

# Mental Health Literacy in Singapore: A Comparative Survey of Psychiatrists and Primary Health Professionals

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## Abstract

**Objectives:** To assess the beliefs amongst health professionals in Singapore about management of 3 major mental disorders, comparing psychiatrists and a sample of primary care physicians, and so identify target areas for the education of primary health professionals. **Materials and Method:** A questionnaire earlier distributed to psychiatrists at Woodbridge Hospital was posted to both Singapore general practitioners and polyclinic doctors. The questionnaire assessed the capacity of respondents to identify vignettes of depression, schizophrenia or mania, and then assessed respondents' views about the likely helpfulness of a number of interventions. **Results:** The psychiatrists and primary health professionals differed little in terms of diagnostic accuracy for depression and schizophrenia; however, only half the general practitioners and three-quarters of the polyclinic doctors correctly diagnosed mania, which was consistently diagnosed by the psychiatrists. A number of distinct differences were identified between the groups concerning the likely helpfulness and disorder specificity of various psychotropic drugs. The primary health physicians were more likely to favour non-specific management approaches, whilst the psychiatrists generally supported a focused biological approach to treatment, especially for the psychotic disorders. Some of the differences in beliefs about mental health management may well be contributed by the different patients treated by each group of clinicians. **Conclusions:** The findings have important clinical implications in terms of diagnosing common psychiatric conditions accurately and giving us professionals' views about a range of interventions for such conditions, while also assisting review of educational programmes for identifying and managing major mental disorders.

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**Key words:** Depression, Mania, Mental health surveys, Schizophrenia

## Introduction

The management of mental health disorders within a nation requires a system of care extending from the primary health care setting to tertiary and specialist care settings. To that end, professional knowledge of the recognition, management and prevention of mental disorders is critical. By studying primary health physicians' understanding of mental health disorders and their treatment preferences, educational programmes can be shaped to target areas that need clarification, or to correct errant beliefs and health practices.

Thus, we have undertaken a series of studies in Singapore, replicating a methodology introduced in the mid-1990s in Australia by Jorm and colleagues,<sup>1-3</sup> allowing the mental health literacy of the public and of various health professionals to be surveyed. The term "mental health literacy" was defined by Jorm et al<sup>1</sup> as the "knowledge and

beliefs about mental disorders which aid their recognition, management or prevention". Using vignettes describing a person with either depression or schizophrenia, Jorm developed a questionnaire to assess respondents' beliefs about mental health disorders, including the helpfulness of various interventions for each condition, and the prognosis or outcome with and without treatment. The first survey was targeted at a national community sample,<sup>1</sup> and later extended to samples of general practitioners, psychiatrists and clinical psychologists.<sup>2</sup> This allowed the researchers to compare the beliefs of the general public with those of the professional groups.<sup>3</sup> The latter revealed that "the beliefs that mental health practitioners hold about mental disorders differ greatly from those of the general public". For example, professionals believed more in the helpfulness of antidepressants for depression than the public who viewed antidepressants negatively. Such findings have implications

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for public education programmes.

This method of studying mental health literacy has also allowed a comparison of the views of Singaporean and Australian health professionals to be carried out. Parker et al (unpublished data) described how consensus between differing professional groups may either reflect the “truth” or “shared false beliefs”. These results suggested, however, that the similar views amongst psychiatrists in both countries were “likely to be derived from similar educational, training and clinical experiences”.

We have also previously reported the findings from this survey comparing psychiatrists with other mental health professionals (e.g. nurses, psychologists and social workers) in Singapore.<sup>4</sup> This revealed that the “psychiatrists favoured a professionally focused model of intervention, while the contrast professionals were more likely to judge other resources as helpful”.

There are about 100 trained psychiatrists in Singapore, of which the largest proportion (about 40) practise at Woodbridge Hospital. This main centre has nearly 3000 inpatient beds, as well as an outpatient register of more than 15,000 patients. Apart from walk-in or self-referral patients, inter-hospital liaison referrals and those brought in by the police, many patients are referred by primary health physicians. Hence, we judged it important to examine the mental health literacy of these referring practitioners. The objective of this paper was to compare survey responses between trained psychiatrists in Woodbridge Hospital with primary physicians in Singapore, namely, general practitioners and government polyclinic doctors.

