

MENTAL HEALTH INITIATIVES IN SINGAPORE

Dr Tan Tze Lee

SFP2010; 36(4): 5

As Singapore enters into its next phase of economic and social development, this progress comes with a price. The stresses and strains that accompany our constant striving for improvement and advancement make enormous demands on our mental and psychological well being.

Mental health, long neglected by our society and the medical community, has now come to the forefront in recent years as we begin to acknowledge the plight of many sufferers of mental ill health. As much as 16.6% of our Singapore population were found to have some form of mental ill health at some time in their lives. Many do not seek help for these problems, as the stigma associated with mental illness remain strong to this day. Some 3% of our population suffer from schizophrenia and psychotic disorders, with 75% of such patients presenting before the age of 25 years.

The World Health Organisation's global focus on mental health is highlighted with the World Mental Health Day this October 2010. The WHO Mental Health Initiative is described by Prof Goh Lee Gan in this issue.

It is timely too, to bring to the forefront the attention of our readers to the efforts in Singapore to advance the cause of mental health. Such efforts include the Early Psychosis Intervention Programme [EPIP] which was launched in 2001, and more recently the research initiative LYRIKS (Longitudinal Youth-at-Risk Study), which seeks to identify the risk factors for the development of psychosis, engage and increase public awareness of psychosis and the at risk mental state [ARMS]. The importance of engaging primary care and allied health professionals, as well as the general public is well covered by Dr Jimmy Lee's article. With such initiatives in place, it is our hope and desire that mental health in Singapore

society can be improved across the board.

Primary Care and Family Physicians have from time immemorial been the backbone of the medical services in Singapore. For a time, society had tended to look towards subspecialisation and hospital-based medicine as being de rigeur. Over the recent years, health authorities throughout our global village have realised the importance played by primary care physicians, and are beginning to engage them further in the management of cases traditionally thought to be under the "specialists" purview. Singapore's Mental Health Blueprint and Policy recognises the important role GPs can play in the provision of care to patients with mental illness. Dr Alvin Lum's description of a GP integrated mental health care programme highlights how enlightened individuals can drive such integrated programmes in the community. Such engagement with GPs, together with adequate training equips and empowers the GP to manage cases in partnership with his specialist colleagues. We look forward to more such programmes in other specialities!

Addiction is another issue we are faced with on a daily basis. Whether it be to psychoactive drugs, nicotine or behaviour problems like pathological gambling, there are very real problems for which we have to find solutions. Prof Wong Kim Eng's article illustrates well the problems pathological gamblers face, and showcased the different services and treatment modalities available at the National Addiction Management Service.

There is therefore an urgent need to equip ourselves with the skills and tools to manage these hitherto neglected mental health issues. Prof Goh's description of our Mental Health Curriculum illustrates the current state and future challenges our medical educators face in training our young doctors.

In our endeavour to prevent mental ill health and reduce the mental illness disease burden, it is our hope that this issue will be able to bring back our focus on mental health, highlighting how we in the primary care community can make a positive contribution towards better mental health in Singapore in the 21st century.

TAN TZE LEE, Honorary Editor, College of Family Physicians Singapore

OVERVIEW OF “PRIMARY CARE MENTAL HEALTH” FAMILY PRACTICE SKILLS COURSE

A/Prof Goh Lee Gan

SFP2010; 36(4): 8-9

INTRODUCTION

Promoting primary care mental health is a WHO mental health initiative. Health systems around the world face enormous challenges in delivering care and protecting the human rights of people with mental, neurological and substance use disorders. The resources available are insufficient, inequitably distributed and inefficiently used. As a result, a large majority of people with these disorders receive no care at all. There is a widely shared but mistaken idea that all mental health interventions are sophisticated and can only be delivered by highly specialized staff. Research in recent years has demonstrated the feasibility of delivery of pharmacological and psychosocial interventions in non-specialized health-care settings. The reality is that most of the mental, neurological and substance use conditions that result in high morbidity and mortality can be managed by non-specialist health care providers. What is required is increasing the capacity of the primary care system for delivery of an integrated package of care by training, support and supervision. This is the focus of this distance learning module.

COURSE OUTLINE AND CME POINTS

This skills course is made up of the following components. You can choose to participate in one or more parts of it. The CME points that will be awarded are also indicated below. Note that there are no seminars or workshops organized to accompany this distance learning course.

Components and CME Points

- Distance Learning Course – 6 units (6 CME points upon completing the Distance Learning Online Assessment)
- Reading papers on Primary Care Mental Health 2010 – read 5 out of 10 recommended journals (max. of 5 CME points for the whole CME year).

GOH LEE GAN, Associate Professor, Head, Division of Family Medicine, University Medicine Cluster, National University Health System
Senior Consultant, Institute of Family Medicine, College of Family Physicians Singapore

Distance Learning Course

- Unit 1 : World Mental Health Perspective
A/Prof Goh Lee Gan
- Unit 2 : General Practitioners in Mental Health Promotion and Prevention – Psychosis as a Model
Dr Jimmy Lee
- Unit 3 : Pathological Gambling – Treatment and Role of the Primary Care Physician
Dr Wong Kim Eng
- Unit 4 : The Successful Collaboration Between Psychiatrist, a Mental Health Institution and General Practitioners in Primary Care
Dr Lum Wai Mun Alvin, Jace Chew, Dr Lim Boon Leng
- Unit 5 : Managing patients with Mental Illness in Primary Care: Apprehensions and Views of General Practitioners
Janhavi Ajit Vaingankar, Fong Chee Weng, A/Prof Kwok Kian Woon, A/Prof Lee Kheng Hock, Dr Lum Wai Mun Alvin, A/Prof Chong Siow Ann
- Unit 6 : Mental Health Curriculum
A/Prof Goh Lee Gan

COURSE TOPIC DETAILS

Unit 1: World Mental Health Perspective

- Introduction
- Nine key messages
- Conclusions.

Unit 2: General Practitioners in Mental Health Promotion and Prevention – Psychosis as a Model

- Schizophrenia
- Early Psychosis Intervention Programme
- The Psychosis Syndrome
- Longitudinal Youth At Risk Study (Lyriks) – A Community Engaged Research
- Prevention in Mental Health: Pivotal Role of the GP
- Research in Mental Health Care
- Conclusions.

Unit 3: Pathological Gambling – Treatment and Role of the Primary Care Physician

- National Addiction Management Services (NAMS)
- Diagnosis of Pathological Gambling
- Early Detection by the Primary Care Physician
- The Treatment at NAMS
- Brief Intervention by the Primary Care Physician.

Unit 4: The Successful Collaboration Between Psychiatrist, a Mental Health Institution and General Practitioners in Primary Care

- Introduction
- The GP Psychiatric Programme
- Referral of Stable Patients to GPs
- Programme to date.

Unit 5: Managing patients with mental illness in primary care: apprehensions and views of general practitioners

- Introduction
- Methods
- Results
- Discussion.

Unit 6: Mental Health Curriculum

- Introduction
- Mental Health Gap Intervention Programme (mhGAP)
- mhGAP Intervention Guide (mhGAP-IG)
- Purpose of mhGAP-IG
- Mental Health Curriculum in Singapore.

ABSTRACT

Health systems around the world face enormous challenges in delivering care and protecting the human rights of people with mental, neurological and substance use disorders. The 9 key messages of the WHO publication *Promoting Mental Health* describes the strategy to achieve positive mental health worldwide. The bottom line is there is no health without mental health. The motivating force for mental health for helping everyone achieve positive mental health must come from everyone – people, policy makers and profession. The press should keep everyone aware too.

SFP2010; 36(4): 10-11

INTRODUCTION

Health systems around the world face enormous challenges in delivering care and protecting the human rights of people with mental, neurological and substance use disorders. The resources available are insufficient, inequitably distributed and inefficiently used. As a result, a large majority of people with these disorders receive no care at all.

This felt need worldwide has spearheaded the development of a WHO report edited by Helen Herrman, Shekhar Saxena, and Rob Moodle that serves as a useful reference to create a paradigm shift, titled *Promotion of Mental Health: Concepts, Evidence and Practice* published in 2005. The publication has 288 pages. There are 9 key messages that together described the strategies in this paradigm shift. Message 1 & 2 define the importance of mental health and the positive mental health definition of all. Message 9 highlights the need to regard mental health as everyone's business.

MESSAGE 1 – THERE IS NO HEALTH WITHOUT MENTAL HEALTH

The World Health Organization (WHO) defines health as:

... a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

Mental health is clearly an integral part of this definition. The goals and traditions of public health and health promotion can be applied just as usefully in the field of mental health as they have been in heart health, infectious diseases and tobacco control.

GOH LEE GAN, Associate Professor, Head, Division of Family Medicine, University Medicine Cluster, National University Health System
Senior Consultant, Institute of Family Medicine, College of Family Physicians Singapore

MESSAGE 2 – MENTAL HEALTH IS MORE THAN THE ABSENCE OF MENTAL ILLNESS: IT IS VITAL TO INDIVIDUALS, FAMILIES AND SOCIETIES

Mental health is described by WHO as:

... a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.

In this positive sense mental health is the foundation for well-being and effective functioning for an individual and for a community. This core concept of mental health is consistent with its wide and varied interpretation across cultures.

MESSAGE 3 – MENTAL HEALTH IS DETERMINED BY SOCIOECONOMIC AND ENVIRONMENTAL FACTORS

Mental health and mental illnesses are determined by multiple and interacting social, psychological and biological factors, just as health and illness in general. The clearest evidence for this relates to the risk of mental illnesses, which in the developed and developing world is associated with indicators of poverty, including low levels of education, and in some studies with poor housing and low income. The greater vulnerability of disadvantaged people in each community to mental illnesses may be explained by such factors as the experience of insecurity and hopelessness, rapid social change, and the risks of violence and physical ill-health.

MESSAGE 4 – MENTAL HEALTH IS LINKED TO BEHAVIOUR

Mental, social and behavioural health problems may interact so as to intensify their effects on behaviour and well-being. Substance abuse, violence, and abuses of women and children on the one hand, and health problems such as heart disease, depression and anxiety on the other, are more prevalent and more difficult to cope with in conditions of high unemployment, low income, limited education, stressful work conditions, gender discrimination, unhealthy lifestyle and human rights violations.

MESSAGE 5 – MENTAL HEALTH CAN BE ENHANCED BY EFFECTIVE PUBLIC HEALTH INTERVENTIONS

The improvement in heart health in several countries has had more to do with attention to environment, tobacco and nutrition policies than with specific medicines or treatment techniques. The malign effects of changing environmental conditions on

heart health have been reversed to varying extents by actions at multiple levels. Similarly, research has shown that mental health can be affected by non-health policies and practices, for example in housing, education and child care. This accentuates the need to assess the effectiveness of policy and practice interventions in diverse health and non-health areas. Despite uncertainties and gaps in the evidence, we know enough about the links between social experience and mental health to make a compelling case to apply and evaluate locally appropriate policy and practice interventions to promote mental health.

MESSAGE 6 – COLLECTIVE ACTION DEPENDS ON SHARED VALUES AS MUCH AS THE QUALITY OF SCIENTIFIC EVIDENCE

In some communities, time-honoured practices and ways of life maintain mental health even though mental health may not be identified as the outcome, or identified by name. In other communities, people need to be convinced that making an effort to improve mental health is realistic and worthwhile.

MESSAGE 7 – A CLIMATE THAT RESPECTS AND PROTECTS BASIC CIVIL, POLITICAL, ECONOMIC, SOCIAL AND CULTURAL RIGHTS IS FUNDAMENTAL TO THE PROMOTION OF MENTAL HEALTH

Without the security and freedom provided by these rights it is very difficult to maintain a high level of mental health.

MESSAGE 8 – INTERSECTORAL LINKAGE IS THE KEY FOR MENTAL HEALTH PROMOTION

Mental health can be improved through the collective action of society. Improving mental health requires policies and programmes in government and business sectors including

education, labour, justice, transport, environment, housing and welfare, as well as specific activities in the health field relating to the prevention and treatment of ill-health.

MESSAGE 9 – MENTAL HEALTH IS EVERYBODY'S BUSINESS

Those who can do something to promote mental health, and who have something to gain, include individuals, families, communities, commercial organizations and health professionals. Particularly important are the decision-makers in governments at local and national levels whose actions affect mental health in ways that they may not realize. International bodies can ensure that countries at all stages of economic development are aware of the importance of mental health to community development. They can also encourage them to assess the possibilities and evidence for intervening to improve the mental health of their population.

One other stakeholder not mentioned to be in everyone's business is the press. The power of the media is considerable and the press should actively promote positive mental health and keep everybody on the same page on what is going on.

CONCLUSIONS

The 9 key messages of the WHO publication describes the strategy to achieve positive mental health worldwide. The motivating force must come from everyone. The bottom line is there is no health without mental health. The motivating force for mental health for helping everyone achieve positive mental health must come from everyone – people, policy makers and profession. The press should keep everyone aware too.

REFERENCES

World Health Organisation. Promoting Mental Health. Geneva:WHO, 2005.

LEARNING POINTS

- **Health systems around the world face enormous challenges in delivering care and protecting the human rights of people with mental, neurological and substance use disorders.**
 - **The 9 key messages of the WHO publication Promoting Mental Health describes the strategy to achieve positive mental health worldwide.**
 - **The bottom line is there is no health without mental health.**
 - **The motivating force for mental health for helping everyone achieve positive mental health must come from everyone – people, policy makers and profession. The press should keep everyone aware too.**
-

UNIT NO. 2

GENERAL PRACTITIONERS IN MENTAL HEALTH PROMOTION AND PREVENTION – PSYCHOSIS AS A MODEL

Dr Jimmy Lee

ABSTRACT

With the initiation of the national mental health blueprint in Singapore, emphasis has been placed on early detection and intervention, reduction of stigma, research, as well as to engage the GPs to build up a network of support in the community. In this article, schizophrenia will be used as an example to illustrate how the GP can fit into the blueprint puzzle. Schizophrenia is a serious mental illness with a lifetime prevalence of about 0.7%. The Early Psychosis Intervention Programme (EPIP) was launched in 2001 with the specific goals of raising awareness of early signs and symptoms of psychosis, reducing stigma associated with psychosis, and establishing a network with primary healthcare providers to facilitate timely review of referrals.

SFP2010; 36(4): 12-14

HYPERTENSION

With the intimate knowledge of the community they serve in, general practitioners (GPs) have several roles as doctors in the society. In their clinical work, they frequently have to contend with undifferentiated complaints and continuously keep themselves updated of the latest in medicine. They also have public health roles in surveillance, watching out for beginnings of epidemics, as well as roles in health promotion and primary prevention. Some GPs also participate in research, to find ways to improve health outcomes in primary healthcare.

With the initiation of the national mental health blueprint in Singapore, emphasis has been placed on early detection and intervention, reduction of stigma, research, as well as to engage the GPs to build up a network of support in the community. In this article, schizophrenia will be used as an example to illustrate how the GP can fit into the blueprint puzzle.

SCHIZOPHRENIA

Schizophrenia is a serious mental illness with a lifetime prevalence of about 0.7%.¹ It often develops in adolescence, and has a heterogeneous presentation characterized broadly by positive (hallucinations, delusions and disorganised thinking), negative (apathy, blunting of affect and alogia) and cognitive

(attention, memory and executive functioning) symptoms. Diagnosis of schizophrenia is based on criteria met and 2 commonly used references are the American Psychiatric Association's Diagnostic and Statistical Manual for Mental Disorders (DSM-IV-TR) or the World Health Organisation (WHO) International Classification of Diseases (ICD-10). This disorder tends to run a chronic course and results in marked disability and has been ranked as one of the top 10 causes of disability worldwide.²

The mainstay of treatment in schizophrenia lies in medication, with the equally important psychosocial strategies augmenting the treatment process. However, what is often neglected in management of schizophrenia, or most mental disorders for that matter, is prevention.

EARLY PSYCHOSIS INTERVENTION PROGRAMME

The Early Psychosis Intervention Programme (EPIP) was launched in 2001 with the specific goals of raising awareness of early signs and symptoms of psychosis, reducing stigma associated with psychosis, and establishing a network with primary healthcare providers to facilitate timely review of referrals.^{3,4} The eventual goal is to improve the outcome of those suffering from psychosis, as well as alleviate potential caregiver burden. The outreach strategies that the EPIP employed included training of GPs in private and public practice, counselors in the community and schools, as well as public forums to raise awareness. The EPIP has been successful thus far in achieving these goals and managed to reduce the duration of untreated psychosis (DUP) from a mean of 32 months to 13 months, with a third of its referrals from GPs.⁵ However, this success begs another question - can we detect and intervene earlier?

THE PSYCHOSIS PRODROME

Clinicians have long been aware that most patients diagnosed with a psychotic disorder experience a pre-psychotic phase of illness, otherwise known as a prodrome. Unfortunately, this phase is characterized by non-specific symptoms such as insomnia, mood changes, increased anxiety and social withdrawal, and is currently not a diagnosable mental disorder.⁶ In addition, the concept of prodrome is a retrospective one and can only be definitively labeled after the development of a diagnosable psychotic illness.

Researchers in the past decade have developed assessment scales to identify patients potentially in this phase of illness, prospectively identified as the at-risk mental state (ARMS).

JIMMY LEE, Associate Consultant, Research Division & Department of General Psychiatry 1, Woodbridge Hospital/Institute of Mental Health

Patient with ARMS typically are aged 14 to 30, and could experience (a) attenuated psychotic symptoms, (b) a brief limited intermittent psychotic symptoms, or (c) have a first degree family member with psychosis and a drop in recent functioning.⁷ Follow up studies of patients with ARMS from other centers reported about 14% to 35% develop a diagnosable psychotic illness in 12 months.⁸⁻⁹

With this encouraging first step in identification of ARMS came intervention studies which demonstrated that a relatively benign supplement such as fish oil, could lead to a significant drop in transition to psychosis.¹⁰

Recognizing this gap in service, the Institute of Mental Health initiated the Support for Wellness Achievement Programme (SWAP) in 2008 to cater to the clinical needs of individuals with ARMS.

LONGITUDINAL YOUTH AT RISK STUDY (LYRIKS) – A COMMUNITY-ENGAGED RESEARCH

LYRIKS is an observational study led by Associate Professor Chong Siow Ann from the Institute of Mental Health with the objective of identifying risk factors associated with the development of psychosis. Recruited participants will be followed up for 2 years, and undergo regular clinical and neuropsychological assessments, as well as neuroimaging and blood sampling. It is one of the 3 projects funded under the Neuroscience Translational and Clinical Research (TCR) grant to study vulnerability, disease progression and treatment in schizophrenia-related psychoses.

Although the study has important scientific aims to achieve, it has another more immediately relevant aim – that of engaging the community. Due to the non-specific nature of the symptoms and the stigma associated with mental illnesses, most people with ARMS will not think of consulting a psychiatrist. Therefore, it is important for the research team to raise awareness of ARMS and the best approach would be to engage frontline people or organizations in a systematic manner. Till date, the research team has conducted workshops for counselors in schools and in the community, as well as providers of mental healthcare in other organizations. The objectives of these workshops are to impart up to date knowledge on ARMS, as well as to inform the participants on how they can manage an individual with ARMS. Part of this community-engaged approach involves fostering an ongoing collaboration with these community partners to address an important mental health issue.

Through this collaboration, community partners feel equipped with up-to-date knowledge on the subject to better identify an individual with ARMS, be aware of the challenges and how to manage this individual, as well as to be aware of how and when to seek further assistance if required. At the same time, the community partners are better able to refer potential participants to LYRIKS.

PREVENTION IN MENTAL HEALTH: PIVOTAL ROLE OF GP

As outlined in the introduction, GPs play an important role in the overall provision of healthcare in Singapore, and now they have an opportunity to make a further impact in mental health. Mental health plays an integral component in the holistic approach a GP would take toward any patient.

