

Five-Year Review of Adolescent Mental Health Usage in Singapore

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Abstract

Introduction: To provide a review of adolescent mental health service utilisation in a child and adolescent mental health outpatient clinic in Singapore. **Materials and Methods:** Data from all new adolescent cases seen over a 5-year period in the Child Guidance Clinic were analysed. A review of services provided is also included. **Results:** Adolescent mental health usage has been on an increase with a rise in the number of cases diagnosed with depression. There has also been an increase in the number of forensic cases seen in the department. **Conclusions:** There is a growing demand for adolescent mental health services. As the demands and stresses on today's youth increase, there is likely to be a continued increase in the demand for such services. The challenge in the future is to provide adolescent mental health services in cost-effective packages that will meet the needs as well as stay financially viable.

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Introduction

The past 20 years have seen much growth in the knowledge of child and adolescent psychiatric practice. Research has provided an improved understanding in almost every area, including epidemiology, classification and treatment. Such advances have led to better management of patients and their families. Various estimates from epidemiological studies of mental health problems in the adolescent age group suggest the size of the problem varies from 14% to 20% of the population of teens.^{1,2} In an Australian study, only 25% of those with a mental health disorder would have seen a health professional in the 6 months prior to the study, and no more than 5% of the clinical group was seen by a mental health professional.² Another study by Meltzer³ showed that 30% of the clinical population would not have been seen by a general practitioner or secondary mental health provider. Health-related quality of life was also found to be worse in many areas for children and adolescents with mental disorders when compared with children and adolescents with physical disorders.⁴

In the Singapore Population Census of the year 2000, it was estimated that there were 446,758 persons aged between 10 and 19 years.⁵ If we take into account the earlier estimates that up to 20% of youths have mental health disorders, this would mean that almost 90,000 adolescents could potentially need mental health services. The significant proportion of troubled adolescents who could potentially need mental health services, but who do not have access, are of concern.^{2,3} We present a review of new cases seen in the Child Guidance Clinic, over a 5-year period, noting changes in usage and referral patterns as well as providing a background to the history and role of Singapore's adolescent mental health services.

The Ministry of Health (MOH) Singapore made a decision to develop child mental health services in January 1970. The Child Guidance Clinic was set up on 7 April 1970 as a part-time outpatient clinic in Outram Road General Hospital (now called the Singapore General Hospital). It was staffed by a psychiatrist, psychologist, social worker and a nurse, and operated for 2 days a week. Between 1971

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and 1972, it moved to the Maternity and Child Health Clinic in Kallang. The clinic was renamed the Child Psychiatric Clinic and moved to a 2-storey pre-war building. In 1980, it was moved to the Institute of Health with modern facilities such as rooms with one-way mirrors and special video recording equipment. Inpatient psychiatric services for children and adolescents in Singapore only started in 1982. An Child Psychiatric Inpatient Unit was opened in January 1982 with 18 beds. In April 1993, the Unit was relocated to its present facilities in the new Woodbridge Hospital and renamed the Child and Adolescent Inpatient Unit. In addition to the outpatient services and the inpatient ward, the department continues to provide consultation services to various hospitals, schools, and other child-related institutions such as the Child Welfare Department of the Ministry of Community Development and Sports. Presently, the Department of Child and Adolescent Psychiatry in Institute of Mental Health represents the largest public service provider of mental health services for children and adolescents in Singapore.

Materials and Methods

The Department of Child and Adolescent Psychiatry maintains a case register of all cases seen at the outpatient clinics. Case registers for the Child Guidance Clinic (the main outpatient service of the department) were reviewed over a 5-year period from 1997 to 2001. New cases of adolescents registered in the above years were selected and analysed based on demographics, referral source and diagnosis. A new case was defined as a case of first contact with the clinic in that calendar year. An adolescent for the purpose of the study was defined as a person aged between 13 and 19 years at the point of contact with the clinic. Diagnoses were made based on the International Classification of Diseases 9 (ICD-9) criteria. They were subsequently grouped into several diagnostic codes for the purpose of analysis. Data were keyed into the Statistical Package for Social Studies (SPSS for Windows 10th Edition)

for the purpose of analysis. Poisson regression was performed using SAS 8.0 to determine whether the increase of cases from 1997 to 2001 was statistically significant. A P value <0.05 was set for statistical significance.