## Materials and Method

### *The Questionnaire*

We used a questionnaire developed by Jorm et al<sup>2</sup> which is based on vignettes describing patients with major depression and schizophrenia, with each vignette having only the minimum number of symptoms to satisfy ICD-10 and DSM-IV criteria for either diagnosis.

The depression vignette read: “Mr A is 30 years old. He has been feeling unusually sad and miserable for the last few weeks. Even though he is tired all the time, he has trouble sleeping nearly every night. Mr A doesn’t feel like eating and has lost weight. He can’t keep his mind on his work and puts off making any decisions. Even day-to-day tasks seem too much for him. This has come to the attention of Mr A’s boss who is concerned about his productivity.”

The schizophrenia vignette read: “Mr A is 24 and lives at home with his parents. He has had a few temporary jobs since finishing school but is now unemployed. Over the last six months he has stopped seeing his friends and has begun locking himself in his bedroom and refusing to eat with the

family or have a bath. His parents also hear him walking about in his bedroom at night while they are in bed. Even though they know he is alone, they have heard him shouting and arguing as if someone else is there. When they try to encourage him to do more things, he whispers that he won’t leave home because he is being spied upon by the neighbour. They realise he is not taking drugs because he never sees anyone or goes anywhere.”

Locally, we extended the questionnaire and developed the following vignette for mania: “Mr A is 27 and lives with his parents. He has been employed for most of the time since leaving school, but has recently left his job as a salesman. He has never taken any illicit drugs. His parents state that in the last 3 weeks he has been extremely active, requiring less sleep and not appearing tired, being over-talkative and disinhibited and, on occasions, quite irritable. He claimed to have invented a machine for curing cancer and wished to go to the US to sell it. When stopped by his parents he became violent, and they called the police”.

Based on these vignettes, respondents completed a questionnaire assessing diagnosis, the helpfulness of a range of interventions and medications and the outcome with or without professional help (with results of the latter to be reported in another paper). Basic demographic data, and data on the number of years and locality of practice were also sought, but returns were kept anonymous.

Another extension was to provide additional options to respect local cultural explanations of mental illness, and also to take into account available resources in Singapore. This was also to facilitate the survey of the general public in the third phase of the study. Hence, the diagnostic options included “mental weakness” and “being possessed”, and also “mania” to respect the additional vignette. The range of interventions, professional or non-professional, and resources were also extended to include, for example, “a Chinese or Malay medicine shop dispenser” and “acupuncture”.

### *The Samples*

For the psychiatrists, we distributed all 3 vignettes over fortnightly intervals in random sequence to each of the 33 trained psychiatrists present during the survey period in mid-1999, with verbal reminders to departmental heads. Whilst the Australian methodology involved respondents rating 1 vignette only, the small numbers of Singaporean psychiatrists necessitated requesting them to rate all vignettes, with intervals between to reduce any “memory” bias. Returns were kept anonymous via a return collection box and the response rate was about 70% (69 out of 99).

For the government polyclinic doctors, we sent out (with random selection of the 3 vignettes) questionnaires to each of the 151 listed doctors. A request was made to the head

of each zone, by telephone or letter, to encourage response. For the general practitioners, we sent out questionnaires to a randomly selected one-in-three sample from a register, excluding those with no listed clinic and those with specialist practices. To facilitate returns, a second questionnaire with the same vignette was later sent to each general practitioner. For both groups, we requested anonymous returns, via self-addressed envelopes, with an overall response rate of 33% being obtained for the 691 questionnaires distributed. Individual group response rates were 51% (77/151) for the polyclinic doctors and 35% (187/540) for the general practitioners.

### Statistical Analysis

We used the Mann-Whitney U test for statistical analysis of results.

## Results

### Profile of Survey Respondents (Table I)

Data in Table I show that the age of the general practitioners was widely distributed. By contrast, the polyclinic doctors were younger (mostly below 40 years) with the psychiatrists in the intermediate age group (80% aged between 30 and 50 years). Unlike the 2 other groups, there was a distinct male preponderance for the general practitioners.