Schizophrenia is such a devastating disorder that preventing its onset becomes an attractive goal for psychiatrists. However, if a youth experiences any of the non-specific prodromal symptoms, they are more likely to approach a GP than a psychiatrist. This is where the GP that has specialty knowledge would aid in prevention of schizophrenia. Their rapport with the individual and sometimes their family, and their experience in handling poorly differentiated complaints, are crucial in performing this role. Equipping themselves with knowledge of the psychosis prodrome will lead to earlier detection and intervention, and potentially deflect a young individual from a trajectory that leads to a chronic disabling mental disorder. With deeper understanding of psychosis, GPs can serve a further role in destigmatizing the condition and remove an important barrier of care.

RESEARCH IN MENTAL HEALTH

Collaboration with LYRIKS might serve a few objectives and benefit the GPs, the research team, and most importantly – the patients. Through LYRIKS, GPs receive updated knowledge on ARMS and enjoy continuous updates from the research team. Through the training and continued partnership, GPs get equipped with knowledge on ARMS and become more confident in identifying and managing individuals with ARMS. If the individual participates in LYRIKS, the individual benefits from regular assessments and close monitoring of their mental health state, and with the participants' consent, the GPs are provided additional information from the research team to aid the holistic composition of their management plan.

This collaboration with LYRIKS also serves to keep GPs engaged in meaningful research and provides an opportunity for GPs to contribute towards mental health research involving the Singapore population.

CONCLUSION

The role of GPs in the community cannot be over-emphasized. They form the first layer in the overall healthcare system and look after the health of individuals and their families. It is also precisely the skills that come with this role that makes them well-poised to deliver preventive mental health care. This article has highlighted schizophrenia as an example of how GPs can make a positive impact in the prevention of such a devastating mental illness as well as participate in mental health research.

This win-win collaboration between mental health services and primary healthcare will lead to better integration of our healthcare system with the aim of delivering better healthcare to our patients.

REFERENCES

1. McGrath J, Saha S, Chant D, et al. Schizophrenia: a concise overview of incidence, prevalence, and mortality. *Epidemiol Rev* 2008; 30:67-76.
2. Murray CJL, Lopez AD. *The Global Burden of Disease*. Boston: Harvard University Press, 1996.
3. Chong SA, Lee C, Bird L, et al. A risk reduction approach for schizophrenia: the Early Psychosis Intervention Programme. *Ann Acad Med Singapore* 2004; 33:630-5.
4. Chong SA, Verma S, Lee C. Psychosis - everyone's concern: the Early Psychosis Intervention Programme (EPIP) in Singapore. *The Singapore Family Physician* 2001; 27:49-52.
5. Chong SA, Mythily S, Verma S. Reducing the duration of untreated psychosis and changing help-seeking behaviour in Singapore. *Soc Psychiatry Psychiatr Epidemiol* 2005; 40:619-21.
6. Yung AR, McGorry PD. The initial prodrome in psychosis: descriptive and qualitative aspects. *Aust N Z J Psychiatry* 1996; 30:587-99.
7. Yung AR, Yuen HP, McGorry PD, et al. Mapping the onset of psychosis: the Comprehensive Assessment of At-Risk Mental States. *Aust N Z J Psychiatry* 2005; 39:964-71.
8. Cannon TD, Cadenhead K, Cornblatt B, et al. Prediction of psychosis in youth at high clinical risk: a multisite longitudinal study in North America. *Arch Gen Psychiatry* 2008; 65:28-37.
9. Ruhrmann S, Schultze-Lutter F, Salokangas RK, et al. Prediction of psychosis in adolescents and young adults at high risk: results from the prospective European prediction of psychosis study. *Arch Gen Psychiatry*; 67:241-51.
10. Amminger GP, Schafer MR, Papageorgiou K, et al. Long-chain omega-3 fatty acids for indicated prevention of psychotic disorders: a randomized, placebo-controlled trial. *Arch Gen Psychiatry*; 67:146-54.

LEARNING POINTS

- **The Early Psychosis Intervention Programme (EPIP) has a specific goal of raising awareness of early signs and symptoms of psychosis, reducing stigma associated with psychosis, and establishing a network with primary healthcare providers to facilitate timely review of referrals.**
 - **The EPIP's eventual goal is to improve the outcome of those suffering from psychosis, as well as alleviate potential caregiver burden.**
 - **Patient with ARMS typically are aged 14 to 30, and could experience (a) attenuated psychotic symptoms, (b) a brief limited intermittent psychotic symptoms, or (c) have a first degree family member with psychosis and a drop in recent functioning.**
 - **LYRIKS is an observational study with the objective of identifying risk factors associated with the development of psychosis.**
 - **Through LYRIKS, GPs receive updated knowledge on ARMS and enjoy continuous updates from the research team. Through the training and continued partnership, GPs get equipped with knowledge on ARMS and become more confident in identifying and managing individuals with ARMS.**
-

UNIT NO. 3

PATHOLOGICAL GAMBLING – TREATMENT AND THE ROLE OF THE PRIMARY CARE PHYSICIAN

A/Prof Wong Kim Eng

ABSTRACT

Although awareness of pathological gambling is growing in Singapore, some medical practitioners may not be conversant with the availability of treatment at the National Addictions Management Service (NAMS) and the treatment approaches. Some may not be clear about the diagnosis. This article aims to discuss the above and to stress the important roles that the primary care physician can play in terms of identification of those at risk of developing gambling problems, early identification of the pathological gamblers for referral for early treatment, and implementation of brief intervention for those who are reluctant to seek treatment from the addiction specialists.

KEYWORDS: pathological gambling, national addictions management service, brief intervention, primary care physician's role.

SFP2010; 36(4): 15-18

INTRODUCTION

Gambling is a common activity throughout the world. For the majority, gambling is a pleasurable social activity conducted among friends and relatives. For a small number, however, it becomes a serious problem that adversely affects the gambler and all aspects of his life, in particular his family, job, interpersonal relationships and mental health. Such people often labour under the misconception that they can 'beat the system' one day and win big; they do not realize that gambling is an activity where the outcome is unpredictable and based on chance. Prior to the establishment of the 2 casinos in Singapore, 2 prevalence surveys on problem gambling were conducted by the Ministry of Community Development (MCYS) in 2005¹ and 2008²; the latter showed that 1.7% of those surveyed had probable problem gambling while 1.2% had probable pathological gambling. Many in Singapore were concerned that the number would grow with the presence of the 2 local casinos. To its credit, the government took pre-emptive steps to prevent the problem with the establishment

of the National Council on Problem Gambling (NCPG) and the Casino Control Act which empowers the NCPG to issue 3 types of Casino Exclusion Orders (self, family and third party exclusion) to individuals³. At the same time, treatment of pathological gambling was made available in a 3-tier framework that involves community agencies like the family service centres in tier 1, the Tanjong Pagar Family Service Centre in tier 2, and NAMS in tier 3. At tier 3, NAMS is responsible for the treatment of the more severely afflicted pathological gambler.

NATIONAL ADDICTIONS MANAGEMENT SERVICE (NAMS)

Located at the Institute of Mental Health at Buangkok Green Medical Park, NAMS is dedicated to the management of all addictions, of which the principal ones are drugs, alcohol and gambling. Service is delivered by a multi-disciplinary team of addiction counsellors, psychologists, social workers, family therapists, nurses and addiction psychiatrists. Treatment is predominantly outpatient for behavioural addictions like pathological gambling, while a 24-bedded ward for detoxification and rehabilitation is available for the inpatient treatment of the chemical addictions.

NAMS had its beginnings in the dedicated Alcohol Treatment Centre (ATC) of the old Woodbridge Hospital (WH), which was subsequently replaced by the Community Addictions Management Programme (CAMP) in 2001, funded by the MOH Health Service Development Programme. In a timely move, CAMP evolved into NAMS in 2008, funded by the MOH Re-investment Fund, to take charge of all the addictions including pathological gambling. All primary care physicians are familiar with drugs and alcohol dependence, but some may not be familiar with pathological gambling, which is to be expected as it was classified as a diagnostic entity in as recently as 1980, in the 3rd edition of the diagnostic and statistical manual of mental disorders (DSM-III).

DIAGNOSIS OF PATHOLOGICAL GAMBLING

Gamblers can be social, at-risk, problem, or pathological. Social gamblers form the majority; they gamble for fun with money they can afford to lose. Pathological gamblers are those who fulfil the A and B criteria as listed in the table below, reproduced from the diagnostic and statistical manual of mental disorders, 4th edition (text revision), DSM-IV-TR (2000):

WONG KIM ENG, Senior Consultant Psychiatrist, Institute of Mental Health, Singapore

A. Persistent and recurrent maladaptive gambling behaviour as indicated by five (or more) of the following:

1. Is preoccupied with gambling
2. Needs to gamble with increasing amounts of money in order to achieve the desired excitement
3. Has repeated unsuccessful efforts to control, cut back, or stop gambling
4. Is restless or irritable when attempting to cut down or stop gambling
5. Gambles as a way of escaping from problems or of relieving a dysphoric mood (e.g. Feelings of helplessness, guilt, anxiety, depression)
6. After losing money gambling, often returns another day to get even ("chasing" one's losses)
7. Lies to family members, therapist, or others to conceal the extent of involvement with gambling
8. Has committed illegal acts such as forgery, fraud, theft, or embezzlement to finance gambling
9. Has jeopardized or lost a significant relationship, job or educational or career opportunity because of gambling
10. Relies on others to provide money to relieve a desperate financial situation caused by gambling

B. The gambling behaviour is not better accounted for by a Manic Episode

(Reproduced from: American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders (4th ed, text rev)*, Washington DC: American Psychiatric Association)

Problem gamblers are those who do not fulfil the threshold 5 criteria above, usually meeting only 3 or 4 of the criteria. At-risk gamblers are those who lie between the social and problem gamblers.

EARLY DETECTION OF PATHOLOGICAL GAMBLING BY THE PRIMARY CARE PHYSICIAN

Survey tools are available for use in the tracking of the prevalence of problem and pathological gambling in population surveys. Most if not all primary care physicians would not have the time to use these tools in their daily practice. The primary care physician would need to have a high index of suspicion when a patient turns up with anxiety and depressive symptoms and appears troubled. Local NAMS data⁴ on 350 pathological gamblers has shown that co-morbid mental health problems was high (28%); 11.7% showed depression, 10% alcohol abuse/dependence, and 15% reported past suicide attempts. Studies done in other jurisdictions have also shown the presence of significant co-morbidity. A recent joint survey in Hong Kong done by the Tung Wah Group of Hospitals, the Department of Applied Social Science of Hong Kong Polytechnic University and the Divisions on Addictions affiliated to Harvard Medical School, reported that 63.7% of the 201 pathological gambling subjects were found to have at least one type of mental disorder⁵.

Researchers are working to come up with a brief questionnaire for use by busy clinicians to detect pathological gambling early. Some risk factors for pathological gambling include impulsivity, alcohol and substance abuse/dependence, attention deficit/hyperactivity disorder, antisocial personality problems, family history of gambling, and starting to gamble at an early age. Warning signs that primary care physicians should look for are preoccupation with gambling, loss of control, increased tolerance as in placing bigger bets and gambling more frequently, withdrawal symptoms (restlessness, irritability) when not gambling, betting more money to chase losses, bailouts by family to help with the finances, lying and involvement in illegal activities to fund the gambling³.

TREATMENT OF PATHOLOGICAL GAMBLING AT NAMS

When referred to NAMS, the patient is assessed by the counsellor followed by the psychiatrist, to engage the patient, establish rapport, diagnose, and map out a treatment plan. The diagnosis is confirmed using the DSM-IV-TR criteria. The treatment plan includes individual counselling using cognitive behavioural therapy based approach, group counselling (psycho-education and support), family education and support, and in certain cases, pharmacological therapy as well. Each patient is assigned a personal counsellor who is also responsible for case management of the patient. Debt issues are addressed and the patient is referred to the Credit Counselling Service, a non-government organization registered with the Commissioner of Charities, if legal debts were involved and negotiations with the financial bodies were needed. Specific psychological and family issues are handled by the psychologist and family therapist who are members of the multidisciplinary team. As the majority of the patients are financially troubled by the time of the referral, the social worker's assistance is crucial.

Pathological gambling is generally accepted as an addictive disorder (although it is currently classified as an Impulse Control Disorder in the DSM), where the pathology is thought to involve various parts of the brain, including the ventromedial prefrontal cortex⁶. Abnormalities in the neurotransmitter systems of serotonin, dopamine, noradrenaline and endorphin have been reported. To date there has been some preliminary research showing the effectiveness of Selective Serotonin Reuptake Inhibitors (e.g. Fluvoxamine), opioid antagonists (eg. Naltrexone), and mood stabilizers (e.g. Lithium), in the treatment of pathological gambling⁷. The American Psychiatric Association is currently working on DSM-V; preliminary indications are that pathological gambling is likely to be subsumed under the 'Addictions and other related disorders' group.

BRIEF INTERVENTION BY THE PRIMARY CARE PHYSICIAN

People with gambling problems are known to be reluctant to seek treatment; 2 national U.S. surveys showed that only 7-12% of those with DSM-IV diagnosis of pathological gambling had either sought treatment or attended Gamblers Anonymous meetings⁸. At the same time, retention in treatment is consistently low in most jurisdictions. Studies have also shown that for those who do not seek treatment, brief intervention in the form of very brief and directive advice is beneficial in reducing gambling. As most pathological gamblers feel stigmatized in seeking treatment from the addiction specialists, the primary care physician is well placed to give out this brief advice to pathological gamblers who shy away from seeking treatment. The brief advice could include the risk factors for development of severe gambling problems, and provide 4 steps to reduce the gambling: limiting the money spent when gambling; reducing the time and days spent gambling; not viewing gambling as a means of making money; spending time on other activities⁹.

GROWING AWARENESS OF THE PROBLEM

IMH started treating pathological gamblers in 2001 under its earlier Community Addictions Management Programme (CAMP). The numbers seen in the initial years were very small. The last 2 years, however, have seen an increase in numbers, due to the growing awareness of the problem. The increased awareness can be attributed to the public education efforts by

NCPG, NAMS, and the other community partners. In addition to public outreach, NAMS is completing its first round of talks to the staff of all the polyclinics.

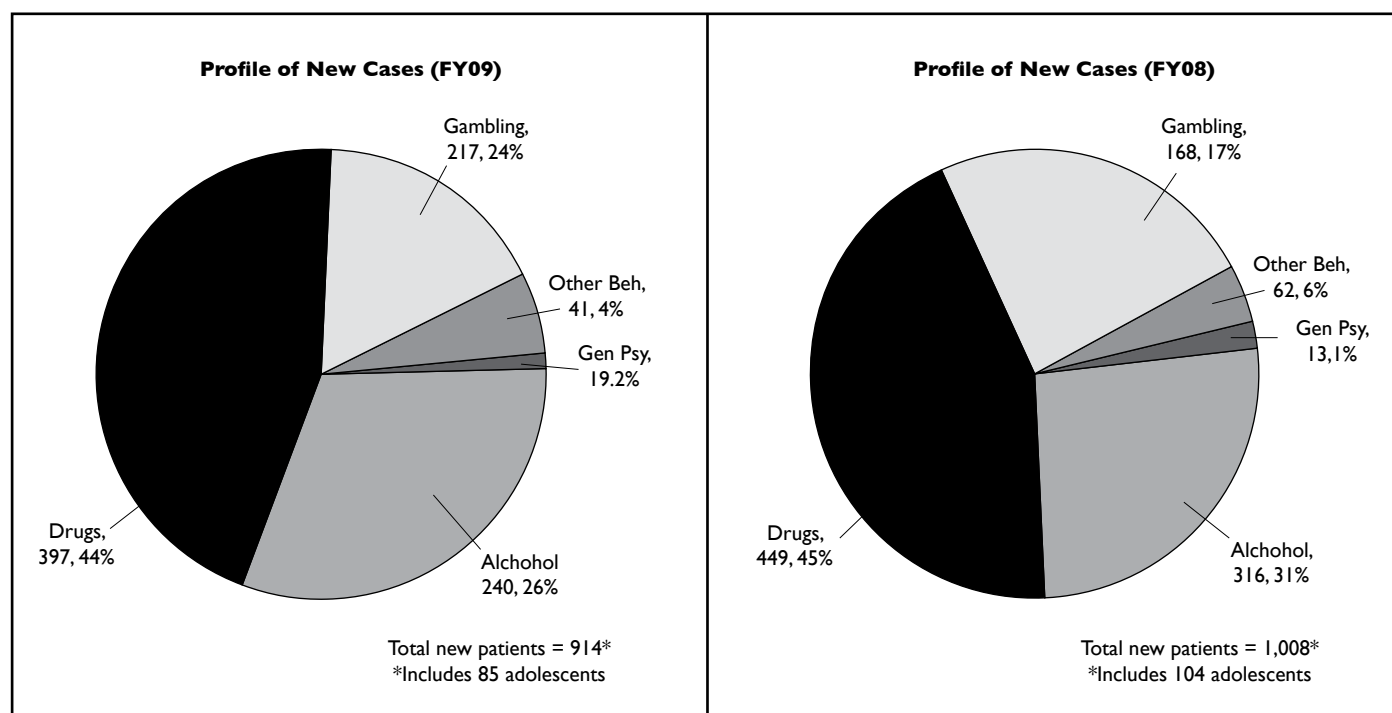
The figure below shows an increase in the number and percentage of new pathological gamblers seen at NAMS in FY 2009 compared to FY 2008; the increase had come about before the opening of the 2 casinos:

The presence of the 2 casinos in Singapore tends to provoke extreme reactions amongst Singaporeans. Those against the presence of casinos predicted that problem gambling will rise. In this respect however, it is worth noting that some 30% of the pathological gamblers seen at NAMS were already frequenting casinos elsewhere prior to the opening of the 2 local casinos.

CONCLUSION

It is premature to conclude whether the 2 casinos will markedly increase the number of pathological gamblers in Singapore. Many forms of gambling are available in Singapore, quite apart from casinos. It is encouraging that more pathological gamblers are emerging to seek treatment as a result of the increased awareness of the condition. The number presently seeking treatment is only the tip of an ice-berg. If only 1% of the adult population had

A Comparison of New Pathological Gambling Cases seen in NAMS in FY09 and FY08



pathological gambling, there should be at least 20,000 to 30,000 pathological gamblers in our midst. The primary care physician has an important role to play in the detection and management of this condition.

REFERENCES

1. Ministry of Community Development, Youth & Sports. (2005, April 13). Report of Survey on Participation in Gambling Activities Among Singapore Residents, 2005.
2. Ministry of Community Development, Youth & Sports. (2008, May 28). Report of Survey on Participation in Gambling Activities Among Singapore Residents, 2008.
3. Wong KE, Anantha S, Lim SA R, Lee KM (2010). Don't gamble your life away! Chapter 2, pp 24. Straits Times Press.
4. Lee KM, Guo S, Manning V, Wong KE, Thane K, Teo P, Yeo W (2009). Demographic and Clinical Features of 350 Pathological Gamblers in Treatment. AAMS, 38 (Suppl) 10, BPAH 47.
5. Martin Wong. Mental Illnesses plague gambling addicts: survey. South China Morning Post 2010, Sep 4.
6. Brewer Judson A, Potenza Marc (2008). The neurobiology and genetics of impulse control disorders: relationships to drug addictions. Biochemical Pharmacology 75 (2008): 63-75.
7. Grant Jon E, Potenza Marc (2004). Pathological Gambling: A clinical guide to treatment. Chapter 13, pp 189-201. American Psychiatric Publishing Inc.
8. Slutske Wendy S (2006). Natural Recovery and Treatment-seeking in Pathological Gambling: Results of two National Surveys. Am J Psychiatry 163:297-302.
9. Petry Nancy M, Weinstock J, Ledgerwood David M, Morasco B (2008). A randomized trial of brief interventions for problem and pathological gamblers. Journal of Consulting and Clinical Psychology 76 (2):318-28.