Results

Clinic Utilisation

Over the 5-year period the clinic saw a total of 2536 new adolescent cases. There was an increase of 33.2% of new adolescent cases seen in 2001, compared to 1997 ($P < 0.001$, $RR = 1.33$, 95% $CI = 1.18$ to 1.51). This was consistent with the increase of total new cases seen in the clinic, which showed an increase of 29.6% from 1398 to 1811 for the same period when children below 12 years were also included ($P < 0.001$, $RR = 1.30$, 95% $CI = 1.21$ to 1.39). It was important to note that during the same period, there was no increase in staffing, thus suggesting that the increase was not due to more staff seeing more patients.

Sources of Referral

A breakdown of sources of referral is shown in Table I. A rise in the percentage of total referrals was noted in the referrals from the polyclinics from 15.3% to 27.2% ($P < 0.001$, $RR = 2.39$, 95% $CI = 1.80$ to 3.18) of all referrals for the year. A similar rise in the percentage of referrals from 25.6% to 31.7% ($P < 0.001$, $RR = 1.67$, 95% $CI = 1.32$ to 2.11) was also seen in the referrals from the schools. A significant rise in forensic cases referred by the police and courts was also seen ($P = 0.002$, $RR = 2.94$, 95% $CI = 1.67$ to 5.18). One possible reason could be due to an overall increase in the awareness and perception of the importance of mental health for adolescents. With MOH's emphasis on community prevention through the Health Promotion Board, more schools were referring problem adolescents to our clinic. The increase in referrals by polyclinic doctors was possibly due to greater awareness of our services through

TABLE I: THE DISTRIBUTION OF SOURCES OF REFERRAL OVER TIME

Source of referral	1997 (n = 438)	1998 (n = 509)	1999 (n = 539)	2000 (n = 446)	2001 (n = 589)	Total (n = 2521*)
Polyclinics	67 (15.3%)	107 (21.0%)	126 (23.4%)	93 (20.9%)	160 (27.2%)	553 (21.9%)
Schools	112 (25.6%)	123 (24.2%)	152 (28.2%)	122 (27.4%)	187 (31.7%)	696 (27.6%)
Restructured hospitals	74 (16.9%)	61 (12.0%)	52 (9.6%)	43 (9.6%)	65 (11.0%)	295 (11.7%)
School Health Service	25 (5.7%)	23 (4.5%)	13 (2.4%)	21 (4.7%)	15 (2.5%)	97 (3.8%)
Forensic, police and court	16 (3.7%)	49 (9.6%)	64 (11.9%)	63 (14.1%)	47 (8.0%)	239 (9.5%)
Self-referrals	55 (12.6%)	60 (11.8%)	58 (10.8%)	59 (13.2%)	59 (10.0%)	291 (11.5%)
General and private practitioners	34 (7.8%)	34 (6.7%)	54 (10.0%)	32 (7.2%)	39 (6.6%)	193 (7.7%)
MCDS ¹ and VWOs ²	31 (7.1%)	37 (7.3%)	11 (2.0%)	6 (1.3%)	6 (1.0%)	91 (3.6%)
Intra-hospital	12 (2.7%)	11 (2.2%)	6 (1.1%)	6 (1.3%)	3 (0.5%)	38 (1.5%)
Others	12 (2.7%)	4 (0.8%)	3 (0.6%)	1 (0.2%)	8 (1.4%)	28 (1.1%)

MCDS: Ministry of Community Development and Sports; VWOs: voluntary welfare organisations

*In another 15 cases, the source of referral is unclear.

lectures, talks and seminars organised for healthcare professionals as well as similar activities for the general public conducted by the department staff under the auspices of MOH's "Mind Your Mind" programme. The referral pattern is similar to studies of adolescent mental health centres in other countries.^{6,7} The male preponderance of cases seen is also reflective of most other studies of this nature. This is likely to be related to the fact that adolescents who act out and show behavioural problems are more likely to be referred to mental health services.