The general practitioners were less likely than the polyclinic doctors to have received some form of psychiatric training (11% of the GPs had indicated “yes” in the questionnaire on whether they had received previous psychiatric training, as compared with 46% of the polyclinic doctors). One possible explanation for the higher training rate would be that many of the polyclinic doctors were Family Medicine trainees who had come through

Woodbridge Hospital for training, although the group age differences may reflect educational changes over time. All the psychiatrists would have had at least 3 years of postgraduate training and obtained a Masters degree.

The general practitioners mostly worked in Housing and Development Board (HDB) residential areas (69%), 17% worked in private residential areas and 14% in companies or factory practices.

### Diagnostic “Accuracy”

The accurate recognition of each disorder illustrated in the vignettes was ascertained by looking at the recorded options chosen from the following list: “stress”, “depression”, “schizophrenia/paranoid schizophrenia”, “mania”, “anxiety”, “mental weakness”, “physical weakness” and “being possessed”. The depression vignette was correctly “diagnosed” by 96% of the general practitioners, and 100% of the polyclinic doctors, as against 95% of the psychiatrists, where 5% of the latter group chose “stress” instead. For the schizophrenia vignette, the respective figures were 92%, 100% and 96%. Here, other diagnostic options of “physical weakness” (5%), “depression” and “mania” (2% each) were incorrectly chosen by the general practitioners. The psychiatrists here offered no specific alternative.

An important finding was that for the mania vignette, only 47% of the general practitioners and 72% of the polyclinic doctors (as against 100% of the psychiatrists) correctly identified the vignette. Many of the general practitioners chose the option of schizophrenia (43%), and some nominated depression (4%). By contrast, 17% of the polyclinic doctors nominated options of schizophrenia, while 6% each nominated “anxiety” and “other”.

### Judged Helpfulness of Various Resources

In the next section of the questionnaire, respondents were required to rate how helpful each intervention was in managing the patient described in the vignette. For each option, we have scored the data such that a score of 3 = helpful, 2 = neither and 1 = harmful. In Table II, the results have been tabulated to compare the combined groups of primary health physicians against the psychiatrists.

For all 3 conditions, both groups viewed medical doctors, in any setting, as highly likely to be helpful (with the mean scores approaching a maximum mean of 3.00). Of interest, psychiatrists more frequently rated polyclinic doctors as likely to be helpful than did the primary health physicians themselves (2.95 vs 2.70,  $P < 0.05$ ). As expected, both groups rated psychiatrists as more likely to be helpful for all 3 conditions. Views differed more with regards to the helpfulness of allied mental health professionals. Help from a counsellor, social worker or counselling service was

TABLE I: SOCIO-DEMOGRAPHIC DATA OF SURVEY RESPONDENTS

|                      | Percentage distribution |           |          |
|----------------------|-------------------------|-----------|----------|
|                      | GPs<br>%                | OPDs<br>% | PSY<br>% |
| Age distribution (y) |                         |           |          |
| <30                  | 1                       | 37        | 5        |
| 30-39                | 31                      | 53        | 58       |
| 40-49                | 32                      | 3         | 24       |
| 50-59                | 21                      | 7         | 9        |
| ≥60                  | 15                      | 0         | 5        |
| Sex                  |                         |           |          |
| Male                 | 77                      | 43        | 57       |
| Female               | 23                      | 57        | 43       |

GP: general practitioner; OPD: outpatient polyclinic doctor; PSY: psychiatrist

commonly judged as likely to be helpful for depression and schizophrenia, but less so for mania. Psychiatrists were significantly less likely to rate a counsellor as helpful in managing mania (2.09 vs 2.41,  $P < 0.05$ ), perhaps viewing mania as predominantly a biological disorder. Seeing a psychologist was highly likely to be judged by both groups to be helpful for the depressed patient, but somewhat less so for the schizophrenic or manic patients.

The primary health physicians generally viewed close family members and friends as resources of likely value in helping patients with each of the 3 diagnoses. Psychiatrists, however, significantly less often judged these persons as likely to be helpful for manic or schizophrenic patients. Both groups generally judged a Chinese or Malay medicine shop dispenser as likely to be unhelpful, with the primary physicians returning a significantly lower helpfulness score than psychiatrists for schizophrenia. A religious leader received a moderate rating of likely helpfulness by both groups for mania and schizophrenia, and a higher rating of helpfulness for depression.