LEARNING POINTS

- **People with gambling problems are known to be reluctant to seek treatment; 2 national U.S. surveys showed that only 7-12% of those with DSM-IV diagnosis of pathological gambling had either sought treatment or attended Gamblers Anonymous meetings⁸.**
- **As most pathological gamblers feel stigmatized in seeking treatment from the addiction specialists, the primary care physician is well placed to give out this brief advice to pathological gamblers who shy away from seeking treatment.**
- **The brief advice could include the risk factors for development of severe gambling problems, and provide 4 steps to reduce the gambling: limiting the money spent when gambling; reducing the time and days spent gambling; not viewing gambling as a means of making money; spending time on other activities⁹.**
- **When referred to NAMS, the patient is assessed by the counsellor followed by the psychiatrist, to engage the patient, establish rapport, diagnose, and map out a treatment plan.**

UNIT NO. 4

THE SUCCESSFUL COLLABORATION BETWEEN PSYCHIATRISTS, A MENTAL HEALTH INSTITUTION AND GENERAL PRACTITIONERS IN PRIMARY CARE

Dr Lum Wai Mun Alvin, Jace Chew, Dr Lim Boon Leng

ABSTRACT

This paper describes an integrated care programme implemented since 2003 by the Institute of Mental Health (IMH), a tertiary mental health institution in Singapore. The programme is a collaboration between general practitioners (GPs) and IMH, for the detection and management of patients with mental illnesses in the primary care setting. A survey of the GPs and patients in the programme was carried from June to July 2010. The results show satisfaction and good acceptance of the programme.

KEYWORDS: general practice, GP, primary care, mental health

SFP2010; 36(4): 19-21

INTRODUCTION

Mental disorders are increasingly recognised as major health issues burdening a country's health services.¹ It is this burden, both economical and social, that warrants a need to re-look on how mental health services should be delivered. The past model where people with mental illnesses are largely managed by institutions and hospitals places an unbalanced strain on the tertiary health system, when many of these patients who are stable, could have been managed by general practitioners (GPs) in the primary care setting. Compared to specialised care, services provided by GPs for patients with mental illnesses are deemed to be more accessible, convenient, and less costly.² GPs are multi-skilled primary care providers supporting 83% of all primary medical care in Singapore³, and are often the first point of contact for a patient with mental illness.⁴ This places the GPs at a crucial role to be able to detect, treat and/or refer a patient presenting with a mental illness. In fact the ease of access as well as the less stigmatising environment at the primary care level provides for a platform for regular follow-ups and co-management of other physical health conditions.

The focus is now shifting towards integrating mental health into primary care.⁵ Several countries have put in place efforts to implement just this form of integration, with the aim of advancing mental healthcare, improving disease outcome and reducing the burden on mental institutions.

In Singapore, the Institute of Mental Health (IMH) has since 2003 implemented an integrated mental health service with the aim of engaging GPs in the detection and management of mental illnesses.²

THE GENERAL PRACTITIONER (GP) PSYCHIATRIC PROGRAMME

The aim of this programme was to engage the GPs in the management of stable psychiatric patients based on a long-term and sustainable partnership. The skills gained during the programme would allow the GPs to diagnose and detect with greater confidence when their patients present with mental illnesses, and to start management earlier if necessary.

Hence in 2003, GP Psychiatric Programme set about identifying, training and collaborating with a group of GPs who are interested in and willing to manage patients with mental illnesses, and to right-site the care of these patients from the hospital to the community.

A detailed training programme for the GPs was drawn up which allowed the GPs to obtain the skills and knowledge they required. The psychiatrists also had the opportunity to meet the GPs who would subsequently be managing their patients. The GPs were provided with in-depth, comprehensive training on mental illness, which included an induction course followed by regular refresher workshops and dialogue sessions. They attended ward rounds and were attached to specialists' clinics. Lectures which refreshed them on relevant clinical skills like mental state examination, pharmacological treatment of mental illness and management of psychiatric emergencies were conducted. This training not only provided the GPs with the skills necessary to manage the stable patients within the community, but also improved their capability to detect and manage the mentally ill. This early detection and early management of certain mental illnesses is of particular importance.⁶

The initial pilot phase involved 4 participating GPs and this grew to 50 GPs over the years. An open channel of communication and partnership between GPs and psychiatrists is key to the programme.⁷⁻⁸ Of equal importance is the development of the drug delivery system. This involved creating a seamless drug management system that is easy to order and efficient in the delivery of medications. Over and above this, the system has to ensure that the cost of medications to GPs is kept low so that

LUM WAI MUN ALVIN, Resident Physician, Shenton Family Medical Clinic and Liaison GP, Institute of Mental Health, Singapore

JACE CHEW, Liaison Officer, GP Psychiatric Programme, Institute of Mental Health

LIM BOON LENG, Programme Director Mental-Health GP Partnership Programme, Associate Consultant, Department of Community Psychiatry, Institute of Mental Health

the final cost to patients at the GP clinics is kept as close to that at the hospital as possible.

REFERRAL OF STABLE PATIENTS TO GPs

The exclusion criteria are shown in Figure 1. Proper counselling on the referral process is provided to the patients and their family. With the assistance of the counsellor, the patients select the clinic of a participating GP that is most convenient. With the consent of the patients, his or her information and treatment regime are communicated to the chosen GP and an appointment is made.

Figure 1: REFERRAL CRITERIA

■ Inclusion Criteria	
a.	Patients who are stabilised and requiring just maintenance medication, i.e. under the same medications for the past 3 months with preferably minimum or no dosage adjustments
b.	Patients not hospitalised within the past 6 months
c.	Patients who are employed, hence requiring flexibility of timing
d.	Patients who are prepared to pay the slight price difference for continuation of treatment at GPs
■ Exclusion criteria	
Patients with:	
a.	Substance use and/or forensic history
b.	Disruptive personality disorder
c.	Suicide and aggression risk
d.	Clozapine prescription
e.	Formal psychotherapy
f.	Financial assistance

In order to ensure a smooth transition of care for the patient from hospital to community-based treatment, each patient is allocated a specific case liaison officer. The case liaison officer coordinates all aspects of treatment and transfer of care, provides ongoing support to the GPs and acts as a bridge between the GP and the hospital team.

PROGRAMME TO DATE

The programme has successfully partnered 50 GPs and referred 894 patients to their care since the inception of the programme in 2003 (as of July 2010). Since 2007, a total of 7 trainings were conducted for the GPs. The trainings include Introductory Training for recruitment of new GP Partners, as well as Refresher Courses targeted at existing GPs in the programme.

We describe in this paper the findings of a survey of the GPs and patients involved in the programme.

METHODS

Questionnaire design:

1. GP Satisfaction Survey

The GP Satisfaction Survey was designed to gather feedback regarding 5 main aspects of the Programme, namely (1)

Programme Objective (2) Coordination of Care (3) Level of Support of IMH (4) Overall Satisfaction (5) Willingness to Recommend. GPs were asked to rate each component as (a) Strongly Agree, (b) Agree, (c) Neutral, (d) Disagree and (e) Strongly Disagree.

2. Patient Satisfaction Survey

The Patient Satisfaction Survey aimed to survey patients on aspects regarding (1) Knowledge and Skills of GPs (2) Coordination of Care, and (3) Willingness to Recommend. In addition, information on patient's current health state is also collected to provide update of patient's condition after being referred to GPs. Likewise patients were asked to rate each component as (a) Strongly Agree, (b) Agree, (c) Neutral, (d) Disagree and (e) Strongly Disagree.

Sample/Study group:

The GP Satisfaction Survey targeted all current GPs in the Programme, who have joined the Programme for at least 1 year. A total of 40 GPs were being surveyed.

The Patient Satisfaction Survey aimed to survey patients referred out from the Programme for at least 1 year (i.e. 2005 – June 2010). A total of 622 patients were being surveyed.

Survey:

The GP Satisfaction Survey was carried out via email. It is followed-up by phone-call if no reply is received within a week.

The Patient Satisfaction Survey was conducted via phone as well.

RESULTS

A total of 83 (13.3%) patients and 26 (65%) GPs returned the survey forms.

Patient Satisfaction Survey

Patients' view on Programme coordination of Care

The coordination of care was generally acceptable to the patients, with 97.6-98.8% of respondents not having experienced any problems. This included both the coordination of the initial referral to the GPs as well as referral back to the hospital should a need arise.

Patients' perception of GP's knowledge and skill

General satisfaction was between 94-98.8% in this category which includes doctor-patient communication, doctor's skill, care and knowledge.

Willingness to recommend

At least half (57.8%) of respondents are willing to recommend the GP they are on follow-up with for similar conditions, as opposed to 4.8% who were not willing to.

GP Satisfaction Survey

There was overall satisfaction (81-100%) with the programme, ranging from the profile of patients referred, coordination of patient referral, training programme, and drug procurement. There was a GP (4%) who had trouble with the accessibility of assistance from the hospital as well as improving his ability to care for his patient. However, he did get overall satisfaction in eventually getting support to overcome his difficulties.

More than two thirds (69%) of the GP respondents agreed, with none disagreeing, that they will recommend this programme to their GP colleagues.

DISCUSSION

Despite the general satisfaction by the patients on the coordination of care, there can be further improvement. Evaluation on the problems faced by the patients needs to be carried out, determining where in the process of coordination need improvement, be it the initial referral or the process of being referred back to the hospital.

It is heartening to see that patients do not have an issue with the competence of the GPs who had completed training under the programme.

The reasons behind why patients are not willing to recommend the GP they are consulting with needs to be explored. The disparity between the satisfaction levels and their willingness to recommend may be due to the fact that they are not willing to let others know they are on follow-up for mental illnesses.

Likewise, encouraging signs can be seen from the responses of the GPs. There was overall satisfaction with the programme. However, there were signs that more attention may have to be made to the support for the GPs in the area of providing updates, and professional support by psychiatrists and liaison coordinators.

The positive factor that with more than two thirds of the GP respondents agreeing, and none disagreeing, to recommend this programme to their fellow GPs, the programme can strengthen its partnership with more GPs in future.

CONCLUSION

The GP Psychiatric Programme has successfully partnered 50 GPs and referred 894 patients to these partners. Although there is general satisfaction with the programme, further improvements can be made, especially to the coordination of care to the patients and professional support to the GPs.

In light of the survey, the programme has launched several new initiatives such as GP clinic visits to update GPs, streamlining the referral processes and increased GP training activities. It is hoped that will further enhancements, the programme will continue to provide patients with a successful mental health service in the primary care setting.

REFERENCES

1. Investing in Mental Health. Department of Mental Health and substance Dependence, Noncommunicable Diseases and Mental Health. Geneva, Switzerland. World Health Organisation, 2003.
2. Lum WMA, Kwok KW, Chong SA. Providing integrated mental health services in the Singapore primary care setting – the general practitioner psychiatric programme experience. *Ann Acad Med Singapore*. 2008;37(2):128-31.
3. Emmanuel SC, Phua HP, Cheong PY. 2001 survey on primary medical care in Singapore. *Singapore Med J* 2004;45:199-213.
4. Ng TP, Fones CS, Kua EH. Preference, need and utilization of mental health services, Singapore National Mental Health Survey. *Aust N Z J Psychiatry* 2003;37:613-9.
5. WHO/Wonca: Joint report: Integrating mental health into primary care – a global perspective. Geneva, Switzerland: WHO publication data; 2008.
6. Chong SA, Mythily, Lum A, Chan YH, McGorry P. Determinants of duration of untreated psychosis and the pathway to care in Singapore. *Int J Soc Psychiatry*. 2005 Mar;51(1):55-62.
7. Warner RW, Gater R, Jackson MG, Goldberg DP. Effects of a community mental health service on the practice and attitudes of general practitioners. *Br J Gen Pract* 1993 Dec;43(377):507-11.
8. Kendrick T, Sibbald B, Burns T, Freeling P. Role of general practitioners in care of long term mentally ill patients. *BMJ*. 1991 Mar;302(6775):508-10.

LEARNING POINTS

- **The GP Psychiatric Programme is a collaboration between general practitioners (GPs) and IMH, for the detection and management of patients with mental illnesses in the primary care setting.**
 - **This programme has successfully partnered 50 GPs and referred 894 patients to the GP partners.**
 - **It is hoped that will further enhancements, the programme will continue to provide patients with a successful mental health service in the primary care setting.**
 - **A survey of the GPs and patients in the programme was carried from June to July 2010. The results show satisfaction and good acceptance of the programme.**
-

UNIT NO. 5

MANAGING PATIENTS WITH MENTAL ILLNESS IN PRIMARY CARE: APPREHENSIONS AND VIEWS OF GENERAL PRACTITIONERS

Janhavi Ajit Vaingankar, Fong Chee Weng, A/Prof Kwok Kian Woon, A/Prof Lee Kheng Hock,
Dr Lum Wai Mun Alvin, Mei Yen Phua, A/Prof Chong Siow Ann

ABSTRACT

This study aims to examine the views and perceived limitations on the management of patients with mental illness in the community in a representative sample of general practitioners (GPs) illness. A postal survey was conducted among a random sample of 768 GP clinics in Singapore which yielded a response rate of 62%. About 68% of the respondent GPs indicated that they were managing mentally ill patients at the time of the survey, and anxiety and stress disorders were the most common mental conditions encountered by the GPs in their clinics. Over 90% of the GPs who were managing patients with mental illness felt that these patients were more comfortable receiving treatment from them than from a psychiatrist because of their confidence and familiarity with the GPs who provide accessible, affordable and less stigmatizing care. Serious mental illness like schizophrenia and addictions were regarded as the most difficult psychiatric conditions to manage in a GP setting. Lack of adequate time and support from ancillary healthcare professionals, and need for training in the special medical needs of patients with more serious mental illness were perceived as key challenges in managing patients with mental illness in general practice.

KEYWORDS: General practice, limitations, mental illness, primary care

SFP2010; 36(4): 22-25

JANHABI AJIT VAINGANKAR, Assistant Manager, Research Division, Institute of Mental Health

FONG CHEE WENG, Deputy Principal Biostatistician, Epidemiology & Disease Control Division, Ministry of Health

KWOK KIAN WOON, School of Humanities and Social Sciences, Nanyang Technological University

LUM WAI MUN ALVIN, Resident Physician, Shenton Family Medical Clinic and Liaison GP, Institute of Mental Health

MEI YEN PHUA, Research Officer, Research Division, Institute of Mental Health

CHONG SIOW ANN, Vice Chairman, Medical Board (Research), Institute of Mental Health

INTRODUCTION

Mental disorders are pervasive throughout the world¹. The ensuing morbidity, need for long term care and increased healthcare utilization pose a significant challenge to healthcare systems across the world and exert considerable social burden. With the advancement in knowledge about mental illness, the treatment options and interventions have expanded and so has the focus on deinstitutionalization of services for people with mental illness^{2,3}. Rehabilitation and reintegration of patients to the community has been associated with improved outcomes⁴. As a result, the healthcare clinical and policy context for people with mental illness is changing; there is an increased emphasis on access to care and patients' choice⁵. There has also been a growing recognition of the role of primary care practitioners in management of patients with mental illness given their strategic position in the community which promotes available, accessible, and often less stigmatizing treatment⁶. In a number of countries, there have been concerted efforts towards integrating mental healthcare in primary care with the objective of improving patient outcomes and alleviating the burden on tertiary healthcare systems.

In Singapore, a primary care medical practitioner, commonly known as a general practitioner (GP) is usually a family doctor who is in private practice. GPs constitute an important segment of the multi-skilled primary healthcare workforce that caters to over 80% of all primary medical care in Singapore⁷. Colloquially, in Singapore, a GP Psychiatric Programme was initiated in 2003 with the aim of engaging GPs in the management of stable psychiatric patients in Singapore. The five-year National Mental Health Policy and Blueprint, launched in 2007, aimed at improving the overall mental health of the nation, and among its various initiatives, is the wider engagement of the primary healthcare sector particularly the GPs. The GP Psychiatric Programme has expanded to engage and enlist more GPs, and to "right-site" the care to the community. Critical to the process of developing and implementing further programmes and policies is to obtain information on the current clinical practice, experiences and views of GPs in providing mental healthcare in private practice.

Unfortunately, there is a paucity of such information in the local context and there is no known published information on a national scale. This study was done to address the critical lack of information on the views and apprehensions of GPs in Singapore who are providing healthcare to patients with mental illness in the community setting as well as to assess their interest in attending a training program in psychiatry for GPs.

METHODS

Questionnaire design:

Two focus group discussions were conducted with 16 practicing GPs to ascertain their views on managing patients with mental illness in GP clinics. GPs who participated in the focus group discussions had varying durations of service in general practice and belonged to different age, gender and ethnic groups. This ensured representativeness and collection of rich qualitative information. They were also asked for the difficulties (real and perceived) in managing people with mental illness in their practice. Information collected was reviewed by an expert panel of researchers comprising a psychiatrist, GP, policy maker, sociologist and a survey expert as part of the process in developing a self administered questionnaire for the survey. The questionnaire was pilot-tested on 8 GPs and appropriate revisions were made before the survey.

Sample:

The proportion of GPs interested in training program in psychiatry was assumed to be 20%. The required sample sizes were computed for response rates varying from 50%, 60%, 70%, 80% and 90% with 2% to 5% absolute point precision levels at 95% confidence level. It was anticipated that the response rate would be 50% for the survey and a sample size of 768 was chosen as the number of clinics to be selected for the survey to give a precision of 4% and 95% confidence interval. A list of all GP clinics in Singapore along with their telephone numbers and/or email address was obtained from the Ministry of Health and this served as the sampling frame for the simple random selection of clinics. All GPs in the selected clinics were invited to participate in the study.

Survey Fieldwork:

The survey was conducted over three months between July and September 2007. The questionnaires were mailed in a single wave to the selected clinics in July 2007 along with an invitation letter that explained the purpose, importance and requirements of the survey. GPs were informed to leave the completed questionnaires in with their clinic assistants which were then collected by the research assistants engaged for the study. The anonymous and voluntary nature of the survey was emphasized in the letter, although the GPs were given an option to provide their personal details for future contact. A telephone line was set up to address queries, to make follow-up and reminder calls, and to make arrangements for collection of the survey forms. Information from completed questionnaires was entered in a dataset after ensuring that the personal details provided by GPs were delinked from their responses. Quality of data entry was ensured through 20% double data entry with acceptable error rate of 2%.

Statistical analysis:

Data was analysed using Statistical Package for Social Sciences (SPSS, Chicago IL, USA) version 16.0. Descriptive statistics and frequency distribution were computed for responses to the questionnaire items.

RESULTS

90 clinics out of the 768 selected clinics were found to be specialist clinics upon further contact during fieldwork and excluded from the analysis. Of the remaining 678 clinics, GPs from 477 clinics completed the survey, giving a response rate of 70.4%. The overall response rate was therefore 62.1%. A total of 543 GPs responded from the 477 clinics.

The socio-demographic characteristics of the 543 respondent GPs are presented in Table I. There are predominantly more male GPs (7 males to 3 females), and the mean age of respondents was 47.8 years, and the mean duration of private practice was 18.3 years.

68.6% (n= 372) of the GPs were managing people with mental illness at the time of the survey. The GPs were seeing an average of 6 patients with mental disorders per week which constituted only 4.5% of the total number of patients seen by them per week. Anxiety and stress disorders were the most common types of mental illness encountered by the GPs (Table II).

Among the GPs who were managing people with mental illness, the vast majority (90.7%, n=332) perceived that the patients were more comfortable receiving treatment from them than from a psychiatrist. Most of these GPs (79.8%, n= 297) attributed this to the sense of familiarity that patients have with them. Other reasons are listed in order of frequency in Table III.

