

# Survey of attitudes of mental health professionals in Singapore towards at-risk mental states

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## ABSTRACT

**Introduction:** Schizophrenia is a severe, chronic mental illness with a worldwide prevalence of about one percent. It is possible to define at-risk mental states (ARMS) that predict conversion to schizophrenia in up to 40 percent of help-seeking individuals within a year of screening. Treatment of ARMS is controversial due to difficulties with diagnosis and uncertainties of treatment effectiveness. There is currently no consensus among psychiatrists in Singapore or internationally, regarding the diagnosis of ARMS, or its treatment. This survey was conducted to assess current attitudes of Singaporean psychiatrists towards ARMS.

**Methods:** An anonymous survey containing a clinical vignette and questions related to the diagnosis and management of ARMS was sent out to all registered psychiatrists and psychiatric trainees in Singapore.

**Results:** There was a response rate of 62.1 percent (87/140). 60.9 percent of respondents were fully-trained psychiatrists. 44.8 percent versus 43.7 percent of respondents diagnosed ARMS versus psychosis, respectively. 74.4 percent (29/39) of respondents who diagnosed ARMS would treat the patient with active management rather than watchful waiting. 64.4 percent felt that there was no consensus regarding the management of ARMS. There was no significant relationship between responses and age, gender, training or place of practice.

**Conclusion:** There is currently clinical equipoise with regard to both diagnosis and management of ARMS in Singapore. Most psychiatrists would manage ARMS actively rather than with watchful waiting.

**Keywords:** at-risk mental states, chronic mental illness, clinical equipoise, psychosis, schizophrenia

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## INTRODUCTION

Schizophrenia is a serious psychotic condition characterised by delusions, hallucinations and disordered behaviour. The Global Burden of Disease lists schizophrenia among the top ten contributors to healthcare burden and disability around the world.<sup>(1)</sup> Beyond the staggering tangible costs to society (estimated to be USD 32.5 billion in the United States in 1990), the intangible costs to the patient and caregivers are similarly substantial. Most patients who develop schizophrenia experience a prodromal phase<sup>(2-3)</sup> which involves attenuated psychotic symptoms and a worsening of premorbid functioning. The schizophrenia prodrome is essentially a retrospective diagnosis made definitively only after individuals develop schizophrenia. It is possible to identify individuals with at-risk mental states (ARMS) and a high likelihood of onset of schizophrenia within a brief follow-up period.<sup>(4)</sup> Up to 40% of help-seeking individuals meeting the criteria for ARMS<sup>(4)</sup> converted to psychosis within 12 months of being screened. This represents an incidence several thousand times the age-adjusted incidence rate.

The possibility of improving the outcome in schizophrenia<sup>(5)</sup> or delaying/preventing the onset<sup>(6)</sup> of the disorder via early detection of ARMS could result in both large cost savings and a reduction in distress to the patient and his caregivers.<sup>(7)</sup> There is also evidence that early detection and treatment programmes can reduce the suicide risk at first contact.<sup>(8)</sup> Decreasing the duration of untreated psychosis (DUP)—defined as the time between the onset of the first psychotic symptoms and the first adequate treatment—has also been shown to decrease morbidity, and result in improved quality of life for patients and their caregivers.<sup>(9)</sup>

There are two major caveats to this scenario. The first is that current assessment instruments have only been validated in clinical populations, and their psychometric properties are preliminary.<sup>(10)</sup> While it may be possible to

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correctly identify up to 40% of patients with ARMS who will eventually convert to psychosis, that leaves 60% of the ARMS population who may never convert to psychosis, and may hence be unnecessarily exposed to medication and its side effects, or be exposed to the stigma and discrimination that comes with bearing a label of mental illness. The other caveat is that it is still uncertain whether treatment of ARMS may prevent full blown psychosis or improve outcomes in schizophrenia.<sup>(11)</sup> This is especially important as the transition rates from ARMS to schizophrenia are not clear, due to the heterogeneity of sample subgroups in various studies.<sup>(12)</sup>

The ethical principles in treating schizophrenia in the mid 1990s were to delay antipsychotics until the diagnosis was assured.<sup>(13)</sup> Antipsychotics were seen as palliative and not curative, and the side effects could be serious and permanent (e.g., tardive dyskinesia). With evidence that “indicated treatment” of patients with early psychosis during the “window of deterioration” improved outcomes,<sup>(9)</sup> there was a gradual shift in treatment ethics towards earlier treatment. This would hopefully arrest the unknown neurobiological processes that create lifelong irreversible deficits in the mental and emotional capacity of patients with schizophrenia. Another factor that led to a paradigm shift was the introduction of new atypical antipsychotics, such as Clozapine, Risperidone and Olanzapine, that have less extra-pyramidal side effects, akathisia, neuroleptic malignant syndrome and tardive dyskinesia than the typical antipsychotics. However, the metabolic side effects of the atypical antipsychotics are substantial.