### *Judged Helpfulness of Various Medications (Table II)*

Antidepressants were generally recognised by both comparison groups as likely to be helpful for the depressed person, and of intermediate likely helpfulness for schizophrenia. For mania, there was a significant difference in opinion about the use of antidepressants, with the psychiatrists rating them as quite unlikely to be helpful compared to the primary physicians. Antipsychotics or major tranquilisers were viewed similarly by both groups as likely to be helpful for mania and schizophrenia, but as not likely to be helpful in depression.

Beliefs about the use of mood stabilisers were more varied. For depression, the psychiatrists were significantly more likely to rate them as helpful. For mania, although both groups recognised the helpfulness of mood stabilisers, the psychiatrists more frequently endorsed them as likely to be helpful. Conversely, for schizophrenia, the primary health physicians more frequently rated these medications as likely to be helpful than did the psychiatrists.

TABLE II: MEAN JUDGED HELPFULNESS SCORES GENERATED BY COMBINED GP/OPD GROUP OF DOCTORS COMPARED TO MEAN SCORES GENERATED BY PSYCHIATRISTS FOR VARYING RESOURCES AND MEDICATIONS

|                                            | Depression<br>GP/OPD PSY |         | Mania<br>GP/OPD PSY |         | Schizophrenia<br>GP/OPD PSY |         |
|--------------------------------------------|--------------------------|---------|---------------------|---------|-----------------------------|---------|
| Resources                                  |                          |         |                     |         |                             |         |
| An A&E doctor                              | 2.91                     | 2.74*   | 2.86                | 2.70    | 2.82                        | 2.84    |
| A polyclinic doctor                        | 2.70                     | 2.95*   | 2.75                | 2.87    | 2.80                        | 2.84    |
| A general practitioner                     | 2.97                     | 2.94    | 2.91                | 2.87    | 2.92                        | 2.80    |
| A pharmacist                               | 1.89                     | 2.00    | 1.81                | 2.00    | 1.93                        | 2.04    |
| A Chinese physician                        | 1.57                     | 1.84    | 1.30                | 1.65**  | 1.48                        | 1.68    |
| A counsellor                               | 2.73                     | 2.53    | 2.41                | 2.09*   | 2.48                        | 2.28    |
| A social worker                            | 2.47                     | 2.65    | 2.22                | 2.35    | 2.41                        | 2.46    |
| A counselling service                      | 2.70                     | 2.74    | 2.29                | 2.30    | 2.33                        | 2.36    |
| A traditional healer                       | 1.29                     | 1.68*   | 1.16                | 1.36*   | 1.22                        | 1.67*** |
| A psychiatrist                             | 2.96                     | 3.00    | 2.99                | 2.91    | 2.99                        | 3.00    |
| A psychologist                             | 2.78                     | 3.00*   | 2.49                | 2.57    | 2.54                        | 2.68    |
| Close family members                       | 2.66                     | 2.68    | 2.52                | 2.22*   | 2.56                        | 2.29*   |
| Close friends                              | 2.70                     | 2.68    | 2.45                | 2.17*   | 2.46                        | 2.17*   |
| A Chinese or Malay medicine shop dispenser | 1.34                     | 1.58    | 1.20                | 1.43    | 1.25                        | 1.63**  |
| A religious leader                         | 2.44                     | 2.42    | 2.01                | 2.00    | 2.14                        | 2.00    |
| Medications                                |                          |         |                     |         |                             |         |
| Vitamins and minerals                      | 2.19                     | 2.16    | 1.99                | 2.00    | 2.00                        | 2.00    |
| Tonics or herbal medicines                 | 2.05                     | 1.95    | 1.84                | 1.91    | 1.90                        | 1.88    |
| A purging medicine                         | 1.19                     | 1.42    | 1.17                | 1.30    | 1.30                        | 1.44    |
| Antidepressants                            | 2.93                     | 2.79    | 2.06                | 1.26*** | 2.20                        | 1.96    |
| Antibiotics                                | 1.39                     | 1.68*   | 1.36                | 1.61*   | 1.51                        | 1.72    |
| Mood stabilisers                           | 2.22                     | 2.79*** | 2.71                | 2.96*   | 2.30                        | 1.96*   |
| Sleeping pills                             | 2.08                     | 2.26    | 2.38                | 2.74*   | 2.23                        | 2.58*   |
| Anti-psychotic or major tranquilisers      | 1.80                     | 2.00    | 2.96                | 2.88    | 2.90                        | 3.00    |
| A benzodiazepine                           | 2.27                     | 2.58    | 2.48                | 2.87**  | 2.53                        | 2.64    |