Table I: Socio-demographic characteristics of GPs (n= 543)

Mean (SD)	Range	
Age (years)	47.8 (10.6)	26 – 84
Number of years in general practice	18.3 (10.4)	1 – 49
Number of years since graduation	23.2 (10.4)	0 – 55
Variables		% (n)
Gender	Men	70.7 (383)
	Women	29.3 (159)
Ethnic group	Chinese	92.6 (502)
	Malay	1.8 (10)
	Indian	4.1 (22)
	Others	1.5 (8)
Education	MBBS	88.1 (475)
	MBBS + MMed	7.4 (40)
	MBBS + Diploma	2.8 (15)
	Others	1.7 (9)

Table II: Types of mental illness encountered by GPs who were managing mentally ill patients

	% (n)
Anxiety/ Stress Disorders	96.8 (360)
Sleep Disorders	91.7 (341)
Depressive Disorders	77.2 (287)
Mental illness in the Elderly	46.8 (174)
Addiction Disorders	28.5 (106)
Schizophrenia (and related psychosis)	20.7 (77)
Mental illness in Children & Adolescents	18.3 (68)
Eating Disorders	16.4 (61)

Table III: GPs' perceptions on reasons why patients with mental illness preferred seeing them

	% (n)
Patients' familiarity with GP	79.8 (297)
Patients' willingness to confide in GP	44.6 (166)
GPs' familiarity with patients' history	40.6 (151)
Stigma associated with visiting psychiatrist	39.2 (146)
Reasonable consultation fee	20.7 (77)
Patients' confidence in GP's knowledge and experience	20.7 (76)
Convenient location of GP clinic	18.8 (70)
Holistic care from GP	15.3 (57)
Flexible / extended hours of GP consultation	7.5 (28)
Other reasons (past experiences of patients, etc)	0.8 (3)

All GPs - those who were treating patients with mental illness and those who were not - were asked to list the mental disorders that they would be most uncomfortable to manage. Addiction disorders and schizophrenia and related psychoses were deemed to be the most challenging conditions (Table IV). The real and perceived challenges perceived by the GPs in managing patients with mental illness in a GP clinic setting are listed in Table V. Extended consulting hours, the absence of psychotropic medication, and perceived need for additional knowledge in managing such patients were the most common cited difficulties in the management of mentally ill individuals.

DISCUSSION

The present study was carried out in order to provide an understanding of how GPs perceive managing patients with mental illness in their practice. A secondary objective was to get an insight into GPs' perceptions of their own needs

Table IV: Mental illness that GPs find difficult / uncomfortable to manage

	% (n)
Schizophrenia (and related psychosis)	66.3 (360)
Addiction Disorders	64.6 (351)
Mental illness in Children & Adolescents	48.6 (264)
Sleep Disorders	29.5 (160)
Eating Disorders	27.6 (150)
Mental illness in the Elderly	25.2 (137)
Depressive Disorders	21.4 (116)
Anxiety/ Stress Disorders	11.1 (60)

Table V: GPs' perceived difficulties in managing patients with mental illness

	% (n)
Patients with mental illness tend to require more consultation time	72.6 (394)
I do not stock the appropriate medication in the clinic	75.0 (407)
More knowledge is required to manage such patients	65.0 (353)
Lack of support services available for me to manage them	60.6 (329)
I am not comfortable prescribing psychotropic medication	52.9 (287)
They may be violent in their behaviour	41.1 (223)
Low compliance to medications	27.1 (147)
Negative perceptions of other patients, who may avoid my clinic	23.9 (130)
Lack of financial incentive	18.8 (102)
Other reasons	5.7 (31)

while working with these people. The survey questionnaire was developed through qualitative methods which ensured minimum response errors and effective data collection. We achieved a response rate of 62% that fulfilled the statistical requirements and increased generalizability of the findings.

To our knowledge, there have not been any published local findings on the views of GPs in providing mental healthcare in their practice. Literature elsewhere suggests that GPs are willing to take responsibility for physical healthcare⁸ but less so for those with mental illness, particularly those suffering from serious illness^{9,10}. Similar findings were found in this study, with over 65% of GPs surveyed indicating schizophrenia (and associated psychosis) as the more difficult illness to treat in GP clinic setting. Anxiety and sleep disorders were the most frequent illness encountered by GPs in Singapore and these findings are similar to those reported in other countries^{11,12}. Patients' preference of healthcare providers, physicians' confidence and expertise in treating mild mental illness and affordable cost of providing care have been reported as the

factors contributing to the predominance of these disorders found in primary healthcare.

In this study, 65% of the responding GPs expressed a need for more knowledge on managing patients with mental illness, particularly those with more serious conditions such as schizophrenia. This self assessment of the training needs of GPs is crucial to the expansion of mental health services in the community and provision of optimum care to patients. Certain differences in diagnostic accuracy for depression and schizophrenia were observed between psychiatrists and primary health professionals in an earlier study in Singapore¹³ and elsewhere¹⁴ which highlight the importance of further training in any initiative to engage GPs in the care of those with mental illness in the community.

A limitation of the study is that it was based on self-report and thus a social desirability bias cannot be ruled out especially when considering attitudes and perceptions. Notwithstanding this limitation, this study is the first nation-wide survey on a representative sample of practicing GPs in Singapore with a respectable 62% response rate that provide important information on the views of the GPs, an insight into their perceived challenges and needs and an assessment of their interest in improving their management of mentally ill patients.

CONCLUSION

The National Mental Blueprint and Policy recognizes the crucial role that GPs could play in the overall care of those with mental illness. However, certain perceptions and challenges remain and may deter GPs from enlisting in the integrated care model – the proportion of people with mental illness that are being attended to by GPs constitutes a relatively small percentage of their practice. Addressing the training and practice needs (such as providing ancillary support) of GPs is crucial.

ACKNOWLEDGEMENT

This study was supported by a funding from the Ministry of Health, Singapore.

REFERENCES

1. Mental Health: new understanding, new hope. The World Health Report. Geneva. World Health Organization 2001.
2. US Department of Health and Human Services. Mental Health: A Report of the Surgeon General. Rockville, MD: US Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health, 1999; p. 13-20.
3. Goldman HH, Adams NH, Taube CA. Deinstitutionalization: the data demythologized. *Hosp Com Psychiatry*. 1983; 34:124-9.
4. Niazi A, Kelly BD, McEntee K, McDonough C. Community rehabilitation for severe enduring mental illness: a naturalistic, observational study. *Ir J Med Sci*. 2007; 176:325-6.
5. Brousselle A, Lamothe L, Sylvain C, Foro A, Perreault M. Integrating services for patients with mental and substance use disorders: What matters? *Healthcare Manage Rev*. 2010 ;35:212-23.
6. http://www.who.int/mental_health/policy/services/3_MHintoPHC_Infosheet.pdf
7. Lum AW, Kwok KW, Chong SA, et al. Providing integrated mental health services in the Singapore primary care setting--the general practitioner psychiatric programme experience. *Ann Acad Med Singapore*. 2008;37:128-31.
8. Kendrick T, Sibbald B, Burns T, Freeling P. Role of general practitioners in care of the long term mentally ill patients. *Br Med J* 1991;302:508-10.
9. Rogers A, May C, Oliver D. Experiencing depression, experiencing the depressed: the separate worlds of patients and doctors. *J Mental Health* 2001;10:317-33.
10. Burns T, Greenwood N, Kendrick T, Garland C. Attitudes of general practitioners and community mental health team staff towards the locus of care for people with chronic psychotic disorders. *Primary Care Psychiatry* 2000;6:67-71.
11. King M, Nazareth I, Levy G, et al. Prevalence of common mental disorders in general practice attendees across Europe. *Br J Psychiatry*. 2008;192:362-7.
12. Comparelli A, Lazanio S, Tatarelli R. Psychiatric disorders and their management in general practice. *Psychiatr Serv* 2001; 52:388-9.
13. Chen H, Parker G, Kua J, et al. Mental health literacy in Singapore: a comparative survey of psychiatrists and primary health professionals. *Ann Acad Med Singapore*. 2000;29:467-73.
14. Olsson I, Mykletun A, Dahl AA. General practitioners' self-perceived ability to recognize severity of common mental disorders: an underestimation factor in case identification? *Clin Pract Epidemiol Mental Health* 2006; 2: 1-9.

LEARNING POINTS

- **A postal survey was conducted among a random sample of 768 GP clinics in Singapore and the response rate was 62%.**
- **Anxiety and stress disorders were the most common mental conditions encountered by the GPs in their clinics.**
- **Serious mental illness like schizophrenia and addictions were regarded as the most difficult psychiatric conditions to manage in a GP setting.**
- **Lack of adequate time and support from ancillary healthcare professionals, and need for training in the special medical needs of patients with more serious mental illness were perceived as key challenges in managing patients with mental illness in general practice.**

UNIT NO. 6

MENTAL HEALTH CURRICULUM

A/Prof Goh Lee Gan

ABSTRACT

There is a worldwide recognition that mental health well being is important. Also, primary care doctors and psychiatrists need a mindset change to develop a new health care system where primary care doctors can play a bigger role in delivering this care. WHO has developed the Mental Health Gap Action Programme to upscale the capacity of primary care doctors. The mhGAP-Intervention Guide provides guidance on evidence-based interventions to identify and manage a number of priority conditions. The priority conditions included are depression, psychosis, bipolar disorders, epilepsy, developmental and behavioural disorders in children and adolescents, dementia, alcohol use disorders, drug use disorders, self-harm / suicide and other significant emotional or medically unexplained complaints. These priority conditions were selected because they represent a large burden in terms of mortality, morbidity or disability, have high economic costs, and are associated with violations of human rights. These 11 mhGAP-IG topics are already included in the GDFM/MMed (Family Medicine) modular course and in the Graduate Diploma in Mental Health. Aligning the content of these topics in the notes and mhGAP-IG will be useful.

SFP2010; 36(4): 26-28

INTRODUCTION

There is a worldwide recognition that mental health well being is important. Also, primary care doctors and psychiatrists need a mindset change to develop a new health care system where primary care doctors can play a bigger role in delivering this care.

As has been pointed out by Margaret Chan in the foreword of the Mental Health Gap Action Programme Intervention Guide published in 2010 (WHO, 2010): "There is a widely shared but mistaken idea that all mental health interventions are sophisticated and can only be delivered by highly specialized staff. Research in recent years has demonstrated the feasibility of delivery of pharmacological and psychosocial interventions in non-specialized health-care settings."

"The reality is that most of the mental, neurological and substance use conditions that result in high morbidity and mortality can be managed by non-specialist health care providers. What is required is increasing the capacity of the primary care system for delivery of an integrated package of care by training, support and supervision."

MENTAL HEALTH GAP ACTION PROGRAMME (mhGAP)

Based on this worldview, WHO has since 2008 developed the Mental Health Gap Action Programme (mhGAP) aimed at upscaling the capacity of primary care doctors to play a bigger role. The vision of this programme was the contribution of three WHO senior officers: Ala Alwan, Assistant Director-General, Noncommunicable Diseases and Mental Health, WHO; Benedetto Saraceno, former Director, Department of Mental Health and Substance Abuse, WHO; Shekhar Saxena, Director, Department of Mental Health and Substance Abuse, WHO working with WHO country officers and a panel of international experts.

MENTAL HEALTH GAP ACTION PROGRAMME INTERVENTION GUIDE (mhGAP-IG)

Supporting this mhGAP is a set of guidelines out of which is a intervention guide (mhGAP-IG). This intervention guide has been developed through an intensive process of evidence review. Systematic reviews were conducted to develop evidence-based recommendations.

The process involved a WHO Guideline Development Group of international experts, who collaborated closely with the WHO Secretariat. The recommendations were then converted into clearly presented stepwise interventions, again with the collaboration of an international group of experts. The mhGAP-IG was then circulated among a wider range of reviewers across the world to include all the diverse contributions. The mhGAP-IG is based on the mhGAP Guidelines on interventions for mental, neurological and substance use disorders (http://www.who.int/mental_health/mhgap/evidence/en/). The mhGAP Guidelines and the mhGAP-IG will be reviewed and updated in 5 years. Any revision and update before that will be made to the online version of the document.

The mhGAP-IG includes guidance on evidence-based interventions to identify and manage a number of priority conditions. The priority conditions included are depression, psychosis, bipolar disorders, epilepsy, developmental and behavioural disorders in children and adolescents, dementia, alcohol use disorders, drug use disorders, self-harm / suicide and other significant emotional or medically unexplained

GOH LEE GAN, Associate Professor, Head, Division of Family Medicine, University Medicine Cluster, National University Health System
Senior Consultant, Institute of Family Medicine, College of Family Physicians Singapore

complaints. These priority conditions were selected because they represent a large burden in terms of mortality, morbidity or disability, have high economic costs, and are associated with violations of human rights.

PURPOSE OF THE MHGAP INTERVENTION GUIDE

The mhGAP-IG has been developed for use in non-specialized health-care settings. It is aimed at health-care providers working at first- and second-level facilities. These health-care providers may be working in a health centre or as part of the clinical team at a district-level hospital or clinic. They include general physicians, family physicians, nurses and clinical officers. Other non-specialist health-care providers can use the mhGAP-IG with necessary adaptation. The first-level facilities include the health-care centres that serve as first point of contact with a health professional and provide outpatient medical and nursing care. Services are provided by general practitioners or physicians, dentists, clinical officers, community nurses, pharmacists and midwives, among others. Second-level facilities include the hospital at the first referral level responsible for a district or a defined geographical area containing a defined population and governed by a politico-administrative organization, such as a district health management team. The district clinician or mental health specialist supports the first level health-care team for mentoring and referral.

The mhGAP-IG is brief so as to facilitate interventions by busy non-specialists in low- and middle-income countries. It describes in detail what to do but does not go into descriptions of how to do. It is important that the non-specialist health-care providers are trained and then supervised and supported in using the mhGAP-IG in assessing and managing people with mental, neurological and substance use disorders.

MENTAL CURRICULUM IN SINGAPORE

Strategically, there is a progression of psychiatry training – UG posting, GDFM for all Primary Care Doctors, and GDMH for GPs with special interest in Psychiatry (GPSIs).

There are thus two medical courses on mental health for the primary care doctor – the Family Medicine Modular Course in the MMed(Family Medicine Programmes which started in 1993 and in the Graduate Diploma in Family Medicine (GDFM) which started in 2000. For those who wish to pursue a more in-depth GP special interest course in mental health there is the GDIM programme which was launched earlier this year.

Many of the topics identified in the mhGAP-IG are covered both the Family Medicine modular course in the MMed (Family Medicine) programme. See Table 1 which shows the conditions covered. Certainly the mhGAP-IG topics can be used to align the approach to key mental health topics.

GDFM/MMed(Family Medicine) Modular Course

We have 4 study units of psychiatry in the Grad Dip Family Medicine (GDFM) which is a 2 year course of 64 units. The topics covered are:

- Unit 421 -- Psychiatric assessment, Anxiety disorders, Stress & PTSD
- Unit 422 -- Personality disorders, Abnormal illness behaviour (Somatisation)
- Unit 423 -- Schizophrenia, Psychiatry in old age
- Unit 424 -- Mood disorders, Suicide, Grief, Addiction

In addition there is a study unit on Developmental Disorders in Childhood (Unit 213) and a study unit in Behavioural disorders in Childhood (Unit 214). There is also a study unit on psychogeriatrics in the modular course.

The focus of these study units in the GDFM/MMed Modular Course are – knowledge (distance learning); application & problem solving (face-to-face workshop case studies).

Table 1. Modules in the WHO mhGAP Intervention Guide

I.	Introduction
II.	General Principles of Care
III.	Master Chart
IV.	Modules
1.	Moderate-Severe Depression
2.	Psychosis
3.	Bipolar Disorder
4.	Epilepsy / Seizures
5.	Developmental Disorders
6.	Behavioural Disorders
7.	Dementia
8.	Alcohol Use and Alcohol Use Disorders
9.	Drug Use and Drug Use Disorders
10.	Self-harm / Suicide
11.	Other Significant Emotional or Medically Unexplained Complaints
V.	Advanced Psychosocial Interventions 82

Graduate Diploma in Mental Health

The Graduate Diploma in Mental Health consists of six 10-hour modules (taught by psychiatrists):

- Introduction to Psychiatry
- Psychosis
- Mood / Anxiety / Grief disorders
- Addiction / Personality Disorders
- Child and Adolescent Mental Health including Learning Disabilities
- Psychogeriatrics

It is jointly offered by the Institute of Mental Health (IMH) and the Division of Graduate Medical Studies, National University of Singapore (NUS), the one- year course provide a comprehensive and structured training programme for GPs in psychiatry and counseling by training them appropriately and adequately for the role of providing mental health services to the community.

CONCLUSIONS

There is a need to upscale the capacity of primary care doctors in mental health care. The Mental Health Gap Action Programme and Intervention Guide cover 11 key topics to upscale the primary care doctors' capability. These mhGAP-IG topics are already included in the GDFM/MMed (Family Medicine) modular course and in the Graduate Diploma in Mental Health. Aligning the content of these topics in the notes and mhGAP-IG will be useful.

REFERENCES

World Health Organisation. Mental Health Gap Programme – Intervention Guide. Geneva:WHO, 2010.

LEARNING POINTS

- **There is a need to upscale the capacity of primary care doctors in mental health care.**
 - **The Mental Health Gap Action Programme and Intervention Guide cover 11 key topics to upscale the primary care doctors' capability.**
 - **These mhGAP-IG topics are already included in the GDFM/MMed (Family Medicine) modular course and in the Graduate Diploma in Mental Health. Aligning the content of these topics in the notes and mhGAP-IG will be useful.**
-

ASSESSMENT OF 30 MCQs

FPSC NO : 37 MCQs on Primary Care Mental Health Submission DEADLINE : 1 MARCH 2011

INSTRUCTIONS

- With effect from 1st April 2008, the College Assessment of 30 MCQs has gone paperless.
- To submit answers to the following multiple choice questions, you are required to log on to the College Online Portal (www.cfps2online.org)
- Attempt ALL the following multiple choice questions.
- There is only ONE correct answer for each question.
- The answers should be submitted to the College of Family Physicians Singapore via the College Online Portal before the submission deadline stated above.