Demographics

Gender: More boys were seen compared to girls with no significant change in trend over the years (Fig. 1). Boys on average were 1.36 times ($P < 0.001$, 95% CI = 1.26 to 1.47) as likely to use the outpatient mental health services compared to girls. The male sex was also over-represented in externalising disorders, such as conduct disorder and behaviour problems, which accounted for 18.4% of cases seen. The onset of psychosis is also known to be younger in the male population, supported by greater number of

male cases of psychosis seen in the clinic, which accounted for 3.8% of all cases seen.⁸

Ethnicity: Racial breakdown for adolescent new cases attending the clinic in this period was as follows: Chinese—5.1%, Malays—14.3%, Indians—7.7% and others—2.9%. This was comparable with Singapore's ethnic distribution of 76.8% Chinese, 13.9% Malays, 7.9% Indians and 1.4% others.⁵ Adolescent mental health services were thus used equally by all the major races with no disproportionate usage in any particular race.

Diagnosis

A breakdown of the various diagnostic groups seen in the clinic is shown in Table II. The rise in cases of depression and mood disorders from 10.6% to 16.8% ($P < 0.001$, 95% CI 1.26 to 1.47) correlate well ($r = 0.754$; however, they were not statistically significant, likely due to small numbers involved) with the national suicide rates in the adolescent population. Further data over the years would be required to confirm this trend. Depression has, however, been known to be one of the more significant risk factors in suicide. This is of national concern for a number of reasons; the young suicide is tragic as many who survive can continue to lead productive lives. Such untimely deaths also cause great distress to those who are left behind, such as parents, siblings and others. The department has organised mental health education programmes, such as seminars for teachers, to increase awareness for teenage suicide and to improve detection of such suicidal adolescents. The Samaritans of Singapore has also been holding annual suicide prevention weeks to highlight and inform the public on suicide. Diagnoses of psychosis have been kept at a constant rate of between 3.4% to 4.7%. Early intervention and treatment has shown improved outcome

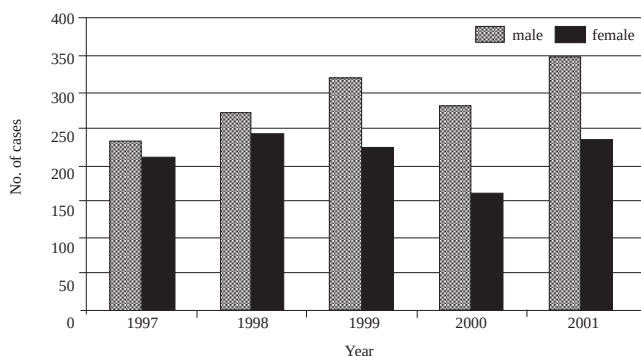


Fig. 1. Distribution of gender over time.