GP/OPD: general practitioner/outpatient polyclinic doctor; PSY: psychiatrist

\* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$

Using a benzodiazepine was sometimes viewed as helpful in all 3 conditions amongst the 2 professional groups. The only significant difference was for its use for mania, where psychiatrists more often rated benzodiazepines as likely to be helpful. The primary health physicians did not view sleeping pills as likely to be of help in managing any of the disorders, but the psychiatrists rated them significantly more often as likely to be of help for mania or schizophrenia.

As to be expected, both comparison groups seldom viewed alternative medications like vitamins, minerals, tonics and herbal medicines as likely to be helpful.

### *Judged Helpfulness of Various Activities and Therapies*

As shown in Table III, the psychiatrists were significantly more conservative than the primary health physicians about judging the likely helpfulness of being more active physically for all 3 conditions. Both groups agreed on the likely helpfulness of getting persons, with either of the 3 conditions, to read about people with similar problems. Both groups also agreed on the likely harmfulness of all 3 patient groups being kept at home, with the primary physicians significantly more likely to rate this as harmful than the psychiatrists.

The primary health physicians viewed attending courses on relaxation as likely to be helpful for all 3 conditions, especially depression, with the psychiatrists being less likely to endorse this strategy. For all 3 conditions, both comparison groups overwhelmingly agreed that cutting

out alcohol was likely to be helpful (2.49 to 2.74), and that seeking treatment from a traditional healer was unlikely to be helpful. Other areas of mutual agreement as likely to be helpful were in moderate ratings for having an occasional alcoholic drink to relax, going on a special diet and acupuncture.

The views towards therapy modalities were varied. The primary health physicians considered psychotherapy as likely to be helpful for all 3 conditions, with the psychiatrists rating it as significantly less likely to be helpful for mania and schizophrenia. Hypnosis was given similar moderate helpfulness ratings for all conditions by the primary physicians, but generally rated as likely to be harmful by the psychiatrists, especially for mania and schizophrenia. Electroconvulsive therapy (ECT) drew markedly different views for depression and mania, with the primary health physicians scoring its likely helpfulness at a lower level than the psychiatrists, and the psychiatrists supporting its use, especially for mania.

Both comparison groups considered admission to a psychiatric ward in a general hospital or to a psychiatric hospital as likely to be helpful for schizophrenia, but the primary health physicians less frequently viewed these interventions as likely to be helpful for mania and for depression.

Rest was given moderate helpfulness ratings for depression and mania by both groups, but considered less likely to be helpful for schizophrenia. Interestingly, the primary health physicians were significantly more likely to

TABLE III: MEAN JUDGED HELPFULNESS SCORES GENERATED BY COMBINED GP/OPD GROUP OF DOCTORS COMPARED TO MEAN SCORES GENERATED BY PSYCHIATRISTS FOR VARYING ACTIVITIES AND THERAPIES