- | | |
|---|--|
| <p>1. In the WHO publication Promoting Mental Health: Concepts, Evidence, and Practice, a positive description of mental health is given. What of the following is in the description?</p> <p>(A) The individual is resilient.</p> <p>(B) The individual realizes his or her own abilities.</p> <p>(C) The individual meditates to cope with normal stresses of life.</p> <p>(D) The individual looks after his family.</p> <p>(E) The individual must contribute to his or her community.</p> | <p>4. One of the key messages in the WHO publication on Promoting Mental Health states that basic individual rights are needed to maintain a high level of mental health. What in particular is provided by these rights to maintain mental health?</p> <p>(A) Security and freedom.</p> <p>(B) Freedom of speech.</p> <p>(C) Protection.</p> <p>(D) Social welfare if unable to work.</p> <p>(E) Treatment of medical illness if unable to afford.</p> |
| <p>2. In the WHO publication Promoting Mental Health: Concepts, Evidence, and Practice, X key messages were given. What is X?</p> <p>(A) 5.</p> <p>(B) 6.</p> <p>(C) 7.</p> <p>(D) 8.</p> <p>(E) 9.</p> | <p>5. Research has shown that mental health can be affected by non-health policies and practices. Which of the following is an appropriate example given in one of key messages in the WHO publication on Promoting mental health?</p> <p>(A) Urban renewal.</p> <p>(B) Cheap housing.</p> <p>(C) Education and child care.</p> <p>(D) Prevention services.</p> <p>(E) Medico-legal aid.</p> |
| <p>3. In the WHO publication Promoting Mental Health: Concepts, Evidence, and Practice, in one of the key messages it is mentioned that mental health is everybody's business. Which of the following is NOT specifically included as the "everybody"?</p> <p>(A) Individuals.</p> <p>(B) Policy makers.</p> <p>(C) Media.</p> <p>(D) Commercial organisations.</p> <p>(E) Health professionals.</p> | <p>6. Schizophrenia is a serious mental illness with a lifetime prevalence of X percent. What is X?</p> <p>(A) 0.1.</p> <p>(B) 0.7.</p> <p>(C) 3.5.</p> <p>(D) 5.0.</p> <p>(E) 10.5.</p> |

- 7. Which of the following is a goal of the Early Psychosis Intervention Programme (EPIP)?**
- (A) raising awareness of early signs and symptoms of psychosis.
 - (B) reducing stigma associated with psychosis.
 - (C) facilitate timely review of referrals.
 - (D) alleviate caregiver burden.
 - (E) All of the above.
- 8. Which of the following is a feature of pre-psychotic prodrome?**
- (A) Seizures.
 - (B) Migrainous headaches.
 - (C) Mood changes.
 - (D) Hallucinations.
 - (E) Delusions.
- 9. Which of the following is a feature of ARMS (at risk mental state)?**
- (A) Aged 14 to 30.
 - (B) Attenuated psychotic symptoms.
 - (C) Limited intermittent psychotic symptoms.
 - (D) First degree family member with psychosis.
 - (E) All of the above.
- 10. In the area of psychosis, Primary care physicians (PCPs) play an important role in mental health promotion and prevention. Which of the following is the best reason?**
- (A) PCPs are needed to help manage the large numbers of such patients in the community.
 - (B) PCPs are able to refer cases to the specialists.
 - (C) PCPs possess the skills and medication to effectively treat cases.
 - (D) PCPs have a strong rapport with the patient and are in a position to identify early cases.
 - (E) PCPs are required to notify cases to the Ministry of Health.
- 11. Mr Tan has been visiting the casino on weekends with his friends for the past 6 months, and would stay through the night on Saturdays. He recently returned at dawn in drunken stupor. His wife Mrs Tan relates this problem to you saying that she tries to stop him but he refused. He says he only gambles a fixed amount each session. He works as a technician and does not have problems at work, he says he likes gambling including buying 4D, but has no debt. He spends less and less time with the family and Mrs Tan is very worried. Mr Tan is likely to have problems associated with**
- (A) Social gambling.
 - (B) At risk gambling.
 - (C) Problem gambling.
 - (D) Pathological gambling.
 - (E) Manic disorder.
- 12. Mrs Wang is a retired teacher and used to take trips on cruise ships with her friends to gamble at the casino. She now goes to the local casino every other day by herself and is preoccupied with gambling. Her problem surfaced when she was caught on the closed circuit camera for trying to steal casino chips. Her husband was at a loss and reports that she keeps talking about gambling and boasts to her friends about the large amounts she places per bet. Her luck has turned for the worse, but she insists on going back to 'recoup' her losses. She has pawned most of her jewelry, stopped seeing her friends, and lies to her family about the amounts she has lost. Mrs Wang has features of a**
- (A) Social gambler.
 - (B) At risk gambler.
 - (C) Problem gambler.
 - (D) Pathological gambler.
 - (E) Manic depressive.
- 13. Which of the following best describes a social gambler?**
- (A) Someone who gambles for the heightened thrill and needs higher bets to achieve the same feeling.
 - (B) Gambles for fun during new year gatherings.
 - (C) Believes gambling is a way to make money, similar to financial investment.
 - (D) Steals money to feed the gambling habit.
 - (E) Someone who likes to gamble at every opportunity.
- 14. Which of the following are risk factors for pathological gambling?**
- (A) Impulsivity.
 - (B) Alcohol abuse.
 - (C) Parents who gamble.
 - (D) Increased tolerance for bigger bets.
 - (E) All of the above.
- 15. Your patient attends to see you for a routine visit but mentions his problem dealing with gambling impulses. After probing further, you conclude that the patient is an at-risk gambler. He seems reluctant to admit and does not want to be referred for counselling. You affirm his gambling problem, and should take the following steps EXCEPT :**
- (A) Advice on limiting the money spent when gambling.
 - (B) Advice on reducing the time and days spent gambling.
 - (C) Berate him for his lack of self control.
 - (D) Discourage the notion of gambling as a means of making money.
 - (E) Suggest spending time on other activities.

16. The role of Primary care physician's in the treatment of mental illnesses in the community is deemed:

- (A) More costly.
- (B) Less convenient.
- (C) Only for continuing the care of follow-up or discharged cases.
- (D) Ideal for detecting and treating early illnesses.
- (E) Associated with more stigma.

17. The General Practitioner (GP) Psychiatric Programme has several features. Which of the following is CORRECT?

- (A) Aim to empower GP's to detect and diagnose mental illnesses early.
- (B) Lectures and refresher workshops were organized for interested GP's to skill up.
- (C) Open channel of communication between the GP's and the psychiatrists.
- (D) Costs of medications to GP's were kept low to enable final costs at the GP clinic was closer to that at the hospital.
- (E) All of the above.

18. The referral of patients to the GP. Which is TRUE?

- (A) The patient has just been discharged from IMH.
- (B) The patient needs close monitoring and frequent changes to drug dosages.
- (C) The patient is prepared to pay the slight difference for continuation of care at the GP.
- (D) Unemployed patients.
- (E) Suicidal patients.

19. The GP Psychiatric Programme has been evaluated. Which of the following statements is CORRECT?

- (A) Very poor acceptance by patients.
- (B) Less than 80% felt the GP's were competent.
- (C) More than 75% would recommend their GP to others with similar conditions.
- (D) More than 80% of GP's were satisfied with this programme.
- (E) Less than 25% of GP's would recommend this programme to their fellow GP's.

20. The Case Liaison Officer in IMH has a specific role. Which of the following is CORRECT?

- (A) Chooses and decides for the patient which GP to go to for treatment.
- (B) Coordinates care between GP and the hospital team.
- (C) For every patient, there are at least 2 care officers to coordinate care..
- (D) Only arranges referral to hospital from GP.
- (E) Does not provide support to the GP.

21. About mental illness, which of the following statements is CORRECT?

- (A) There is a growing need to ensure institutional care for

more effective management.

- (B) Rehabilitation and reintegration with community improves clinical outcome.
- (C) GP clinics often pose a stigma to the patients.
- (D) The focus is on the specialist care and not patient choice.
- (E) There is no need to decrease the burden in the hospitals.

22. An anonymous and voluntary survey in 2007 was conducted for GP's in Singapore. Which of the following result is CORRECT?

- (A) The overall response rate was above 90%.
- (B) Only one third of GP respondents were treating mental illness in the survey.
- (C) Anxiety and stress disorders were the commonest mental illnesses seen.
- (D) GP's were seeing 20 cases of mental illnesses every week.
- (E) Most GP's says that the patients were not comfortable seeing them.

23. The reasons for patients preference to see GP. Which of the following is CORRECT?

- (A) GP's can manage all the most difficult types of mental illnesses.
- (B) The GP is not familiar with their past history.
- (C) The clinic hours are fixed and inflexible.
- (D) The patients are familiar with the GP's.
- (E) The location of the clinic is not convenient to them.

24. In the survey on GPs, there are diagnoses that most GP's find most difficult/ uncomfortable to manage. Which of the following findings is FALSE?

- (A) More than 60% GPs listed schizophrenia as the most difficult/uncomfortable to manage.
- (B) About 65% GPs felt addiction to be difficult to manage.
- (C) About 25% GPs felt mental illnesses in elderly hard to manage.
- (D) GPs found anxiety and stress disorders to be conditions that were most difficult to handle.
- (E) About 30% GPs felt that sleep disorders were difficult to manage.

25. In the survey on GPs, with regards to managing patients with mental illnesses, Which of the following findings is CORRECT?

- (A) Most GP's perceived that found that they need more time for this group of patients.
- (B) About one quarter of respondents felt that negative impressions may be created in other patients and hence avoid their clinic.
- (C) Patients' preference and physician confidence often affects the management of such cases in primary care
- (D) 65% of respondents expressed a need for more knowledge on managing patients with mental illness.
- (E) All of the above.

26. In the WHO publication Mental Health Gap Action Programme Intervention Guide (mhGAP-IG) there were 11 topics on mental, neurological and substance abuse problems which were selected? Which of the following is one of the basis that selection was made?

- (A) High economic cost.
- (B) High prevalence.
- (C) High profile.
- (D) Difficult to manage in primary care.
- (E) Specialist care is needed.

27. Of the 11 topics of priority conditions selected in the Mental Health Gap Action Programme Intervention Guide (mhGAP-IG), which one topic from the following list is included?

- (A) Anxiety neurosis.
- (B) Epilepsy.
- (C) Obsessive compulsive disorder.
- (D) Post-traumatic stress disorder.
- (E) Borderline personality.

28. In the Mental Health Gap Action Programme Intervention Guide, which of the following aspects is described in detail in the Guide?

- (A) What to do.
- (B) How to do.
- (C) Why it is done.
- (D) Pitfalls to avoid.
- (E) Safety measures to take.

29. In the 1-year Graduate Diploma in Mental Health, the course is divided into X modules. What is X?

- (A) 6.
- (B) 8.
- (C) 9.
- (D) 10.
- (E) 11.

30. In the Graduate Diploma in Family Medicine (GDFM) / MMed(Family Medicine) modular course, in which unit is the topic of depression in the elderly covered?

- (A) Unit 523.
- (B) Unit 411.
- (C) Unit 213.
- (D) Unit 423.
- (E) Unit 123.

FPSC No: 36 "Cardiovascular Disease, Risk Factors and Consequences" Answers to 30 MCQ Assessment					
1.	D	11.	C	21.	D
2.	D	12.	E	22.	B
3.	B	13.	B	23.	A
4.	A	14.	E	24.	E
5.	E	15.	D	25.	C
6.	D	16.	E	26.	D
7.	E	17.	B	27.	D
8.	A	18.	D	28.	D
9.	C	19.	E	29.	A
10.	D	20.	C	30.	D

A SELECTION OF TEN CURRENT READINGS ON TOPICS RELATED TO PRIMARY CARE MENTAL HEALTH AVAILABLE AS FREE FULL-TEXT

Selection of readings made by A/Prof Goh Lee Gan

READING 1 – Stress related factors amongst resident doctors

Haoka T, Sasahara S, Tomotsune Y, Yoshino S, Maeno T, Matsuzaki I. The effect of stress-related factors on mental health status among resident doctors in Japan. Med Educ. 2010 Aug;44(8):826-34. PubMed PMID: 20633222.

URL: <http://onlinelibrary.wiley.com/10.1111/j.1365-2923.2010.03725.x/abstract;jsessionid=A15B73384CCBD57F21609C2B99D4F34.d02t01>

Haoka T, Sasahara S, Tomotsune Y, Yoshino S, Maeno T, Matsuzaki I.

Graduate School of Comprehensive Human Sciences, University of Tsukuba, Tsukuba,
Ibaraki, Japan. tks_haoka@nifty.com

SUMMARY

OBJECTIVES: This study was designed to investigate how the interaction between the ability of medical residents (doctors in postgraduate training) to cope with stress and their working conditions might affect their level of job-related stress. **METHODS:** A self-administered questionnaire was distributed to 549 first-year medical residents at 38 postgraduate education hospitals in Japan, 1-2 months after the start of clinical training. The questionnaires contained the 29-item Sense of Coherence (SOC) Scale, the Brief Scales for Job Stress (BSJS), the 12-item General Health Questionnaire (GHQ-12) and questions on basic conditions such as working hours. Sense of coherence is an important concept from the viewpoint of salutogenesis theory and influences stress recognition style. People with a strong SOC have a high ability to cope with stress. **RESULTS:** The mean +/- standard deviation (SD) score on the SOC Scale was 134.5 +/- 20.5. All participants were classified into three groups according to their SOC Scale scores. Although the objective working conditions of the three groups were statistically similar, the group with the weakest SOC Scale score showed poorer mental health status ($p < 0.05$) and scored lower for 'reward from work' compared with the groups with stronger SOC scores ($p < 0.05$). The weaker SOC group also scored higher for 'mental workload' and 'problems in personal relationships' than the other two groups ($p < 0.05$). Moreover, the weak SOC group scored less for 'support from colleagues and superiors' than the strong SOC group ($p < 0.05$). A stepwise multiple regression analysis for GHQ-12 score was conducted ($R(2) = 0.45$). 'Sleep time', 'workload', 'mental workload' and 'problems in personal relationships' were positively correlated with GHQ-12 scores. 'Reward from work' was negatively correlated with GHQ-12 scores. **CONCLUSIONS:** Residents' mental health was associated not only with working conditions, but also with their attitudes towards those working conditions. Enhancing residents' sense of 'reward from work' might be important in reducing their reactions to stress.

PMID: 20633222 [PubMed - in process]

READING 2 – Depression among ethnic communities

Furler J, Kokanovic R, Dowrick C, Newton D, Gunn J, May C. Managing depression among ethnic communities: a qualitative study. Ann Fam Med. 2010 May-Jun;8(3):231-6. PubMed PMID: 20458106; PubMed Central PMCID: PMC2866720.

URL:<http://www.annfammed.org/cgi/content/full/8/3/231>

Primary Care Research Unit, Department of General Practice, The University of Melbourne, 200 Berkeley Street, Carlton, Victoria 3053. j.furler@unimelb.edu.au

SUMMARY

PURPOSE: Clinical care for depression in primary care negotiates a path between contrasting views of depression as a universal natural phenomenon and as a socially constructed category. This study explores the complexities of this work through a study of how family physicians experience working with different ethnic minority communities in recognizing, understanding, and caring for patients with depression. **METHODS:** We undertook an analysis of in-depth interviews with 8 family physicians who had extensive experience in depression care in 3 refugee patient groups in metropolitan Victoria and Tasmania, Australia. **RESULTS:** Although different cultural beliefs about depression were acknowledged, the physicians saw these beliefs as deeply rooted in the recent historical and social context of patients from these communities. Traumatic refugee experiences, dislocation, and isolation affected the whole of communities, as well as individuals. Physicians nevertheless often offered medication simply because of the impossibility of addressing structural issues. Interpreters were critical to the work of depression care, but their involvement highlighted that much of this clinical work lies beyond words. **CONCLUSIONS:** The family physicians perceived working across cultural differences, working with biomedical and social models of depression, and working at both community and individual levels, not as a barrier to providing high-quality depression care, but rather as a central element of that care. Negotiating the phenomenon rather than diagnosing depression may be an important way that family physicians continue to work with multiple, contested views of emotional distress. Future observational research could more clearly characterize and measure the process of negotiation and explore its effect on outcomes. PMCID: PMC2866720

PMID: 20458106 [PubMed - indexed for MEDLINE]

READING 3 – Depression views

Furler J, Kokanovic R. Mental health - cultural competence. Aust Fam Physician. 2010 Apr;39(4):206-8. PubMed PMID: 20372678.

URL:<http://www.racgp.org.au/afp/201004/36591>

Primary Care Research Unit, Department of General Practice, The University of Melbourne, Victoria, Australia. j.furler@unimelb.edu.au

SUMMARY

BACKGROUND: Depression, and its associated anxiety, is very common in the community and frequently managed in general practice. Yet it remains a problematic concept. Differing views of depression influence both clinical practice and research. **OBJECTIVE:** This article discusses the way each patient's culture interacts with other important contexts of clinical practice to shape how depression is understood and managed. **DISCUSSION:** Cultural and linguistic diversity interacts with socioeconomic factors in determining the known prevalence of depression and anxiety. Detection of depression may be shaped by expectations and assumptions of both the general practitioner and patient. Language and communication barriers mean interpreters are critical to mental health care. Culturally sensitive care for depression requires a reflective approach based on a negotiated understanding of the patient's experiences and symptoms. PMID: 20372678 [PubMed - indexed for MEDLINE]

READING 4 – Mental status examination

Snyderman D, Rovner B. Mental status exam in primary care: a review. Am Fam Physician. 2009 Oct 15;80(8):809-14. Review. PubMed PMID: 19835342.

URL: <http://www.aafp.org/afp/2009/1015/p809.html>

Department of Family and Community Medicine, Thomas Jefferson University, Jefferson Medical College, Philadelphia, PA 19107, USA.
danielle.snyderman@jefferson.edu

SUMMARY

The mental status examination is an essential tool that aids physicians in making psychiatric diagnoses. Familiarity with the components of the examination can help physicians evaluate for and differentiate psychiatric disorders. The mental status examination includes historic report from the patient and observational data gathered by the physician throughout the patient encounter. Major challenges include incorporating key components of the mental status examination into a routine office visit and determining when a more detailed examination or referral is necessary. A mental status examination may be beneficial when the physician senses that something is “not quite right” with a patient. In such situations, specific questions and methods to assess the patient’s appearance and general behavior, motor activity, speech, mood and affect, thought process, thought content, perceptual disturbances, sensorium and cognition, insight, and judgment serve to identify features of various psychiatric illnesses. The mental status examination can help distinguish between mood disorders, thought disorders, and cognitive impairment, and it can guide appropriate diagnostic testing and referral to a psychiatrist or other mental health professional.

PMID: 19835342 [PubMed - indexed for MEDLINE]

READING 5 – Scaling up services

Patel V, Bloch S. The ethical imperative to scale up health care services for people with severe mental disorders in low and middle income countries. Postgrad Med J. 2009 Oct;85(1008):509-13. PubMed PMID: 19789188.

URL: <http://pmj.bmj.com/cgi/lookup?view=long&pmid=19789188>
London School of Hygiene & Tropical Medicine, UK/Sangath, India.
vikram.patel@lshtm.ac.uk

Comment in:

Postgrad Med J. 2009 Oct;85(1008):507-8.

SUMMARY

Most mentally ill people in low and middle income countries, where clinical services are typically scarce and mental health legal provisions often inadequate, do not receive requisite evidence based treatment. The unfortunate consequence is compromised health and well-being and lack of social integration in the community. Recent initiatives, such as the Movement for Global Mental Health, aim to improve the situation and, in so doing, take into account ethical factors that play a role in the face of inadequate care and mental health legislative frameworks. Two composite case vignettes based on the narratives of actual patients living in India are used to show how family carers resort to measures like deception, coercion and physical restraint in order to deal with challenging behaviours stemming from severe and enduring mental disorders. These actions, while violating patients’ fundamental human rights, are also the consequence of the utter frustration and despair experienced by families. Scaling up mental health care based on the principle of cost effectiveness is not only a clinical imperative, but also a pivotal means to ensure that the severely mentally ill are accorded the same universal rights as those enjoyed by others.

PMID: 19789188 [PubMed - indexed for MEDLINE]

READING 6 – Young people's experience seeking help for mental health

Charman D, Harms C, Myles-Pallister J. Help and e-help - young people's perspectives of mental healthcare. Aust Fam Physician. 2010 Sep;39(9):663-5. PubMed PMID: 20877772.

URL: <http://www.racgp.org.au/afp/201009/39117>

Charman D, Harms C, Myles-Pallister J.

Department of Psychology, The Cairnmillar Institute, Camberwell, Victoria.

SUMMARY

BACKGROUND: This study aimed to explore young people's experiences and perspectives on seeking and accessing help for mental health using traditional as well as electronic means. **OBJECTIVE:** Three focus groups of young people aged 13-26 years who were members of community groups, explored issues guided by a series of questions. **RESULTS:** Using interpretive phenomenological analysis of the transcripts, three themes emerged: Young people's perceptions of mental health problems in themselves and their peers; Young people's experiences of help and the importance of trust; Young people's perceptions of e-help and concerns about trust. **DISCUSSION:** Participants appeared to have a good sense of when help is needed and how they wanted to be helped for mental health problems. However, participants described many negative experiences, particularly restricted access to help and breaches of trust. There were concerns about privacy and confidentiality with e-help, as well as a general distrust and fear of harm in seeking help. PMID: 20877772 [PubMed - in process]

READING 7 – Youth friendly assessment

Parker A, Hetrick S, Purcell R. Psychosocial assessment of young people - refining and evaluating a youth friendly assessment interview. Aust Fam Physician. 2010 Aug;39(8):585-8. PubMed PMID: 20877754.

URL: <http://www.racgp.org.au/afp/201008/38497>

Parker A, Hetrick S, Purcell R.