There is currently no consensus among Singapore psychiatrists or internationally, with regard to the diagnosis of ARMS and its management. However, there is a rising awareness of ARMS and early psychosis with the establishment of the Early Psychosis Intervention Programme (EPIP) in the Institute of Mental Health (IMH). EPIP has adopted a risk reduction approach<sup>(14)</sup> towards schizophrenia, and increasingly, patients with ARMS, rather than psychosis, are being seen by Singapore psychiatrists, who must manage these patients with the best current evidence. We conducted a survey of Singapore psychiatrists and psychiatric trainees to assess the current attitudes towards ARMS and its diagnosis and management.

## METHODS

The study was conducted from July 2006 to September 2006. The study was approved by the IMH Clinical Research Committee and the National Healthcare Group Ethics Board. The target study population was all registered Singapore psychiatrists and psychiatry trainees. The list of

potential participants was obtained from the Singapore Ministry of Health’s (MOH) website and the Graduate School of Medicine. There were 108 registered psychiatrists in Singapore, with 100 currently practising in Singapore, and who have a mailing address on the MOH website. There were 17 advanced specialty trainees (AST) and 23 basic specialty trainees (BST). The eight psychiatrists who were not practising in Singapore were excluded from the study, making the number of eligible participants 140.

Study documents were mailed to all eligible psychiatrists and psychiatry trainees. They included a cover letter stating the aim of the survey, a one-page survey form and a separate postcard with the participant’s name. The participant was asked to take part in this voluntary survey and fill in the survey form and mail back both the survey form, and postcard separately. The postcard allowed the investigators to keep track of respondents while maintaining anonymity. Three sets of study documents were mailed to non-respondents to increase the participation rate.

The survey form had questions to assess the participant’s demographics, level of training, subspecialty interest and place of practice. It contained a clinical vignette based on a recent clinical case discussion<sup>(15)</sup> on the schizophrenia prodrome. The vignette is reproduced below: *An 18-year-old Chinese gentleman has been brought by his parents to see you for an assessment of his change in behaviour. The parents report that the patient’s school grades have been deteriorating over the past six months and they feel the patient is more suspicious, withdrawn and sad. Otherwise the parents have not observed any change in his peer relationships and his self-care is good. When alone with the psychiatrist, the patient admits he thinks his classmates are looking and talking about him in particular and can possibly read his mind. He also feels that he can influence their actions simply by thinking about it. His speech is otherwise relevant and forthcoming and he denies perceptual disturbances. There is no family history of psychiatric disorder. His affect is mildly depressed and your assessment rules out organic and drug-related aetiologies.*

ARMS was defined using the following criteria:<sup>(4)</sup>

1. Attenuated psychotic symptoms (magical thinking, ideas of reference, speech disorganisation with a frequency of several times a week for at least one week).
2. Brief limited intermittent psychotic symptoms (BLIPS) (Psychotic symptoms emerging in the recent past that last less than one week).
3. Genetic risk with functional decline (first-degree relative with a history of any psychotic disorder or the presence of schizophrenia spectrum disorder or

schizotypal personality disorder with a decline in schizotypal personality disorder with a decline in function of 30 points or more on the Global Assessment of Function).

Following the vignette, participants were asked if they would diagnose ARMS, psychosis, no diagnosis or other diagnosis for the hypothetical patient in the vignette. Subsequent questions assessed the participant's attitudes towards management, screening and research of ARMS. All analyses were done using the Statistical Package for Social Sciences version 14.0 (SPSS Inc, Chicago, IL, USA). Comparisons between subgroups were done using chi-square and Fisher exact tests, as appropriate. Two-tailed tests of significance were used and statistical significance was set at  $p < 0.05$ .

**RESULTS**

87 (61.2%) psychiatrists and psychiatry trainees responded to the survey. The demographics of the respondents are described in Table I. 60.9% of the respondents were fully-trained psychiatrists. There was a slightly higher proportion of public sector doctors responding, as compared to the national average (78.2% vs. 73.6%). 44.8% (39/87) of respondents diagnosed the patient with ARMS and 43.7% (38/87) diagnosed him with psychosis. Only 2.3% (2/87) declined from giving a diagnosis, and 9.3% (8/82) chose other diagnoses like depression. There was no significant relationship between diagnosis and age, gender, training and place of practice.