TABLE II: THE DISTRIBUTION OF DIAGNOSES OVER TIME

Diagnosis/Year	1997 (n = 442)	1998 (n = 514)	1999 (n = 545)	2000 (n = 446)	2001 (n = 589)	Total (n = 2536)
Mood disorders	47 (10.6%)	46 (8.9%)	55 (10.1%)	62 (13.9%)	99 (16.8%)	309 (12.2%)
Psychotic disorders	17 (3.8%)	24 (4.7%)	19 (3.5%)	15 (3.4%)	21 (3.6%)	96 (3.8%)
Anxiety disorders	40 (9.0%)	41 (8.0%)	52 (9.5%)	46 (10.3%)	62 (10.5%)	241 (9.5%)
Conduct and oppositional disorders	104 (23.5%)	117 (22.8%)	78 (14.3%)	78 (17.5%)	89 (15.1%)	466 (18.4%)
Stress and adjustment disorders	93 (21.0%)	87 (16.9%)	114 (20.9%)	56 (12.6%)	81 (13.8%)	431 (17.0%)
Mental retardation	13 (2.9%)	27 (5.3%)	35 (6.4%)	35 (7.8%)	41 (7.0%)	151 (6.0%)
Somatoform disorders	3 (0.7%)	6 (1.2%)	2 (0.4%)	1 (0.2%)	3 (0.5%)	15 (0.6%)
Learning disorders	15 (3.4%)	15 (2.9%)	10 (1.8%)	10 (2.2%)	13 (2.2%)	63 (2.5%)
Sexual/physical abuse	6 (3.4%)	24 (4.7%)	22 (4.0%)	37 (8.3%)	29 (4.9%)	118 (4.7%)
Eating disorders	15 (1.4%)	17 (3.3%)	12 (2.2%)	9 (2.0%)	21 (3.6%)	74 (2.9%)
Autism/autistic spectrum disorders	0 (0.0%)	8 (1.6%)	13 (2.4%)	3 (0.7%)	12 (2.0%)	36 (1.4%)
Attention deficit disorders	6 (1.4%)	7 (1.4%)	10 (1.8%)	10 (2.2%)	21 (3.6%)	54 (2.1%)
Medical disorders	0 (0.0%)	2 (0.4%)	3 (0.6%)	3 (0.7%)	3 (0.5%)	11 (0.4%)
Miscellaneous disorders	42 (9.5%)	45 (8.8%)	51 (9.4%)	49 (11.0%)	48 (8.1%)	235 (9.3%)
Normal or normal variations	41 (9.3%)	48 (9.3%)	69 (12.7%)	32 (7.2%)	46 (7.8%)	236 (9.3%)

in psychosis, and much international interest has been directed towards this issue and to its potential long-term impact.⁹ To tackle this issue of adolescent psychosis, the Early Psychosis Intervention Programme was launched by MOH in 2000 and collaboration with the Department of Child and Adolescent Psychiatry has been developed to assist adolescents who have a psychotic breakdown. Despite the rise in number of cases referred, cases with no psychiatric condition or normal variations remained constant at about 9.3%. Most of these cases involved anxious parents or overenthusiastic professionals who misunderstood adolescent angst as a sign of mental disorder. It is a good sign that less than 10% of cases have no mental disorder. Perhaps, more education would result in an even lower referral rate for cases with sub-clinical or no pathology. This, together with provision of other resources to deal with such problems at a more primary level in view of the scarce resources available would make our specialist adolescent mental health services more readily accessible to the population in need. In the last 5 years, the number of Family Service Centres have grown to provide for the growing need in this area. These centres provide primary mental healthcare services. The Ministry of Education has also developed the Psychological Services and Guidance Branch to provide psychosocial support to the schools.

Forensic Aspects

The number of adolescent forensic cases seen in the clinic rose from 16 in 1997 to 47 in 2001 ($P = 0.002$, $RR = 2.49$, 95% $CI = 1.67$ to 5.18). This represented a rise of 116% in terms of percentage of all new cases seen from 1997 to 2001. The cases seen at our setting include assessment of divorce and custody cases, assessment of both victims and adolescent perpetrators of sexual and other forms of abuse, as well as the assessment of delinquent youths who have suspected mental disorder or with actual mental illness. Major changes in the field of adolescent forensic issues include the large increase in research on forensic populations. In the United States, there has also been a trend of seeing adolescents more as adults, acknowledging greater competence and invoking adult standards, and punishments in criminal law.¹⁰

Smoking Cessation Clinic

The clinic saw an average of 532 patients and saw a rise of 38.7% in new referrals over the same period. Referrals were mainly from schools as well as the police. There was a disproportionate level of Malay adolescents referred to the clinic—52.1% were Chinese, 41.3% were Malay, 4.3% were Indians and 2.9% were others. This correlated with the National Health Survey conducted by MOH in 1998, which showed that the smoking rate of 23.5% was highest in Malays, compared to 15.9% in Indians and 13.6% in

Chinese.¹¹ The figures for younger women aged between 20 and 29 years have also been rising with an increment from 2.5% in 1992 to 6.7% in 1998.¹¹ About 20% of males and 3.7% of females aged 18 to 19 years smoked in Singapore.¹¹ Evidence show that around 50% of those who started smoking in their adolescent years go on to smoke for another 15 to 20 years and the mean age where they first established their smoking pattern was at 17 years of age, about 2 years after they started experimenting with tobacco.¹¹ It is envisioned that early intervention would allow the habit to be stopped before the chronic pattern of smoking is established.