Orygen Youth Health Research Centre, The University of Melbourne, Victoria
parkera@unimelb.edu.au

SUMMARY

BACKGROUND: Given the high prevalence of mental health and/or substance use problems in young people, an assessment interview that assists clinicians to engage with young people and assess their psychosocial needs is essential. Currently, there are few assessment tools for this purpose. **OBJECTIVE:** To describe the rationale and process of extending a psychosocial assessment interview to assist clinicians in assessing the full range of mental health disorders common in young people. **DISCUSSION:** The 'headspace' assessment interview is designed to assist engagement while assessing psychosocial and mental health problems. It can be used by a range of clinicians in primary care settings for the purposes of developing treatment or referral options. To date, as part of a national clinical service platform, the interview has been used with over 2000 young people. A preliminary process evaluation indicated that the interview is perceived to have utility and acceptability among the clinicians who are using it in their practice to assess young people's mental health problems and psychosocial functioning. PMID: 20877754 [PubMed - in process]

READING 8 – Party Drugs

Frei M. Party drugs - use and harm reduction. Aust Fam Physician. 2010 Aug;39(8):548-52. PubMed PMID: 20877746.

URL: <http://www.racgp.org.au/afp/201008/38552>

Turning Point Alcohol and Drug Centre, Melbourne, Victoria. myfrei@gmail.com

SUMMARY

BACKGROUND: Party drug use, the intermittent use of stimulants, ecstasy and so-called 'designer drugs' at dance parties or 'raves', is now part of the culture of many young Australians. **OBJECTIVE:** This article discusses the risks associated with the use of 'party drugs' and describes an useful approach to general practitioner assessment and management of patients who may be using party drugs. **DISCUSSION:** Party drug use is associated with a range of harms, including risks associated with behaviour while drug affected, toxicity and overdose, mental health complications and physical morbidity. Multiple substance use, particularly combining sedatives, further amplifies risk. If GPs have some understanding of these drugs and their effects, they are well placed to provide an effective intervention in party drug users by supporting the reduction of harm.

PMID: 20877746 [PubMed - in process]

READING 9 – Home based activity programme for older people with depressive symptoms

Kerse N, Hayman KJ, Moyes SA, Peri K, Robinson E, Dowell A, Kolt GS, Elley CR, Hatcher S, Kiata L, Wiles J, Keeling S, Parsons J, Arroll B. Home-based activity program for older people with depressive symptoms: DeLLITE--a randomized controlled trial. Ann Fam Med. 2010 May-Jun;8(3):214-23. PubMed PMID: 20458104; PubMed Central PMCID: PMC2866718.

URL: <http://www.annfammed.org/cgi/content/full/8/3/214>

Department of General Practice and Primary Health Care, School of Population Health, University of Auckland, Auckland, New Zealand. n.kerse@auckland.ac.nz

SUMMARY

PURPOSE: We wanted to assess the effectiveness of a home-based physical activity program, the Depression in Late Life Intervention Trial of Exercise (DeLLITE), in improving function, quality of life, and mood in older people with depressive symptoms. **METHODS:** We undertook a randomized controlled trial involving 193 people aged 75 years and older with depressive symptoms at enrollment who were recruited from primary health care practices in Auckland, New Zealand. Participants received either an individualized physical activity program or social visits to control for the contact time of the activity intervention delivered over 6 months. Primary outcome measures were function, a short physical performance battery comprising balance and mobility, and the Nottingham Extended Activities of Daily Living scale. Secondary outcome measures were quality of life, the Medical Outcomes Study 36-item short form, mood, Geriatric Depression Scale (GDS-15), physical activity, Auckland Heart Study Physical Activity Questionnaire, and self-report of falls. Repeated measures analyses tested the differential impact on outcomes over 12 months' follow-up. **RESULTS:** The mean age of the participants was 81 years, and 59% were women. All participants scored in the at-risk category on the depression screen, 53% had a Diagnostic and Statistical Manual

of Mental Disorders or International Classification of Diseases, Tenth Revision diagnosis of major depression or scored more than 4 on the GDS-15 at baseline, indicating moderate or severe depression. Almost all participants, 187 (97%), completed the trial. Overall there were no differences in the impact of the 2 interventions on outcomes. Mood and mental health related quality of life improved for both groups. CONCLUSION: The DeLLITE activity program improved mood and quality of life for older people with depressive symptoms as much as the effect of social visits. Future social and activity interventions should be tested against a true usual care control.

PMCID: PMC2866718

PMID: 20458104 [PubMed - indexed for MEDLINE]

READING 10 – Motherhood and mental illness

Frayne J, Nguyen T, Allen S, Rampono J. Motherhood and mental illness--part 2--management and medications. Aust Fam Physician. 2009 Sep;38(9):688-92. Review. PubMed PMID: 19893796.

URL: <http://www.racgp.org.au/afp/200909/33947>

Childbirth and Mental Illness Antenatal Clinic, King Edward Memorial Hospital for Women, Perth, Western Australia. jacqueline.frayne@health.wa.gov.au

SUMMARY

BACKGROUND: General practitioners see many women who may be on medication for the management of their mental illness before, during, or after a pregnancy. **OBJECTIVE:** This article reviews the current evidence and gives practical advice on management and use of psychotropic medication in women with mental health disorders in pregnancy. **DISCUSSION:** The general practitioner is often the first point of contact, and is vital in giving timely and accurate information and encouraging appropriate treatment choices in women with mental illness in our community. The risk-benefit analysis of treatment needs to be considered in light of the evidence at hand. Specialist opinion in complex cases must be sought early.

PMID: 19893796 [PubMed - indexed for MEDLINE]

DEVELOPING PRIMARY CARE RESEARCH IN ASIA PACIFIC – WHERE ARE WE HEADING?

A/Prof Goh Lee Gan

SFP2010; 36(4): 42-43

INTRODUCTION

In this communication which was first published in the Conference Handbook of the 2010 Asia Pacific Primary Care Research Conference which took place in the weekend of 4-5 Dec 2010 in Gallery Hotel in Singapore, the experience of developing primary care research in Asia Pacific is described. In this context, Primary Care research is taken to be synonymous to family medicine research or general practice research.

Developing primary care research is a challenge that the Family Medicine Research Interest Groups in Asia Pacific is intent on making it a reality, starting with the RENAP (Research Network in Asia Pacific) Workshop held in Phuket in 2004 from July 10-12. The objectives of that workshop is evergreen namely, (1) to develop family medicine research capacity in the Asia Pacific region, (2) to provide delegates with hands-on approach to develop a research project, and (3) to encourage cross border collaboration.

Since then various research meetings have been held to further drive the objectives of the Phuket workshop. Our Malaysian colleagues have been a strong force in moving things forward. In a research meeting attended by a handful in Kuala Lumpur in 2008 it was felt that we need to think of how to create a buzz for primary care research that will be self-sustaining.

The conclusion in that brainstorm meeting was to try out the Formula 1 Races idea of good research prizes, and good hands-on research training opportunities -- just like in the Formula 1 Races. This culminated in the 2009 Asia Pacific Primary Care Research Conference hosted by our Malaysian colleagues which was held successfully from 5-6 December at Melaka, Malaysia. There were 136 participants from 5 countries: Taiwan, Singapore, Myanmar, Hong Kong, and Malaysia. Wonca Asia Pacific region sponsored 6 participants with a total cost of RM3000.

In the Melaka Conference, there were research presentations for the top 3 prizes in the oral presentations of USD1000 for the top award called the Rajakumar Award, and other two awards of USD500 each. There were also three best poster awards of USD500 each. The research training tracks included research methodology, biostatistics, qualitative research, and medical writing.

We are pleased to build on the successes of the Inaugural Asia Pacific Primary Care Research Conference. In this conference there will be the Rajakumar Award, and two oral presentation awards, as well as three poster awards. We have added the research championship in a training track co-ordinated by Dr Tan Ngiap Chuan. The other research training tracks are: a track on qualitative research using the Delphi Study; a track on family medicine research protocol from idea to execution; and a track on designing and understanding impactful primary care studies.

THE PRIMARY CARE RESEARCH AGENDA

There are many ways we can define the primary care research agenda. One useful way is to group the primary care research agenda as what the European General Practice Research Network (EGPRN) has done into four core areas:

- (a) Clinical research (with outcomes at the patient level, and measuring patients' health issues including function or quality of life);
- (b) Health services research (focusing on doctor or system related questions and outcomes);
- (c) Research on education and teaching in general practice;
- (d) Research on what is adequate research methodology.

BUILDING CAPACITY

Building research capacity is an important primary care research development strategy. Attention to this will ensure the research manpower pipeline is kept flowing. In this context various activities have been proposed as objectives for the Wonca triennium, 2010 to 2013:

1. Create self-sustaining webpage – AP Region webpage as information and archival site for activities, proceedings, papers, storehouse of research tools, blogs of collaborative research developments, information, notices and announcements of research activities

GOH LEE GAN, Associate Professor, Head, Division of Family Medicine, University Medicine Cluster, National University Health System
Senior Consultant, Institute of Family Medicine, College of Family Physicians Singapore

2. Be information point of FM research activities of the Region – research training meetings, and national meetings
3. Create forum for ReNAP projects to happen – identify champions, project leaders, project details – look for external funds e.g. Asian Development Bank, WHO, or National funding.
4. Develop a training and development forum for researchers – Workshops, Seminars -- Working Party initiated, member country initiated. These activities should synergize activities and avoid duplication.
5. Manage and grow AP Research manpower development funds -- Use of AP Region subsidy funds in assisting research delegates to meetings, and workshops
6. Utilize research meetings to attract participation of non-member country organizations – with the hope of encouraging them to join WONCA

SECONDARY MULTIPLIER EFFECTS

It is hoped that the research conferences such as this one could generate secondary multiplier effects through the participants going home to their respective countries and generating interest and outcomes for better care through relevant primary care research.

THE ASIA PACIFIC FAMILY MEDICINE JOURNAL

There is a need for platforms where research findings can be shared. Besides local journals there is the Asia Pacific Family Medicine Journal. The idea is to contribute to all publications and not only to the top tier ones. And of course remember to contribute papers to the Regional Family Medicine journal as well.

THE 2010 ASIA PACIFIC PRIMARY CARE RESEARCH CONFERENCE

The 2010 Primary Care Research Conference has achieved what it sets out to do. Attract attendance to a Primary Care Research Conference by making it a positive experience, just like the predecessor Conference in Melaka, Malaysia in 2009.

Research learning and teaching

The four tracks of research learning and teaching in these Conference were successful. The presentations of the output from the Research Championship bore the effects of the polishing by the coaches in each of the four presentations made. We look forward to the research questions being answered by the next Research Conference in 2011 in Malaysia.

Research competition and awards

Congratulations go to the winners of the 2010 Primary Care Research Competitions. The presentations had much to tell about what has been found about Primary Care practice. The following are the winners:

Best Poster Award:

- 1st Dr Tin Myo Han (Myanmar)
- 2nd Mr Wee Liang En (Singapore)
- 3rd Mr Ray Lai Tian Rui (Singapore)

Rajakumar Award – The Best Oral Presentation:

- 1st A/Prof Tan Boon Yeow (Singapore)
- 2nd A/Prof Nik Sherina Hanafi (Malaysia)
- 3rd Dr Tan Kok Heng Adrian (Singapore)

Wong Heck Sing Award – The Best Oral Presentation from Students and Trainees:

Mr Wee Liang En (Singapore)

Research Championship 2010 – The Awards on Research Question and Study Design:

- 1st Dr Moey Kirm Seng Peter & Dr Chang Ngai Kin Christopher (Singapore)
- 2nd Dr Low Lian Leng & Dr Ang Yee, Gary (Malaysia)
- 3rd Dr Ngieng Kiong Kiong, Dr Kok Sim Hui & Dr Lenny Martini Bte Hamden (Malaysia)
- Tie for 3rd Dr Peter Sathiyathan, Dr Abdul Hafiz Mohamad Ghani & Dr Kong Sie Zin (Malaysia)

Thanks

The success of the 2010 Asia Pacific Primary Care Research Conference owed a great deal to many stakeholders – promoters of primary care research in Singapore and Malaysia, participants, well wishers and sponsors, the Host Organising Committee, and the College of Family Physicians, Singapore Secretariat staff. We will put our energies together again for the 2011 Asia Pacific Primary Care Research Conference

AN OPEN INVITATION

Until we see you in Malaysia in 2011, research participants please hone your research skills and set your sights to participate in the next Asia Pacific Primary Care Research Conference.

CONCLUSION

The application of the Formula 1 Races idea to develop Family Medicine Research appears to be working as a social experiment to promote Primary Care Research. We are succeeding where hitherto we have not.

THE INAUGURAL PRIMARY CARE RESEARCH CHAMPIONSHIP AS A SOCIAL EXPERIMENT TO PROMOTE RESEARCH

Dr Tan Ngiap-Chuan, A/Prof Ng Chirk Jenn, A/Prof Goh Lee Gan

SFP2010; 36(4): 44-45

INTRODUCTION

Primary care research is currently at the cross-roads in the ASEAN region. Research activities are springing up within primary care or Family Medicine academic institutions in Asian countries. Some are advanced like that in Australia and Malaysia, as evidenced by their respective bibliographies of primary care research (Khoo et al, 2008)¹. Others are gaining momentum in their research efforts.

Engaging practicing family physicians to participate in research remains a challenge due to competing interests for the busy doctors, especially for the private general practitioners. Nonetheless, more family physicians are receiving further training in the field of family medicine with resultant greater exposure to evidence-based medicine and research; more of them recognise the merits of research to value-add to their quality of care delivery to their patients. Research ideas begin to sprout amongst family physicians within both public and private primary care practices. It is vital that such ideas do not die prematurely due to paucity of stimulation. A crucible is urgently needed to transform these ideas into scientifically sound research studies.

The promotion of primary care research initiated by WONCA at the Kingston invitational Conference in 2003 has been a good rallying point. (Rosser & van Weel, 2004)². The vision that research in Family/General Practice is essential for improving health globally is a powerful *raison d'être* (Rosser & van Weel, 2004)³. Armed with this vision, the Kingston conference issued seven recommendations which together from a road map for organisational, national, and regional efforts at developing family medicine research infrastructure and processes.

These recommendations can be grouped into 3 categories: (1) building dissemination mechanisms and a clearinghouse, (2) building research infrastructure and processes, and (3) building social capital. (Stange, 2004)⁴. In pursuance of the second and third categories of recommendations, the authors of this editorial mooted the idea of the research championship which will be one of the highlights of the second Asia-Pacific Primary Care Research Conference (APPCRC) to be held in Singapore on 4th and 5th December 2010.

The Aims and the Ends in Mind

The aim is to use this championship as the crucible for family physicians to put forward their research questions and ideas and to learn to use appropriate research methods to answer them, being guided by experienced family medicine researchers in the academia. It is akin to putting research ingredients into a wok with the aim of preparing a palatable and nutritious dish to nourish the discipline under the close supervision of experienced chefs.

With specialist researchers and bench scientists competing for the same pie of research funding, family physicians encounter an uphill battle. The championship is thus staged in a competitive environment to better prepare the family physicians to polish up their research questions, research methodology, research proposals, and presentations. These efforts have the end in mind of improving their chances of successful bids for the limited research funding pie.

In this research conference, the aims of this research championship are:

- To provide a platform for the family physicians to showcase their research ideas and to create a favourable environment to nurture them into matured research projects and studies under the guidance of experienced primary care researchers.
- To create opportunities for family physicians to work together on research projects of mutual interests with the ultimate objective of improving the health and lives of their patients and to enhance their family practice.
- To develop their presentation skills and polish up their grantsmanship in a simulated competitive climate, so as to gain recognition from their national or academic research funding agency and improve their success rate in obtaining research grants.

TAN NGIAP-CHUAN, Adjunct Assistant Professor, Duke-NUS Graduate Medical School; Adjunct Assistant Professor, Yong Loo Lin School of Medicine, NUS; Director, SingHealth Polyclinics-Pasir Ris

NG CHIRK JENN, Associate Professor, Department of Primary Care Medicine, Faculty of Medicine Building, University of Malaya

GOH LEE GAN, Associate Professor, Head, Division of Family Medicine, University Medicine Cluster, National University Health System; Senior Consultant, Institute of Family Medicine, College of Family Physicians Singapore

This championship targets any practising family physicians or medical students from established medical colleges or faculties of universities in the region, with special interest in developing the Family Medicine discipline.

To prepare the ground work of the championship, family physicians who are experienced researchers, especially those with track record of lead authorship in medical research publications, take on the role of mentors to the targeted participants. These mentors are encouraged to provide input to participants during the championship.

Teamwork is the way for primary care research. Solo efforts will drain any novice researcher. Participants are encouraged to form teams of three to eight members within their institutions. They may also collaborate with family physicians or medical students of other medical institutions in their respective country or other Asia-Pacific countries.

Areas of Research in Family Medicine

Primary care research is broad-based, from clinical to health service to pedagogy research in family medicine training and education. The authors have selected Prof Larry Green's domains Family Medicine research (Green, 2004)⁵ as a model for the championship. Participants should relate their research question and idea to any of the four domains or domain interface:

1. Disease
2. Patient/Healthy individual
3. Physician/family physician
4. Healthcare system

Examples of domains of research include management of upper respiratory tract disease (acute disease) or hypertension (chronic disease), health-seeking behaviour (patient/public), drug prescribing behaviour (physician), accessibility to emergency care in primary care clinics (healthcare system), doctor-patient interaction or patient's self-management in asthma (disease-patient domain interface).

Judging at the Championship

To create excitement and to stimulate audience' participation, the research proposal presentation will be judged live based on a two-tiered system. A panel of plenary speakers at the conference will be appointed to judge and provide critique during the live presentation. What sets this championship apart from the conventional poster or oral presentation in medical conferences is the participation of the conference audience in judging the entries. The audience will serve as jurors to appraise the teams in terms of the clarity of the research question and how the research proposal appeals and impacts on them with regards to the importance or relevance to family practices. After all, it is important for all participants to judge for themselves the merit and values of the research and its translation to better primary care in the future. As such, the audience's input will contribute towards the team total scores in the final round of the championship. This is enabled by the use of the "classroom performance system" clickers, which allow remote input from the live audiences and immediate tally of the scores.

Prizes will be awarded to the team with the highest score in recognition of the team's efforts. The championship trophy will be presented to the winning team at the next WONCA Asia Pacific regional conference, who will be invited to report on the progress of their research project after the championship. This ensures that this research championship delivers what it is set up to achieve and continues to be a major catalyst for further primary care research development.

REFERENCES

1. Khoo EM, et al. Bibliography of Primary Care Research I Malaysia. University of Malaya: Kuala Lumpur, 2008.
2. Rosser WW, van Weel C, Wonca Kingston Research Conference 2003. URL: http://www.globalfamilydoctor.com/publications/news/april_2003/feature1.htm. accessed 2010 Sep 20.
3. Rosser WW, van Weel C, Research in Family/General Practice is Essential for Improving Health Globally. *Ann Fam Med* 2004 May 26;2 Suppl 2:S2-3.
4. Stange K. Improving Health Care Locally and Globally. *Ann Fam Med*. 2004 Jul/Aug 26;2(4):368-70.
5. Green LA. The research domain of family medicine. *Ann Fam Med*. 2004 May 26;2 Suppl 2:S23-9.

LACTEOL FORT TREATMENT REDUCES ANTIBIOTIC ASSOCIATED DIARRHEA

Dr Yap Soo Kor Jason, A/Prof Gwee Kok Ann, Chen Zhaojin, A/Prof Tai Bee Choo, A/Prof Wong Mee Lian

ABSTRACT

Background: Antibiotic treatment is commonly associated with gastrointestinal symptoms, in particular diarrhea. The use of lactobacillus preparation has been proposed as a preventive measure.

Objectives: We conducted an exploratory study on the effect of Lacteol fort (LF), a heat inactivated lactobacillus preparation, on antibiotic associated bowel disturbances in a primary care population.