Of those respondents who diagnosed the patient with ARMS, 74.4% (29/39) chose to treat the patient actively rather than with watchful waiting. Of these 86.2% (25/29) would treat the patient with atypical antipsychotics and only 13.8% (4/29) would treat, with typical antipsychotics. 13.8% (4/29) would treat with antidepressants and 10.3% (3/29) with anxiolytics. Only 27.6% (8/29) would include psychosocial therapies in active treatment. 34.5% (10/29) would treat the patient till symptom resolution (Fig. 1). For

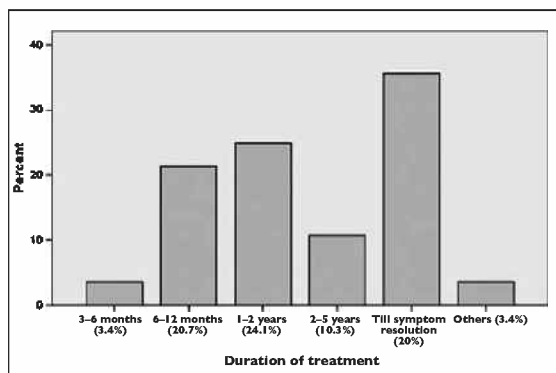
respondents who elected to observe the patient (10/39), 40% (4/10) would observe for a 1–2 year duration (Fig. 2). There was no significant relationship between treatment type/duration and age, gender, training and place of practice.

The respondents who diagnosed the patient with psychosis all treated the patient actively. 86.8% (33/38) would treat the patient with atypical antipsychotics, and only 18.4% (7/38) would treat with typical antipsychotics. 10.5% (4/38) would treat with antidepressants and 2.6% (1/38) would treat with anxiolytics. Only 26.3% (10/38) would include psychosocial therapies. There was no significant relationship between treatment type and age, gender, training and place of practice. 49.4 % (43/87) of respondents would advocate screening of ARMS in at-risk groups (e.g. polytechnic and university students, National Servicemen). 35.6% (31/87) would not and 14.9% (13/87) were undecided. There was no significant relationship between screening choice and age, gender, training, place of practice or diagnosis of the vignette.

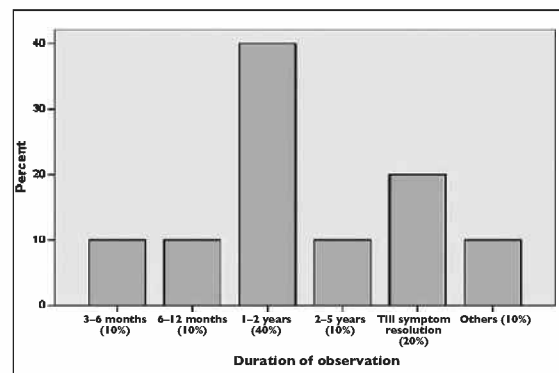
64.4% (56/87) of respondents felt that there was no consensus about the management of ARMS, while 14.9% (13/87) felt that it should be actively treated and 16.1% (14/87) felt it should be closely monitored. No significant relationships were found between consensus and age, gender, training, place of practice or diagnosis of the vignette. When it came to which research was the most urgent, 39.1% (34/87) of respondents felt that the natural history of ARMS needed to be elucidated and 34.5% (30/87) felt that treatment effectiveness and side effects of antipsychotic medication needed to be established.

**DISCUSSION**

The most striking result of the survey is the almost even split between the diagnosis of ARMS and psychosis, underscoring the uncertainty regarding the diagnosis and management of ARMS and demonstrating the clinical equipoise the psychiatric community has towards ARMS.



**Fig. 1** Bar chart shows the duration of active treatment of ARMS.



**Fig. 2** Bar chart shows the duration of observation of ARMS.

**Table 1 . Demographics of respondents.**

Demographics	No. (%)
Age (years)	
20–29	16 (18.4)
30–39	34 (39.1)
40–49	22 (25.3)
50–59	7 (8.0)
≥ 60	7 (8.0)
(1 missing data)	
Gender	
Male	53 (60.9)
Female	33 (37.9)
(1 missing data)	
Training	
Basic specialty trainee	18 (20.7)
Advanced specialty trainee	14 (16.1)
Associate consultant	6 (6.9)
Consultant	18 (20.7)
Senior consultant	29 (33.3)
(2 missing data)	
Place of practice	
Public	68 (78.2)
Private	16 (18.4)
(2 missing data)	

This is also mirrored in the removal of the tentative symptom criteria for the schizophrenia prodrome in DSM-III-R from DSM IV. Current assessment instruments have only been validated in clinical populations and their psychometric properties are preliminary.<sup>(10)</sup> Two major traditions in the detection of ARMS prevail, one with a Positive and Negative Syndrome Scale (PANSS) derived approach to tap late prodromal symptoms, the other with a Basic Symptoms approach that taps early prodromal symptoms. Both neglect negative symptoms and utilise non-specific symptoms, making sensitive and specific predictions challenging.