Discussion

The future of adolescent psychiatry is at a rather interesting crossroad. Research in the fields of brain biology, genetics, immunology, psychosocial development, psychotherapy and psychopharmacology are all holding tremendous promise and hope in the treatment and even the prevention of such disorders. The current era promises to be an exciting time of potential growth in the discipline. At the same time, the truth of health economics and issues of cost effectiveness continue to loom in the horizon. The advent of Managed Health Care in the United States with the pressures to provide rapid resolution of symptoms saw an increase from 1.1 million psychotropic medication visits in 1985 to 3.3 million in 1995.¹² The use of multi-drug regimes are possibly too aggressive with the traditional caution of the use of new drugs in children replaced with eagerness to ameliorate symptoms quickly with less care of potential long-term consequences. In view of this, more directed research on outcome measures of the adolescents, like that of Russell showing effectiveness of family therapy on adolescents with anorexia nervosa, is needed to convince governments and health administrators of the effectiveness of these measures, which are often labour and time-consuming.¹³⁻¹⁵ The views of adolescents with regard to mental health services would also have to be considered and researched systemically, an area traditionally neglected.¹⁶ Dissatisfaction with mental health experiences may lead to lower likelihood of repeat attendances or compliance with prescribed regimes and treatments, thereby affecting eventual outcome. The importance of support and empathy was repeatedly emphasised in a survey of adolescent mental health users, and treatment seen primarily as doling out of medication was judged harshly.¹⁷ This again reiterates the point that adolescent psychiatric services, in the need to generate more patient numbers with increased visits, may jeopardise the very thing they set out to do. In the light of evidence showing the association between adolescent psychiatric diagnosis with long-term positive outcomes, such as anxiety with significant later risk of developing other psychiatric disorders, illicit drug usage,

suicidal behaviour and underachievement, and long-term follow-up studies of youths who had previously been treated showing that their treatment gains being maintained, the need to ensure compliance in these youths is further reiterated.^{18,19}

There is, however, a need for good research into the local and Asian population. Most of the literature reviewed was from the Western population, and may not be fully applicable to the local context. To this end, the department is expanding in its research capabilities, with emphasis on the cultural differences of our context. We hope to surge forward in the thrust towards more understanding of the needs of the adolescents in our local context and perhaps even provide the lead in the region, by providing innovative strategies to help this population to cope. The programmes available for youth would be expanded, and with this, the need to attract more staff and talent into this area of potential growth.

Conclusion

Adolescence is a period of complex changes of not only the physical and physiological nature, but also a large component of the psychological realm, amongst them the issues of individual identity and detachment from primary caregivers. These complexities, coupled with the presence of mental health issues, provide a challenge to the provider of such services, to not only provide a comprehensive but also to provide a cost-effective one as well. These issues also by necessity demand a multi-disciplinary team to deal with the often multiple areas in which such youth require help in. The demand of adolescent psychiatric services in Singapore has been growing and is likely to continue to do so. This is especially so in the face of the increasingly stressful demands placed upon the youth of Singapore to excel, multitask and micromanage their lives. Child and Adolescent Psychiatry is a young and vibrant service in Singapore which itself is in a phase of adolescence, in its search for individuation from its parent services of adult and general psychiatry. The search and thrust therefore dictates that more research and funding has to be provided to further illuminate the path ahead, like fuel for a lantern entering into primal woods. The need for financial viability, however, also necessitates that the fuel used is cost-efficient.

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