Methods: Consecutive patients attending a primary care clinic because of infection and who were prescribed antibiotics were recruited prospectively. All patients seen by one attending physician were prescribed antibiotics without LF (antibiotic only) (n=96, 29% male, mean age 38 years), while all patients seen by another attending physician were prescribed 2 LF capsules bd for one week during the antibiotic treatment course (antibiotic+LF) (n=88, 43% male, mean age 36.4 years). From the same centre, healthy patients attending the annual health screening (healthy controls) (n=141, 23% male, mean age 39.7 years) were also enrolled in the study. All subjects completed a structured questionnaire at entry, and kept a bowel diary for two weeks from the start of treatment.

Results: More patients who received antibiotic treatment reported loose stools ≥ 1 day than healthy subjects who had not received antibiotics, but diarrhea was less in the Lacteol fort treated group (antibiotic only: RR = 1.36, 95% CI 1.07 – 1.72; antibiotic+LF: RR = 1.16, 95% CI 0.89 – 1.51, p=0.046). LF did not reduce the risk of developing bloating, flatus and abdominal pain among patients given antibiotics.

Conclusion: Our results suggest that Lacteol fort treatment may reduce the risks of diarrhea associated with antibiotic treatment.

Keywords: lactobacillus, antibiotic, diarrhea, probiotic

YAP SOO KOR JASON, Head, Training & Development at ParkwayShenton, Adjunct Assistant Professor at Duke-NUS Shenton Medical Group

GWEE KOK ANN, Gastroenterologist at Gleneagles Hospital, Adjunct Associate Professor of Medicine at the National University of Singapore, and Visiting Consultant, National University Hospital Stomach Liver & Bowel Clinic, Gleneagles Hospital

CHEN ZHAOJIN, Research Assistant, Dept of Epidemiology & Public Health, NUS

TAI BEE CHOO, Associate Professor, Dept of Epidemiology & Public Health, NUS

WONG MEE LIAN, Associate Professor, Dept of Epidemiology & Public Health, NUS

SFP2010; 36(4): 46-49

INTRODUCTION

Diarrhea is the commonly reported side effect of antibiotic treatment for non-gastrointestinal infections.¹⁻³ In an earlier prospective study of 200 patients receiving antibiotics from our clinic, loose stools and bloating were reported significantly more frequently than in controls who had not received antibiotics.⁴

Disturbance of the normal gastrointestinal microflora is a possible mechanism for the development of diarrhea, and treatment with probiotic microorganisms such as lactobacilli, has been proposed as a preventive measure. However, there is a perception that antibiotic treatment may affect the viability of probiotic bacteria. The aim of this study was to examine the effects of Lacteol fort (LF), a heat inactivated lactobacillus preparation lactobacillus preparation, on antibiotic associated diarrhea. A secondary objective was to study its effects on other bowel symptoms. LF was chosen for this study because it is on the clinic's standard list, and is indicated for the treatment of diarrhea. This study also gave us the opportunity to estimate the prevalence of irritable bowel syndrome (IBS) in our patient population.

MATERIALS AND METHODS

Subjects

In this study, we prospectively recruited consecutive patients who were prescribed antibiotics in our primary care clinic and healthy patients attending their annual health screening. The following were exclusion criteria:

- (1) History of recurrent diarrhea, functional dyspepsia or irritable bowel syndrome (IBS)
- (2) History of peptic ulcer or major abdominal surgery
- (3) History of psychiatric illness
- (4) Pregnancy
- (5) Immuno-compromised states eg patients on steroid or chemotherapy
- (6) Had received antibiotics 1 month or less before the start of the study
- (7) Current prescription of antibiotics for a gastrointestinal illness.

Response to recruitment was 75%. Those who declined to participate were mainly young executives in higher management level who had frequent business travel or overseas assignments. Of the 184 patients who required antibiotic therapy, the majority 111 (60.3%) were given for upper respiratory tract infections and the remaining 73 (39.7%) were for skin sepsis, urinary tract infections, ENT conditions and other infections. Penicillins accounted for 108 patients (58.7%), macrolides 52 patients (28.3%) and other antibiotics 24 patients (13.0%).

Study design

The study protocol was approved by the institutional review board, and written informed consent was obtained from every patient before enrollment.

All patients receiving treatment from one attending physician were prescribed antibiotics without LF (antibiotic only), while all patients receiving treatment from another attending physician were prescribed two LF capsules bd for one week during the antibiotic treatment course (antibiotic+LF). From the same centre, healthy patients attending annual health screening (healthy controls) were invited to participate only in the assessment procedures. Eligible patients completed a baseline validated structured questionnaire and kept a bowel diary for two weeks from the time of recruitment.

Assessment procedures

At entry, a previously validated structured questionnaire was administered to each patient via a face-to-face interview by a research assistant.⁴ Patients' demographic details, reasons for attendance, the type of antibiotics prescribed, the presence of abdominal pain, bloating, flatulence, and the patients' normal bowel habit, including the frequency and consistency of their stools, were recorded. Symptoms were defined as being present when they occurred more than 25% of the time. Irritable bowel syndrome (IBS) was defined by the Rome II criteria.

All patients were also requested to complete a 2-week bowel diary. Careful instructions were given on how to fill up the diary which recorded stool timing and stool consistency, occurrence of abdominal pain, bloating and flatulence. The diary was returned to the clinic at the end of 2 weeks. A Bristol Stool Scale was also given to avoid ambiguity in reporting.⁵

Outcome Measures

Outcome measures were defined as the incidence of bowel symptoms (abdominal pain, bloating, change in stool frequency, and change in stool consistency) in patients during the 2 weeks after recruitment into the study. In addition to the development of specific symptoms, the frequency of experiencing such symptoms was compared between cases and controls. The primary endpoint was the number of days with loose stools during the 2 weeks of diary recording.

Statistical Analysis

Demographic data was summarised in terms of frequency and percentages in the case of categorical variables, and expressed as mean and standard deviation for continuous variables.

Inter-group comparison of proportions was performed using the Pearson chi-square, with effect measure presented in terms of relative risk (RR) and its associated 95% confidence interval (CI). Further analysis was carried out to account for potential confounding effect of age and baseline IBS on the outcomes. Statistical evaluations were made assuming a two-sided test based on a 5% level of significance. The STATA (Version 11) software was used for all statistical analysis.

Results

A total of 325 patients were recruited: 96 antibiotic only (29% male, mean age 38 years), 88 antibiotic+LF (43% male, mean age 36.4 years), and 141 healthy controls (23% male, mean age 39.7 years) (Table I). The prevalence of IBS at baseline was 33% for antibiotic only, 30% for antibiotic+LF and 21% for healthy controls ($p = 0.111$). However, patients on antibiotics with or without LF were at higher risk of IBS at baseline as compared with healthy controls (RR = 1.53; 95% CI 1.01 to 2.33, $p = 0.039$).

More patients who received antibiotic treatment reported loose stools ≥ 1 day than subjects who did not receive antibiotics (antibiotic only: crude RR = 1.36, 95% CI 1.07 – 1.72; antibiotic+LF: crude RR = 1.16, 95% CI 0.89 – 1.51; $p = 0.046$) but fewer had diarrhea in the antibiotic+LF group (Table II). Adjusting for the potential confounding effect of age and baseline IBS, the results remained unaltered (antibiotic only: adjusted RR: 1.32, 95% CI 1.03 – 1.70; antibiotic+LF: adjusted RR = 1.14; 95% CI 0.86 – 1.51). The number of days with loose stools was significantly greater in patients not receiving LF, than healthy controls (antibiotic only 2.39 days, healthy 1.53 days, $p=0.03$). LF did not significantly reduce the

Table I: Demographic characteristics of study subjects by treatment

	Antibiotic only (n = 96)	Antibiotic + LF (n = 88)	Healthy controls (n = 141)
Mean age (SD)	38.0 (9.3)	36.4 (8.4)	39.7 (8.8)
Gender (%)			
Male	28 (29.2)	38 (43.2)	32 (22.7)
Female	68 (70.8)	50 (56.8)	109 (77.3)
Race (%)			
Chinese	85 (88.6)	79 (89.8)	126 (90.6)
Malay	7 (7.3)	4 (4.6)	6 (4.3)
Indian	3 (3.1)	2 (2.3)	5 (3.6)
Other	1 (1.0)	3 (3.3)	2 (1.5)
Baseline IBS	32 (33.3)	27 (30.1)	23 (20.9)

Note: All 325 subjects completed baseline questionnaire and baseline bowel diary.

risk of developing bloating, flatus and abdominal pain among patients given antibiotics although there appeared to be a trend (Tables III to V).

Table II : Prevalence of loose stool \geq 1 day by treatment

	Prevalence (%)	Crude RR (95% CI)	p-value
Treatment (%)			0.046
Healthy controls	65 (46.1)	1.00	-
Antibiotics + LF	47 (53.4)	1.16 (0.89 – 1.51)	0.282
Antibiotics only	60 (62.5)	1.36 (1.07 – 1.72)	0.013

Table III : Prevalence of bloating by treatment

	Prevalence (%)	Crude RR (95% CI)	p-value
Treatment (%)			0.195
Healthy controls	16 (11.5)	1.00	-
Antibiotics + LF	10 (11.5)	1.00 (0.47 – 2.10)	0.997
Antibiotics only	18 (19.1)	1.66 (0.89 – 3.09)	0.105

Table IV : Prevalence of flatus by treatment

	Prevalence (%)	Crude RR (95% CI)	p-value
Treatment (%)			0.421
Healthy controls	27 (19.6)	1.00	-
Antibiotics + LF	21 (25.6)	1.31 (0.79 – 2.16)	0.294
Antibiotics only	25 (26.0)	1.33 (0.83 – 2.15)	0.241

Table V : Prevalence of abdominal pain by treatment

	Prevalence	Crude RR(95% CI)	p-value
Treatment (%)			0.517
Healthy controls	10 (7.1)	1.00	-
Antibiotics + LF	3 (3.5)	0.49 (0.14 – 1.73)	0.252
Antibiotics only	6 (6.4)	0.89 (0.34 – 2.38)	0.821

DISCUSSION

In a previous prospective study conducted in our primary care clinic, we found that significantly more patients prescribed antibiotics reported gastrointestinal symptoms than healthy controls.⁴ In that study, the prevalence of gastrointestinal symptoms reported amongst 200 antibiotic treated patients were: loose stools 11.5%, abdominal pain 3%, bloating 3.5% and hard stools 8.5%. In contrast, amongst the 600 healthy controls, the prevalences were : loose stools 1.5%, abdominal pain 1.2%, bloating 1.0% and hard stools 1.0%. As in our earlier study, we found in our present study that diarrhea was the commonest bowel disturbance.

Of note is that in this cohort of executives working in the Central Business District where the clinic is situated, there was a substantial number of healthy subjects reporting bowel symptoms such as abdominal pain, bloating, flatulence, and especially loose stools. Even though we had excluded patients with a known diagnosis of irritable bowel syndrome, we found a high prevalence of patients who met Rome II criteria for IBS

at baseline. In our present study, the 20.9% prevalence of Rome II criteria for IBS in the patients attending for health screening gives us an estimate of the IBS prevalence in a primary care setting. In an early study from a local tertiary hospital, IBS by clinical criteria accounted for 17% of new patients referred to the gastroenterology clinic.⁶ In our community survey, we found a prevalence of 8.6% by Rome II criteria.⁷ These observations suggest that there is a high background prevalence of pre-existing bowel symptoms in our study population, and this may predispose to the development of antibiotic associated symptoms. However, even after controlling for baseline IBS, we found that patients receiving antibiotic treatment reported significantly more bowel symptoms in prospective diary recordings.

We selected Lacteol fort for our study because it is one of the earliest lactobacillus formulation introduced in Singapore for the treatment of diarrhea and is therefore widely prescribed by family doctors and available over the counter to patients. However it is not considered to be a probiotic because the definition of a probiotic formulation is that the contents include live micro-organisms, whereas Lacteol fort consists of heat-killed *Lactobacillus* bacteria. The therapeutic effects of Lacteol fort have been attributed to its protective properties, including adhesion, to colonize the human intestinal absorptive and mucosecretory cells. It hides the receptor sites of pathogenic germs and prevents their adhesion.⁸⁻¹⁰ The use of fermented culture medium of LF alone was capable of inhibiting cellular injuries and intracellular growth of pathogens.¹¹

In our study, we observed that LF may reduce the risk of diarrhea among those who were prescribed antibiotics. In addition to the effect on loose stools, there was also a trend for LF treatment to improve symptoms of abdominal pain, flatulence and bloating. We recognize the limitations of an unblinded study, in particular the possibility of a placebo effect. However, our primary endpoint, ie loose stools defined by the Bristol stool scale and based on recordings in a bowel diary, is a fairly robust one that is less open to subjective perception as is the case with symptoms like bloating, flatus and abdominal pain.

There is also evidence from in-vitro research to suggest that live bacterial organisms are not necessarily critical for the therapeutic effects of probiotic agents. In a study employing a mouse-model of post-infectious irritable bowel syndrome, it was demonstrated that treatment with live *Lactobacillus paracasei* could attenuate the inflammatory and motility changes observed in the intestines arising from infection with the *Trichinella spiralis* nematode. Of particular interest, was that treatment with the spent culture medium for *Lactobacillus paracasei* (in the absence of live organisms) was able to provide almost identical anti-inflammatory protection and improvement in muscle contractility.¹²

CONCLUSION

Our observation that concomitant treatment of Lacteol fort with antibiotic may reduce the risks of developing diarrhea, suggests that live lactobacillus containing preparations may not be essential for therapeutic effects, and that treatment may be viable in the presence of antibiotics.

REFERENCES

1. Wiström J, Norrby SR, Myhre EB, et al. Frequency of antibiotic associated diarrhoea in 2462 antibiotic-treated hospitalized patients: a prospective study. *J Antimicrob Chemother* 2001; 47:43-50.
2. McFarland LV. Epidemiology, risk factors and treatments for antibiotic associated diarrhoea. *Dig Dis* 1998; 16:292-307.
3. Bartlett JG, Chang TW, Gurwith M, et al. Antibiotic-associated pseudomembranous colitis due to toxin producing Clostridia. *N Engl J Med* 1978; 298:531-4.
4. Jason Yap Soo Kor, Gwee Kok Ann, Joel Hwan Ern Huei, et al. Antibiotic associated bowel disturbances in a young healthy primary care population. *Singapore Family Physician* 2006; 32(2):54-8.
5. Heaton KW, Ghosh S, Braddon FEM. How bad are the symptoms and bowel dysfunction of patients with irritable bowel syndrome? A prospective study with emphasis on stool form. *Gut* 1991;32:73-9.
6. Kang JY, Yap I, Gwee KA. The pattern of functional and organic disorders in an Asian gastroenterological clinic. *J Gastroenterol Hepatol* 1994;9:124-7.
7. Gwee KA, Wee S, Wong ML, et al. The Prevalence, Symptom Characteristics and Impact of Irritable Bowel Syndrome in an Asian Urban Community. *Am J Gastroenterology* 2004;99:924-31.
8. Chauviere G, Coconnier MH, Kerneis S, et al. Adhesion of human Lactobacillus acidophilus strain LB to human enterocyte-like Caco-2 cells. *J Gen Microbiol*. 1992;138(pt 8):1689-96.
9. Chauviere G, Coconnier MH, Kerneis S, et al. Competitive exclusion of diarrheagenic Escherichia coli (ETEC) from human enterocyte-like Caco-2 cells by heat-killed Lactobacillus. *FEMS Microb Lett*. 1992;70:213-7.
10. Coconnier MH, Bernet MF, Kerneis S, et al. Inhibition of enteroinvasive pathogens to human intestinal Caco-2 cells by Lactobacillus acidophilus strain LB decreases bacterial invasion. *FEMS Microbiol Lett*. 1993; Jul 1;110(3):299-305.
11. Coconnier MH, Levin V, Lorrot M, et al. Antagonistic activity of Lactobacillus acidophilus LB against intracellular Salmonella enteric serovar Typhimurium infecting human enterocyte-like Caco-2/TC-7 cells. *Appl Environ Microbiol*. 2006;66:1152-7.
12. Elena F, Verdu, Premysl Bercik et al. Lactobacillus paracasei Normalizes Muscle Hypercontractility in a Murine Model of Postinfective Gut Dysfunction. *Gastroenterology* 2004; 127:826-37.

DOCTOR IS MY KID'S HEART FIT FOR THE CROSS COUNTRY RUN? (PRE-PARTICIPATION CARDIOVASCULAR ASSESSMENT OF YOUNG AMATEUR ATHLETES - AGE 12 TO 30)

Dr Rukshini Puvanendran

*"The time you won your town the race
We chaired you through the marketplace;
Man and boy stood cheering by,
And home we brought you shoulder high.*

*Today, the road all runners come,
Shoulder-high we bring you home,
And set you at your threshold down,
Townsmen of a stiller town."*

*To An Athlete Dying Young
Alfred Edward Housmann, 1895*

SFP2010; 36(4): 50-55

INTRODUCTION

Singapore as a nation is emphasising sports. The Sports School is up and running and the first Youth Olympic Games was hosted here. Primary and Secondary School students are encouraged to take up sports as a co curricular activity and their stamina and endurance are tested with gruelling training sessions. However, frequently we are confronted with tragic news articles of the sudden death of young athletes while exercising. These athletes are in the prime of their lives, often school and national heroes. The question on everyone's mind is, could this be prevented? The Family Physician is often asked to certify fitness to participate in sports and even physically strenuous activities like Outward Bound Course. As with any form of mass screening, the majority are normal. However, missing the athlete at risk can result in tragedy and possible litigation. This review aims to give an overview on causes and screening guidelines for pre-participation cardiovascular assessment in young athletes. Musculoskeletal screening and factors that can limit performance like drugs and anaemia will not be included.

Methodology

A Pubmed Search for 'preparticipation cardiovascular screening in athletes' with limits of English language, Humans, Age Child 6-12, Adolescent 13-18 and Adult 19-44 was conducted. A total of 40 indexed articles were obtained of which there were 12 review articles. All articles were reviewed.

The recommendations of the Singapore Sports Safety Committee in 2007 were also reviewed.

Incidence and Causes of Sudden Cardiac Death in Young Athletes

The incidence of sudden cardiac deaths is not well established, and only a few studies are available. Maron et al reported an incidence of 0.7/100,000 high school athletes/year in Minnesota, USA.¹ European figures estimate 2.1/100,000 athletes/year.² No prospective studies have been done in Singapore, but the Singapore Sports Safety Council estimates the incidence as 1 in 239,000 people/year who exercised at least once a week.³

Sudden cardiac death in the young athlete is usually a result of ventricular tachyarrhythmias in an electrically unstable and unpredictable myocardium. Vigorous exercise in persons with underlying cardiac disorders increases sudden death. This has been shown in a study from Italy by Corrado et al, which shows rate of sudden cardiac death as 0.8/100 000 person years in non athletes and 2.3/100 000 person years in athletes.² There is a definite male predilection with a male: female athlete ratio of 10:1.² This can be partly explained by a lower number of female athletes, but in even after correction, male gender itself is a risk factor for sudden cardiac death.

Hypertrophic cardiomyopathy is reportedly the commonest cause of sudden cardiac death amongst young athletes in America¹. However, the European studies have reported coronary artery disease as the commonest cause of sudden cardiac death amongst these athletes². As mentioned earlier, local Singapore data is presently unavailable.

The pre-participation cardiovascular assessment aims to detect asymptomatic athletes who have potentially lethal cardiovascular abnormalities, and to protect them from the risk of sudden cardiac death by disqualification from competitive sports. Early pick up of certain arrhythmogenic diseases like hypertrophic cardiomyopathies can be treated with implantable cardio-verter defibrillators. More importantly these persons should be advised to refrain from strenuous sporting activities, intense training and competitive sports that predisposes to sudden death.² Table 1 lists the common causes of sudden death among the young population.

