

Assessing insight in schizophrenia:

East meets West

BALASUBRAMANIAN SARAVANAN, K. S. JACOB, SHANTHI JOHNSON, MARTIN PRINCE, DINESH BHUGRA and ANTHONY S. DAVID

Background Lack of insight has been observed in people with schizophrenia across cultures but assessment of insight must take into account prevailing illness models.

Aims To determine whether culturally specific and Western biomedical interpretations of insight and psychosis can be reconciled.

Method Patients with schizophrenia ($n=131$) were assessed during their first contact with psychiatric services in Vellore, South India. Patients' explanatory models, psychopathology and insight were investigated using a standard schedule translated into Tamil.

Results Supernatural explanations of symptoms were frequent. Some insight dimensions were weakly associated (inversely) with severity of symptoms whereas preserved insight was associated with anxiety, help-seeking and perception of change. Willingness to attribute symptoms to disease, in others and in one's self, but not to supernatural forces was strongly associated with insight.

Conclusions The relationship between insight, awareness of illness and other clinical variables is similar in South India to elsewhere. However, the assessment of insight might have failed to capture locally accepted explanatory frameworks. An inclusive conceptual model which emphasises help-seeking is recommended.

Declaration of interest None. Funding detailed in Acknowledgements.

Insight is a complex multidimensional construct which is shaped by individual psychology (i.e. motivation and denial) and the constraints of biology (as in cognitive impairment and anosognosia) and is influenced by social constructions of illness and culturally specific explanatory models (Amador & David, 2004). Lack of insight was found to be almost invariably associated with a diagnosis of acute schizophrenia across all countries and cultures surveyed within the World Health Organization International Pilot Study of Schizophrenia (Amador *et al*, 1991). Standardised tools for the assessment and quantification of insight have been developed over the past 15 years (e.g. the Schedule for the Assessment of Insight (SAI; David, 1990; Sanz *et al*, 1998) and the Scale to Assess Unawareness of Mental Disorder (SUMD; Amador *et al*, 1993)). These have been found to have clinical utility for diverse populations and patient groups worldwide, with little modification besides translation (Saravanan *et al*, 2003).

There is a consensus about the nature of insight emerging from systematic reviews and meta-analyses. For example, there is a weak but consistent inverse relationship between psychopathology and insight, with the exception of anxiety and low mood, which are positively associated with insight (Mintz *et al*, 2003; David, 2004). Intellectual ability, particularly executive functioning, seems to be related to insight (Keshavan *et al*, 2004; Morgan & David, 2004; Aleman *et al*, 2006). Another frequent observation is that patients are more able to recognise and label certain behaviours as the consequence of mental illness in others than they are the same behaviours in themselves (McEvoy *et al*, 1993; Swanson *et al*, 1995; Chung *et al*, 1997; Startup, 1997). However, some authors (Moodley & Perkins, 1993; Johnson & Orrell, 1995) have questioned what they regard as the Western conceptualisation of insight, arguing that it is overly biomedical and fails

to allow for social constructions and culturally appropriate explanatory models of mental illness (for a discussion see Saravanan *et al*, 2004).

In this study we investigated the effect of culture, psychopathology and other clinical variables on insight of patients with schizophrenia in South India to determine which aspects are common across cultures and which are culture-specific. We tested the following hypotheses: (a) the relationship between insight and psychotic and depressive symptoms is similar to that in Western populations assessed in the same way; (b) a tendency to ascribe illness to another rather than oneself is inversely related to insight; (c) explanatory models, elicited in a standardised manner, are independent of clinician-rated insight.

METHOD

Study site

This study was carried out in the Department of Psychiatry, Christian Medical College, Vellore, which is in the north central part of Tamil Nadu. The total area of the Vellore district is 4314.29 km² and is divided into 12 blocks with a total population of 3 026 432. The Department of Psychiatry and Community Health has worked within the Kaniyambadi Block for the past 40 years. The town of Vellore (10.54 km²) has a population of 175 061. The 100-bed hospital provides short-term care for patients with all types of psychiatric diagnoses from the town of Vellore and a much wider rural area beyond. The emphasis is on a multidisciplinary approach and eclectic care using a wide variety of pharmacological and psychological therapies. The hospital has a daily out-patient clinic in which 200–250 patients are seen. The study was approved by the ethics committees of the Christian Medical College, Vellore, and Institute of Psychiatry, London.