| Activities and therapies                             | Depression<br>GP/OPD PSY |         | Mania<br>GP/OPD PSY |         | Schizophrenia<br>GP/OPD PSY |         |
|------------------------------------------------------|--------------------------|---------|---------------------|---------|-----------------------------|---------|
| Becoming physically more active                      | 2.78                     | 2.47**  | 2.17                | 1.39*** | 2.45                        | 2.12**  |
| Reading about people with similar problems           | 2.80                     | 2.79    | 2.40                | 2.57    | 2.46                        | 2.48    |
| Being kept at home                                   | 1.05                     | 1.53*** | 1.09                | 1.39**  | 1.12                        | 1.36**  |
| Getting out and about more                           | 2.68                     | 2.21*** | 2.09                | 1.48*** | 2.37                        | 2.21    |
| Attending courses on relaxation                      | 2.80                     | 2.53**  | 2.43                | 2.13    | 2.36                        | 1.88*** |
| Cutting out alcohol                                  | 2.59                     | 2.61    | 2.66                | 2.74    | 2.49                        | 2.56    |
| Treatment from a traditional healer                  | 1.40                     | 1.63    | 1.25                | 1.43    | 1.36                        | 1.40    |
| Psychotherapy                                        | 2.75                     | 2.63    | 2.64                | 1.91*** | 2.72                        | 1.76*** |
| Taking a holiday                                     | 2.76                     | 2.33*** | 2.28                | 1.83**  | 2.13                        | 1.88*   |
| Hypnosis                                             | 2.17                     | 1.94    | 2.15                | 1.50*** | 2.19                        | 1.33*** |
| Admitted to a psychiatric ward of a general hospital | 2.01                     | 2.58**  | 2.64                | 2.96*   | 2.86                        | 2.96    |
| Admitted to a psychiatric hospital                   | 1.96                     | 2.47**  | 2.68                | 2.96*   | 2.86                        | 2.96    |
| ECT                                                  | 1.76                     | 2.58*** | 2.23                | 2.83*** | 2.30                        | 2.40    |
| Having a rest                                        | 2.56                     | 2.47    | 2.33                | 2.39    | 2.15                        | 2.21    |
| Occasional alcoholic drink to relax                  | 1.80                     | 1.95    | 1.45                | 1.43    | 1.61                        | 1.76    |
| Acupuncture                                          | 1.86                     | 1.94    | 1.90                | 1.83    | 1.93                        | 1.82    |
| A special diet                                       | 1.80                     | 1.74    | 1.92                | 1.74    | 1.92                        | 1.79    |

GP/OPD: general practitioner/outpatient polyclinic doctor; PSY: psychiatrist

\* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$

view taking a holiday as likely to be helpful than did the psychiatrists.

## Discussion

We note relatively low percentages of return for the general practitioners and polyclinic doctors, which we assume reflected the time intrusion on busy practitioners. The response rate of 33% by the general practitioners was low, but perhaps not surprising in light of random recruitment, most general practitioners being likely to be busy in their practices, and also no incentives were provided for participation. The response rate was slightly better for the polyclinic doctors (51%), and might have reflected non-respondents receiving reminders through the heads of each clinic. Understandably, the findings may not be representative. Nevertheless, this is the first local study surveying primary physicians' understanding of mental disorders.

Secondly, despite varying age, sex ratio and training experiences in mental health problems, we consolidated the 2 primary health practitioner subgroups in this paper; this may have obscured some differences between the 2 subgroups. The results identified a number of significant differences in mental health literacy between primary health physicians and psychiatrists. Perhaps the most glaring difference was in the diagnostic accuracy of mania. Whilst at least 90% of the primary physicians and psychiatrists correctly identified the depression and schizophrenia vignettes, only half of the general practitioners and three-quarters of the polyclinic doctors correctly identified the mania vignette. This is a concern, as a manic patient who is treated primarily by a general practitioner could risk being managed as having a schizophrenic illness instead, when the managements of these 2 conditions are usually quite different over time. Against that management concern, helpfulness data indicate that such patients would have been likely to have been referred to a psychiatrist, when the presumptive diagnosis would presumably be modified. Secondly, this variable diagnostic accuracy between the 2 comparison groups may have confounded the survey results to a degree, with the results for mania being distorted by that percentage of primary health physicians who recommended management strategies "as if" they were for schizophrenia.

In the Australian study,<sup>3</sup> depression was accurately diagnosed by 99% of the general practitioners and 97% of the psychiatrists; whilst schizophrenia was accurately diagnosed by 78% of the former and 79% of the psychiatrists. These results showed both Australian and Singaporean primary practitioners were similarly accurate in identifying depression, but the Singaporean doctors were more accurate in identifying schizophrenia (more than 90% gave accurate

diagnosis) than the Australian practitioners. The Australian practitioners were not given the mania vignette; hence, a comparison on this is not available. Nevertheless, the results argue for a review of educational programmes for undergraduates and primary practitioners to ensure that there is adequate information provided on the identification and management of bipolar disorder and mania.

The primary health physicians considered close family members and friends as a helpful resource for all conditions, whilst the psychiatrists held this view only for the depressed patient. This may reflect the psychiatrists favouring a biological model for psychotic disorders, whilst the primary health physicians may have judged from the more holistic viewpoint of a "family physician".

