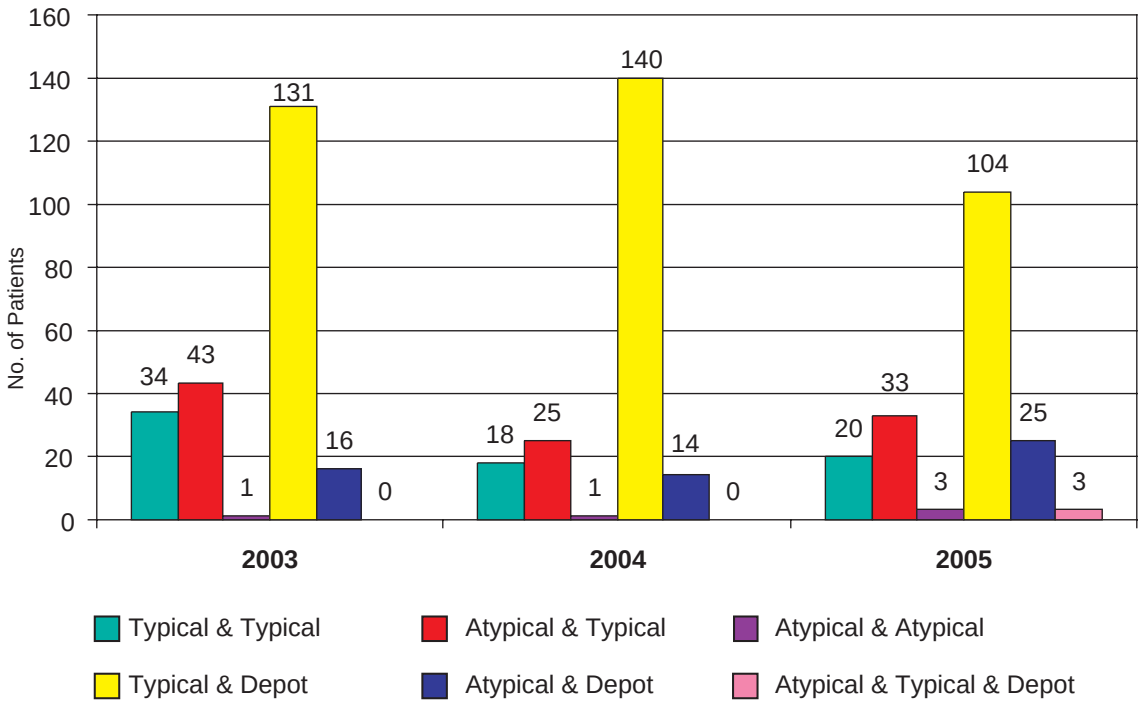


Fig. 25 : Details of Pharmacotherapy

CONCLUSIONS

From the three year (2003-2005) National Mental Health Registry for Schizophrenia, the following can be concluded:

1. **Incidence Rate**
   The incidence rate from this report is about 5 cases per 100,000 population/year where else the expected cases are about 100 cases/100,000/year. The registry has only managed to capture about 5% of the expected new cases of schizophrenia.

2. **Demographic Profile of patients with schizophrenia in Malaysia**
   Majority are in the productive age of 20-40 years. 80% of the patients were either single, divorced, widowed or separated. The majority of the cases had some form of education, at least completed middle secondary level.

3. **Unemployment**
   Employment data of the registered case revealed that almost 70% were never employed or unemployed at the time of registration.

4. **Weight**
   Mean weight of the patients were 58-59kg with about 60% within normal BMI, with one fifth of them were either overweight or obese. Based on data available from our registered cases on BMI, prescribers of antipsychotics need to consider the possible weight gain.

5. **Family History of Schizophrenia**
   Twenty three percent of cases had a positive family history of schizophrenia.

6. **DUP**
   The duration of untreated illness is long; with a mean of 28.7 months (median of 12 months); the mean being longer among females.

7. **Comorbidities**
   Approximately 20% suffered from some form of comorbidity with substance abuse being the commonest (about 80%). Cannabis was found to be the most common substance abuse followed by amphetamine / methamphetamine.

8. **Care setting**
   More than a quarter of patients were brought in to contact for treatment by their families. However more than 40% were first seen as inpatients.

9. **Pharmacotherapy**
   About 75% of the registered cases in the three years had been given monotherapy antipsychotic treatment (Haloperidol being the most common typical agent and Risperidone the most common atypical). About 20% of cases were given atypical oral antipsychotic.
   Twelve percent of the new cases had been treated with more than one antipsychotic at their first contact.

SUGGESTIONS

1. This registry provides essential data on people with schizophrenia in Malaysia. Measures need to be implemented to improve the quality of data and the under reporting of cases.

2. Programs on awareness and early detection of cases of schizophrenia need concerted efforts from all sectors including the community. Interventions done in the manner of the Scandinavian Early Treatment and Intervention in Psychosis (TIPS) is of value. It can be used in either detecting long untreated cases or in the case of a well established mental health service in treating patients early.

3. There must be an integrated treatment approach using the assertive model for young people with psychosis which is necessary to reduce the long term morbidity associated with schizophrenia and decrease unemployment.

4. Antipsychotic drugs in current use are associated with weight changes. Atypical antipsychotics had been especially associated with weight gain as an unwanted side-effect. As these drugs are used to prescribe on a long-term basis, therefore there is a need to monitor weight gain regularly.

5. There should be a multi disciplinary team approach in managing comorbidities and medical related conditions amongst people with schizophrenia.

6. There is an urgent need for the development of Clinical Practice Guideline in Management of Schizophrenia in Malaysia.

7. Finally, the data from this registry should be a platform for further research on schizophrenia in Malaysia. The recommended research areas include amongst others risk factors in schizophrenia, stigma to obtain treatment and treatment outcome measures.

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