Hypertrophic Cardiomyopathy

Hypertrophic cardiomyopathy is the commonest cause of sudden cardiac death among young athletes, accounting for about 1 in 3 cases.⁶ This is a genetic condition with an incidence of 1:500 persons.⁷ There is often a personal or family history

RUKSHINI PUVANENDRAN, Associate Consultant, Department of Family Medicine and Continuing Care, Singapore General Hospital

Table 1: Cardiovascular Causes of Sudden Death in Young Athletes (12 –35 years)⁴

- based on a study of sudden death in 387 young athletes in USA. (Maron et al)

Hypertrophic Cardiomyopathy
Coronary artery anomalies
Commotio cordis – blunt trauma to chest resulting in ventricular fibrillation
Left ventricular hypertrophy
Myocarditis
Marfan syndrome – aortic root dilatation, aneurysm with subsequent rupture
Arrhythmogenic right ventricular cardiomyopathy
Tunnelled coronary artery
Aortic stenosis
Dilated cardiomyopathy
Myxomatous mitral valve degeneration
Mitral valve prolapse
Drug abuse
Long QT syndrome
Cardiac sarcoidosis
Brugada syndrome – genetic syndrome of myocardial sodium channels

Brugada syndrome will likely be commoner in our population in Singapore.⁵

of exertional dyspnea, syncope or palpitations. The physical examination can range from normal to a displaced apex beat with cardiac murmurs. The ECG is abnormal in 95% of cases, showing left ventricular hypertrophy, ST segment elevations and T inversions. Sudden death is a result of ventricular fibrillation.

Coronary Artery Abnormalities

In this disorder, the coronary artery arises from the wrong aortic sinus. Typically the left main coronary artery arises from left sinus of Valsalva. There may however be several variations in the number, shape, and location of the ostia or origins of the coronary arteries. Most of these variations appear to be of no clinical significance

In certain pathological variants, especially lesions which include origin of the left main coronary artery or LAD from the right sinus of Valsalva or RCA, referred to as anomalous aortic origin of a coronary artery (AAOCA). The subsequent course between the aorta and pulmonary artery to the left ventricle may result in compression of the vessel, myocardial ischemia during exercise, and sudden death in both adults and teenagers. An index of suspicion is required to pick up this condition. This condition should be considered in young athletes with exercise related chest pains or syncope. A cardiac CT angiogram will be useful to pick up this condition which may be surgically correctable.

Other Structural Abnormalities

Atrial Septal Defect (ASD) and Aortic Stenosis⁶ are the commoner of undetected congenital cardiac diseases which may be picked up on preparticipation assessments.

Marfan's Syndrome

Marfan's syndrome is associated with aortic root dilatation resulting in aortic aneurysm rupture and dissection leading to sudden death.⁸ All athletes should be screened for Marfan's syndrome and suspected patients should be referred for ECG, slit lamp examination and cardiac referral to exclude aortic root dilatation.⁹ In fact the American Heart association (AHA) recommendation is that all male athletes, taller than 1.83m and female athletes, taller than 1.78m with 2 or more features of Marfan's syndrome should be assessed. As height is an advantage in certain sports like basket ball, a higher than average proportion of person's with Marfan's syndrome will be athletes. Features of Marfan's syndrome are listed in Table 2.

Conduction Abnormalities

Wolf-Parkinson White (WPW) Syndrome, Prolonged QT syndrome and Brugada Syndrome are the commoner conduction abnormalities. WPW is due to an aberrant conduction pathway. The Brugada syndrome¹⁰ and prolonged QT syndrome are ion channel abnormalities. These are rare, accounting for about 2% of sudden deaths among athletes in the West. Brugada may be commoner in South East Asia.⁵

These conditions are usually asymptomatic and are picked up on screening ECG.

The Pre-participation Cardiovascular Assessment

The young adolescent athlete is often unlikely to volunteer symptoms. Therefore, the assessment should ideally be carried out with his or her parents present, so that history can be verified.

The history and physical examination should be focussed and, to avoid potential litigation, well documented. In fact the American Heart Association (AHA) recommends a 12 element preparticipation cardiovascular screening for competitive athletes.¹¹ The American Academy of Family Physicians recommends the use of a standardised questionnaire for the history; Table 3 lists the screening questions recommended by the AHA in their guidelines.

Parental verification is recommended for high school and middle school athletes.¹¹

In the American experience, most athletes are sent for further evaluation based on the history.

Table 2: Features of Marfan's Syndrome

• Arm span > Body Ht	• Eye abnormalities - myopia and lens dislocation
• Arachnodactyly	• Aortic insufficiency murmur
• High arched palate	• MVP
• Skeletal abnormalities-kyphosis, scoliosis and pectus excavatum	• Thumb sign
	• Wrist sign

Table 3: I^{1,12} Cardiovascular Screening Questionnaire for Pre-participation Assessment

PERSONAL HISTORY

- Have you passed out or nearly passed out during or after exercise?
- Have you ever had chest pain, discomfort or pressure during exercise?
- Does your heart race or skip a beat?
- Has a doctor ever told you that you have high blood pressure, heart murmur, heart infection or high cholesterol?
- Has a doctor ever ordered an ECG or Echo for your heart?

FAMILY HISTORY

- Has anyone in your family died for no apparent reason?
- Does anyone in your family have a heart problem?
- Has anyone in your family died of heart problem or of sudden death before the age of 50?
- Does anyone in your family have Marfan's syndrome?

Physical Examination

The examination should be focussed and include:¹¹

1. Blood pressure assessment with the patient seated.
2. Palpation of radial pulse with assessment of rate and rhythm and radio-femoral delay.
3. Assessment of nature and position of apex beat, and cardiac auscultation, specifically assessing for the heart sounds, nature of split of second sound and cardiac murmurs.
4. Assessment of features of Marfan's syndrome.

Blood Pressure

A seated brachial blood pressure of >99th percentile + 5 for age or 160/100 (age >18) with evidence of end organ damage warrants discontinuation of athletic participation pending further evaluation. BP >140/90 will require further evaluation.^{13,14}

Pulse

The pulse volume will give clues to underlying pathology. A large amplitude, rapidly rising water hammer pulse will suggest aortic regurgitation, hypertrophic cardiomyopathy, severe mitral regurgitation or patent ductus arteriosus. A small amplitude, slow raising pulse suggests aortic stenosis or low output cardiac failure. An irregular rhythm would suggest a conduction disturbance like atrial fibrillation.

The femoral pulses should be assessed especially for radio-femoral delay which together with an increase in blood pressure would suggest coarctation of the aorta.

Pre-cordial Findings

Precordial palpation should assess for apical and parasternal heaves to look for left and right ventricular hypertrophy.

Auscultation should be done in a quiet room. The physical examination should not be a perfunctory one, but rather a careful search for findings that might include a low grade heart murmur that accentuates with Valsalva's maneuver (suggestive of hypertrophic cardiomyopathy, the leading cause of sudden death in a competitive athlete).¹⁵

Assessing the heart sounds and extra sounds is as important as listening for murmurs. The second heart sound is caused by closure of the aortic and pulmonary valves. On inspiration, as more blood flows into the pulmonary circulation, the pulmonary valve closes later. The split in the second heart sound is more obvious on inspiration (physiologic split). However, a fixed split would suggest an atrial septal defect (ASD) and a paradoxical split i.e. shorter split on inspiration would suggest hypertrophic cardiomyopathy or a left bundle branch block.

Murmurs should be assessed based on intensity, timing, location and character. It is important that we get the patient to squat and stand and perform the Valsalva manoeuvre. Standing and the Valsalva cause a decrease in venous return and murmurs should get softer. However, if a murmur gets louder or is only heard after these manoeuvres, a hypertrophic cardiomyopathy or mitral valve prolapse should be suspected. Characteristics of pathological murmurs are listed in Table 5.

Screening for Marfan's Syndrome has been discussed above. All patients with abnormalities picked up should be evaluated further.

The American Heart association has been recommending standardising the clinical history and physical examination. However, with increase in legislation, the preparticipation assessment has become compulsory. Ironically, increase in legislation has lead to assessment being conducted by non physicians including chiropractors and naturopathic clinicians.¹⁶ In Singapore, at this moment we have no standardised national screening protocol.

Table 4: The 12-Element AHA Recommendations for Pre-participation Cardiovascular Screening for Competitive athletes¹¹

MEDICAL HISTORY

Personal History

- Exertional chest pain / discomfort
- Unexplained syncope
- Excessive exertional and unexplained dyspnoea/fatigue, associated with exercise
- Prior recognition of heart murmur
- Elevated systolic blood pressure

Family History

- Premature death (sudden and unexpected before age 50) due to heart disease in ≥ 1 relative
- Disability from heart disease in a close relative < 50 years of age
- Specific knowledge of certain cardiac conditions in family members: hypertrophic or dilated cardiomyopathy, long QT or ion channelopathies, Marfan's syndrome or clinically important arrhythmias

PHYSICAL EXAMINATION

- Heart murmur.
- Femoral pulse to exclude coarctation
- Physical stigmata of Marfan's syndrome
- Brachial blood pressure (sitting position)

Table 5: Clinical features of pathological murmurs

- Apical or para-sternal heave
- Associated arrhythmias
- Assn raised JVP, abnormal pulse
- Increase in intensity with maneuvers (Valsalva / squat to stand)
- Diastolic murmur
- Long duration involving late systole
- Loud Grade 3 and more
- Other abnormal sounds, gallop, clicks
- Positive family history
- Assn symptoms - chest pain, dyspnoea, syncope
- Radiation to axilla

Is Routine ECG Screening Recommended?

Routine ECG for pre-participation cardiovascular evaluation is a controversial issue. At present, the American Heart Association does not recommend routine ECG as such screening has not been fruitful in the USA. This is partly due to the ECG in normal athlete's heart, due to training and conditioning, showing abnormalities. However, increasingly the American strategy of basing the assessment solely on history and physical examination has come under fire as hypertrophic cardiomyopathy and conduction abnormalities have been missed.

Training results in physiological hypertrophy of the cardiac chambers with left ventricular hypertrophy a common finding in ECGs in competitive athletes. This isolated QRS voltage criteria for left ventricular hypertrophy (LVH) with no other ECG and clinical findings is an unusual pattern in hypertrophic cardiomyopathy.¹⁷ Other minor alterations in the athletes' ECG that are considered normal include increased PR interval (> 0.2 s), increase in R or S wave voltage (25-29 mm), early repolarisation (ST elevations >2 mm in >2 leads), incomplete right bundle branch block pattern and sinus bradycardia of < 60 beats per minute.¹⁸

In fact, a study reported by Corrado et al, showed that in hypertrophic cardiomyopathy, 94% of patients had an abnormal ECG, but the same study also showed that 81.4% of normal athletes also showed abnormalities. This could lead to unnecessary investigation of greater than 80% of normal athletes. However, on further evaluation of the study, the predominant ECG abnormality in athletes was isolated left ventricular hypertrophy on voltage criteria. However, in hypertrophic cardiomyopathy isolated voltage criteria LVH was seen in only less than 1% of patients. The pre-dominant ECG abnormalities were ST segment and T wave abnormalities, pathological Q waves and left atrial enlargement.¹⁷ The Italian group classified isolated voltage criteria LVH as normal for athletes. Corrado et al reports of 42,386 patients screened in one centre with history questionnaire, physical examination and 12 lead ECG, only 9% were referred for further evaluation and 2% were ultimately disqualified from sports.¹⁹

In the 1970s, the Italian government passed a Medical Protection of Athletic Activities Act, requiring annual medical clearance of all athletes participating in organised sports.²⁰ This included a 12 lead ECG. Reports of their 25 year experience suggests that the annual incidence of sudden cardiovascular death in athletes decreased by 89% (from 3.6/100,000 person-years in 1979-1980 to 0.4/100,000 person-years in 2003-2004; P for trend <.001), whereas the incidence of sudden death among the unscreened nonathletic population did not change significantly.¹⁹ The 0.4/100,000 incidence of sudden cardiac death in the athletic population is actually better than the 0.8/100,000 non-athletes or the unscreened population. These figures are definitely impressive. The cost of screening was 30 euros per athlete screened was borne by the Italian government.

The Study group of Sports cardiology from the European Society of Cardiologist have published a consensus statement to reinforce the principle of the need for pre-participation medical clearance of all young athletes involved in organized sports programmes, on the basis of (i) the proven efficacy of systematic screening by 12-lead ECG (in addition to history and physical examination) to identify hypertrophic cardiomyopathy-the leading cause of sports-related sudden death-and to prevent athletic field fatalities; (ii) the potential screening ability in detecting other lethal cardiovascular diseases presenting with ECG abnormalities.²¹

However, the American's concern regarding routine ECG screening for all athletes stem from lack of randomized trial data. It is important to note that the Italian study, though impressive is population based and not a randomised controlled trial. Other concerns have been cost of screening; lack of a clear standard for ECG interpretation in the athlete; the likelihood that asymptomatic athletes with underlying lethal conditions might differ significantly from symptomatic individuals with the same conditions; and concern that ECG screening might actually increase the death rate, via treatment-related procedural complication.²²

Routine echocardiography is not recommended as part of pre-participation cardiovascular assessment.

Singapore at Present

In Singapore, at present, compulsory mandatory screening is only for perceived high risk athletes. They include all carded athletes (athletes receiving national grants), S-league and other professional players and students in the Singapore Sports School. These assessments are done by sports physicians and include history, physical examination and 12 lead ECG.

Those attending certain courses like outward bound school, lifeguard proficiency tests and national service enlistees and Armed Forces regulars also require medical

examination. However, due to large numbers involved, there is no compulsory screening for school or club representatives and other recreational athletes. However, they are advised to undergo assessment. This is usually done by the Family Physician/General Practitioner.

Limitation of Screening

The family practitioner should understand the limits of screening. As the incidence of conditions that lead to sudden death is low, large populations need to be screened to prevent sudden death. Further, screening has limited value in preventing environmental causes of sudden death like heat stroke and viral myocarditis and traumatic injuries.

However, the screening medical examination would give a valuable opportunity for the Family Physician to educate the adolescent regarding adequate hydration, injury prevention and abstaining from exercise when he or she is unwell. This is also an ideal setting for screening and education on smoking, and abuse of alcohol, cocaine and other drugs.

SUMMARY

Pre-participation cardiovascular assessment should add value i.e. as physicians we should be focussed and screen for rare but deadly diseases that can prematurely take away the life of a young person. A cursory medical examination is inadequate. The American Heart Association's recommendation is to use a standardised questionnaire to obtain history and carry out a focussed physical examination. We should aim for this amongst all the General Practitioners/Family Physicians in Singapore. We could follow the American Heart Association recommended questionnaire, until a local Clinical Practice Guideline is available.

Routine ECG, according to the Italian experience, would be ideal, but we will need to increase the awareness levels amongst doctors of ECG norms for athletes to prevent over investigation and unnecessary cost and anxiety. Additional considerations include litigation and cost. The Italian adolescents were screened by physicians in sports facilities. They were well trained in differentiating abnormal ECG from ECG changes in the athletes' heart. The cost of training the physicians and of the ECG was borne by the government. In Singapore, the cost of the ECG will most probably be borne by the patient.

I recommend that at this point in time, Singapore should have a standardised history and physical examination questionnaire for conducting pre-participation examinations. There is not enough evidence to suggest that routine ECG for every pre-participation medical examination is cost effective.

REFERENCES

1. Maron BJ. Sudden death in young athletes, *N Engl J Med* 349 (2003), pp. 1064-75.
2. Corrado D, C. Basso, G. Rizzoli, M. Schiavon and G. Thiene, Does sports activity enhance the risk of sudden death in adolescents and young adults?, *J Am Coll Cardiol* 42 (2003), pp. 1959-63.
3. Overview and Recommendations for Sports Safety in Singapore: A report by the Sports Safety Committee: August 2007. Available at http://www.ssc.gov.sg/publish/etc/medialib/nsa/media_lib/document/policies_and_guidelines.Par.0048.File.tmp/Sports%20Safety%20Committee_Final%20Report_23AUG07.pdf
4. Maron BJ, Shirani J, Poliac LC, Mathenge R, Roberts WC, Mueller FO. Sudden death in young competitive athletes: clinical, demographic, and pathological profiles. *JAMA* 1996;276:199-204.
5. Teo WS, Kum R Tan RS, Maglana M, Lim YL. Brugada Syndrome in a Chinese Population. *Int J Cardiol.* 1998 Aug;65(3):281-6.
6. Maron BJ Thomson PD, Puffer JC, McGrew CA, Strong WB, Douglas LT et al: Cardiovascular preparticipation screening of competitive athletes. A statement of health professionals from the sudden death committee and congenital cardiac defects committee, American heart association. *Circulation* 1996;94:850-6.
7. Maron BJ. Hypertrophic cardiomyopathy: a systemic review. *JAMA* 2002; 287:1308-20.
8. Glorioso JJ, Reeves M Marfan syndrome: screening for sudden death in athletes. *Curr Sports Med Rep* 2002 Apr; 1(2): 67-74.
9. Saeed IM, Braverman AC. Approach to an Athlete with thoracic aortic disease. *Curr Sports Med Rep.* 2007 Apr;6(2):101-7.
10. Brugada P, Brugada J. Right bundle branch block, persistent ST segment elevation and sudden cardiac death: a distinct clinical and electrocardiographic syndrome. A multi center report. *J of Am Coll Cardiology* 1992 Nov 15;20(6):1391-6.
11. Maron BJ, Thompson PD, Ackerman MJ et al Recommendations and consideration related to preparticipation screening for cardiovascular abnormalities in competitive athletes: 2007 update, a scientific statement from the American Heart association Council on nutrition, Physical Activity and Metabolism endorsed by the American College of Cardiology Foundation. *Circulation* 2007; 115: 1643-55.
12. Giese EA, O'Connor FG, Dipenbrock PJ., Oriscello R. G: The Athletic Preparticipation Evaluation: Cardiovascular Assessment.
13. Niedfeldt MW. Managing Hypertension in athletes and physically active patients. *American Family Physician* 2002 Aug 1 (66) 445-52.
14. Kaplan NM, Devereaux RB, Miller HS Jr. 26th Bethesda Conference: recommendations for determining eligibility for competition in athletes with cardiovascular abnormalities: Task Force 4: systemic hypertension. *J Am Coll Cardiol.* 1994;24:885-8.
15. Cantwell JD. Preparticipation physical evaluation: Getting to the Heart of the Matter. *Med Sci Sports Exerc.* 1998 Oct;30(10 Suppl):S341-4.
16. Glover DW, Glover DW, Maron BJ: Evolution in the process of screening United States high school student-athletes for cardiovascular disease. *American Journal of Cardiology* 2007 Dec 1;100(11):1709-12. Epub 2007 Oct 24.
17. Corrado D, Michieli P, Basso C, Sciavon M, Thiene G: How to screen Athletes for Cardiovascular Diseases. *Cardiology Clinics* 2007 (25) 391-7.
18. Pelliccia A, Maron B, Cullasso F, et al: Clinical significance of Abnormal Electrocardiographic Patterns in trained Athletes. *Circulation* 2000.

- | | |
|--|--|
| <p>19. Corrado D, Basso C, Pavei A, Michieli P, Schiavon M, Thiene G. Trends in sudden cardiovascular death in young competitive athletes after implementation of a preparticipation screening program JAMA. 2006;296:1593-601.</p> <p>20. Tutela sanitaria delle attività sportive [Medical protection of athletic activities]. Gazzetta Ufficiale della Repubblica Italiana. December 23, 1971;8162-4.</p> <p>21. Consensus Statement of the Study Group of Sports Cardiology of</p> | <p>the Working Group of Cardiac Rehabilitation and Exercise Physiology and the Working Group of Myocardial and Pericardial Diseases of the European Society of cardiology. Cardiovascular pre-participation screening of young competitive athletes for prevention of sudden death: proposal for a common European protocol. European Heart Journal 2005 26(5):516-24;</p> <p>22. Lawless CE, Beast TM. Electrocardiograms in Athletes: Interpretation and diagnostic accuracy. Med Sci Sports Exerc. 2008 May;40(5):787-98.</p> |
|--|--|