The other notable finding is the strong preference for atypical antipsychotics in the treatment of both ARMS and psychosis (74.4% and 86.8%, respectively). The recent CATIE<sup>(16)</sup> trial has provided evidence that certain atypical antipsychotics (e.g., Olanzapine) may be more effective in the treatment of schizophrenia. A meta-analysis has also shown the superior efficacy of some atypical antipsychotics over typicals.<sup>(17)</sup> However, the recent CUtLASS 1 study has cast doubt about the relative superiority of atypical antipsychotics demonstrated in CATIE, by suggesting that there is no superiority of atypical antipsychotics in improving quality of life for patients with schizophrenia.<sup>(18)</sup> Atypical antipsychotics are also increasingly recognised to increase the risk of metabolic side effects like hyperlipidaemia.<sup>(19)</sup> There is also evidence that early intervention may improve

short- but not long-term outcomes.<sup>(20)</sup> This suggests that local treatment preferences may not reflect current evidence-based research findings. A related point is the low preference of psychosocial treatments (27.6%) and antidepressants (13.8%) or anxiolytics (10.3%) for ARMS. The diathesis-stress model<sup>(21)</sup> suggests that environmental stressors (biological or psychosocial) may potentiate the expression of schizophrenia in vulnerable patients. Primary or secondary prevention may be able to reduce the conversion of ARMS to schizophrenia.<sup>(22)</sup> Preliminary data collected during Phase I of the Hillside Hospital Recognition and Prevention (RAP) programme from a subgroup of 27 adolescents and young adults considered to be prodromal for schizophrenia has suggested that treatment with selective serotonin reuptake inhibitors (SSRI) was as effective as with antipsychotics in improving overall level of functioning.<sup>(12)</sup> Biopsychosocial intervention programmes have also shown some effect in reducing the progression of ARMS to psychosis.<sup>(23)</sup> This finding would support the need for increased awareness of alternative treatment modalities for ARMS.

Despite the controversy surrounding treatment of ARMS, a large majority of local clinicians (74.4%) would treat ARMS actively. One concern with such active management is that long-term longitudinal naturalistic studies of ARMS population is still lacking. What proportion will eventually convert to schizophrenia and in what time frame are still questions that require further research. There is the danger of overenthusiastic early intervention for patients who may progress to early remission without the need for drug treatment. The World Health Organisation international outcome study demonstrated that 15% of those presenting with a schizophrenia-like illness in developed world centres completely recovered within four months and stayed well for two years.<sup>(24)</sup> Treating this subset of patients may erroneously convert them to chronic psychiatric patients.

The last significant finding from the survey is that 49.4% of respondents would advocate screening of at-risk groups. This suggests a willingness to aggressively screen and treat individuals with ARMS. However, caution should be advised as the stigma of a psychiatric label is significant, and hinders recovery and remission. There is also significant distress to the patient's caregivers, who may experience stigma by association. A recent book, entitled "Shunned" by Graham Thornicroft, summarises the systematic discrimination of patients with mental illness by friends, family, neighbours, government/private sector services and healthcare providers in the fields of employment, housing, medical care, insurance, recreation and the media.<sup>(25)</sup>

Ultimately, ARMS represents the potential for

prevention in psychiatry. This concept is new and indicates a paradigm shift in thinking. While once psychiatrists primarily made post hoc diagnoses and treatments, we can now identify individuals with substantial risks of developing schizophrenia. The question then becomes one of risks (medication side effects) versus benefits (protection from unmonitored and untreated schizophrenia) of treatment. While doctors abide by the dictum of "first do no harm", this does not mean not treating or conducting research on ARMS, as convincingly argued by McGlashan in a recent letter.<sup>(26)</sup> A fitting analogy is the treatment of hyperlipidaemia with medication, where the strategy is to treat the risk (high lipids concentration) not disorder (coronary heart disease), and the vast majority of patients are false positives. Psychiatry is currently in a clinical equipoise with regard to ARMS and the respondents of this survey feel that both the natural history of ARMS and effective treatment were the most urgent areas of research needed in Singapore.

In conclusion, this survey represents the first attempt to establish the current attitudes of psychiatrists in Singapore with regard to ARMS, and has found that they are generally aggressive towards both screening and treatment. However, the concept of ARMS has yet to enter common usage and is at a clinical equipoise both internationally and locally. Urgent research is required to help patients and clinicians manage ARMS in an evidence-based manner.

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