The primary physicians essentially judged antidepressants as moderately likely to be helpful for the mania vignette, whilst the psychiatrists rated antidepressants as likely to be harmful, presumably reflecting the latter's knowledge about the capacity of antidepressants to both induce and worsen the course of mania. This would be of clinical importance, since, as mentioned earlier, a large proportion of the primary health physicians might not only misdiagnose a manic patient, but also incorrectly prescribe antidepressants. The primary physicians seldom rated mood stabilisers as helpful for depression, whilst the psychiatrists were highly likely to endorse their helpfulness. This may have been because the primary physicians viewed the depression illustrated in the vignette as a likely single and mild episode, reflecting their experience in the community. By comparison, the psychiatrists would have been exposed to more severe cases in the tertiary setting, and hence the depression vignette illnesses would possibly conjure an image of a recurrent major depressive illness possibly benefiting from mood stabilisers. The psychiatrists were also more affirmative than the primary health physicians about the likely helpfulness of benzodiazepines and sleeping pills in mania, and the helpfulness of sleeping pills in schizophrenia. The psychiatrists may have been influenced by their utility in a hospital setting, while the primary health physicians may have rated on the basis of justifiable concerns about their risk of inducing dependence.

The primary health physicians were in support of the likely helpfulness of various non-specific strategies, such as becoming physically more active, getting out and about, and attending relaxation courses. In contrast, the psychiatrists were more guarded and believed that the former 2 strategies may be harmful for the manic patient, perhaps reflecting recognition that overactivity is a feature of mania, or again such a difference could be a result of the primary health physicians misdiagnosing mania. The primary health physicians were also inclined to view psychotherapy and hypnosis as of some help for all

conditions, whereas the psychiatrists scored these as harmful for the psychotic conditions. This may reflect the lack of specificity in views about managing mental disorders amongst non-specialist clinicians. The primary health physicians also believed that ECT was harmful in depression and of little use in mania, whilst the psychiatrists supported its use in both conditions. This would be an expected reflection of the general prejudice against the use of ECT amongst non-psychiatrists.

The psychiatrists judged hospitalisation, whether to a psychiatric hospital or to a psychiatric ward in a general hospital, as helpful for all 3 conditions; whilst the primary health physicians viewed hospitalisation as helpful only for psychotic conditions. This may be because most of the depressive patients seen by primary health physicians would have milder conditions, whilst the psychiatrists would be more likely to see the more severe cases, hence, the skew in their impressions. Similarly, this explanation could hold for the primary health physicians judging a holiday as helpful for all 3 conditions in comparison to the psychiatrists.

There were few differences in the beliefs of both groups concerning the lack of help with alternative medications like vitamins, tonics, herbal medicines and purging medicines. So too were the views about the possible harm of seeking treatment from a traditional healer, going for acupuncture or going on a special diet. Both comparison groups also shared similar negative opinions about the helpfulness of traditional medicine practices and religious interventions. This implies that most of the surveyed clinicians favoured a western and medical model for managing mental disorders. This has been shown to be similar to the findings on judged helpful interventions in the Australian survey.<sup>5</sup>

Results suggest areas of some utility in any review of undergraduate and practitioner training programmes, and particularly with regards to the diagnosis of some psychiatric conditions (e.g. mania), the utility and specificity of psychotropic drugs and the relevance and importance of varying specific and non-specific approaches to separate psychiatric disorders. The vignette approach adopted here may also serve as a useful training and educational programmes.

## Conclusion

This study has highlighted some significant differences in the mental health literacy amongst the primary health

physicians and public sector psychiatrists in Singapore. Many of these would have important clinical implications in the care of psychiatric patients from primary level to tertiary level care.

Such information helps identify crucial target areas in planning the education of health care givers to achieve a higher level of mental health literacy, and hence, to provide better patient care. Presently, the medical undergraduate studies include a 6-week psychiatric rotation which includes a course exam. There are also Continuing Medical Education programmes on psychiatry which are targeted for primary health care practitioners. The authors hope to encourage participation in such programmes in order to improve the mental health literacy level amongst practitioners in Singapore. We recognise the importance of educating primary health care practitioners in the identification and diagnosis of mental disorders, particularly bipolar disorder, and on increasing awareness of treatment modalities available.

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