Sample

The study group consisted of patients with schizophrenia having their first contact with mental health services and living within a 100 km radius of the study site. Patients were carefully screened for a DSM-IV diagnosis of schizophrenia (American Psychiatric Association, 1994) and then interviewed at intake using the Structured Clinical Interview for DSM-III-R-Patient

Version (SCID-P; Spitzer *et al.*, 1990) to confirm the diagnosis. Patients with a primary diagnosis of substance use disorder, mood disorder or organic mental disorder were excluded. Patients meeting inclusion criteria and providing written consent were interviewed as soon as possible after the start of treatment for psychosis, with all patients assessed within a week of the onset of treatment. Patients were informed that the purpose of the study was to assess their level of awareness about their illness, but were unaware of the specific hypotheses. A semi-structured interview was used to elicit data regarding demographic characteristics (age, gender, marital status, religion, education, employment, duration of illness and economic data).

Assessments

All assessment instruments were independently translated into the local language (Tamil) by two health professionals. The vernacular version thus obtained was then back-translated into English by two different bilingual professionals. The four translators then arrived at a consensus on the final vernacular version. Content, semantic, technical and conceptual equivalence of the Tamil version of the instruments was examined regularly during the process of translation. Assessments were administered by a local research psychiatrist trained in their use.

Insight

The expanded version of the Schedule of Assessment of Insight (SAI-E; Kemp & David, 1997; Sanz *et al.*, 1998) was used for assessment of insight. This has been applied widely in Western and non-Western countries (Kulhara *et al.*, 1992; Aga *et al.*, 1995) and comprises questions to assess three dimensions of insight: awareness, relabelling of symptoms and adherence, plus a 'hypothetical contradiction' item added to evaluate the person's capacity to consider another's perspective. Each dimension comprises two or three questions which are scored on a 3-point scale from 0 (no insight) to 2 (good insight), with a maximum total score of 24. The supplementary question is scored from 0 to 4 and this is added to the total score. This expanded version also includes items on awareness of change, difficulties resulting from the mental condition and insight into key symptoms.

Explanatory model interview

The Tamil version of the Short Explanatory Model Interview (SEMI; Lloyd *et al.*, 1998; Joel *et al.*, 2003) was used to elicit patients' attributions of their presenting complaints; their previous help-seeking behaviour (including visiting a temple, a shamam/mantrawadi, a traditional healer, or a doctor); their causal models (e.g. previous deeds/karma, evil spirits, punishment by god, black magic, or disease); perceived consequences (change in the body or mind); and their expectations regarding the index consultation. The SEMI, which combines open-ended questions and a case vignette with a structured coding frame, has been used successfully in a variety of countries and cultures, including India (Manoharam *et al.*, 2001). The vignette described a young man with florid psychotic symptoms (see Appendix). Participants were asked the same range of questions regarding illness attribution for the vignette and the help-seeking they would advise for such a person.

Psychopathology

The Brief Psychiatric Rating Scale (BPRS; Ventura *et al.*, 1993) and the Global Assessment of Functioning (GAF; Endicott *et al.*, 1976) were used to assess psychopathology. The BPRS total score and a depression subscale (investigating guilt, low mood and suicidality) were utilised.

RESULTS

Over a 1-year recruitment period, 196 patients with schizophrenia attended the Department of Psychiatry, Christian Medical College, Vellore, and 188 met the entry criteria. Of these, 37 were excluded because the severity of psychopathology precluded an interview, 14 did not attend and 6 refused consent, yielding a final sample of 131 participants. Demographic and clinical characteristics of the sample are given in Table 1. The vast majority were Hindu, with a predominance of young men living in rural areas, who had received formal education but were unemployed. Data were analysed with the Statistical Package for the Social Sciences, version 10.0. Age, gender, years of education and length of illness were not significantly correlated with BPRS and SAI-E total scores. There was no significant difference in insight between

Table 1 Characteristics of 131 patients with schizophrenia

Characteristic	
Age, years: mean (s.d.)	29.5 (7.2)
Gender, n (%)	
Male	72 (55)
Female	49 (45)
Religion, n (%)	
Hindu	115 (87.8)
Muslim	4 (3.1)
Christian	11 (8.4)
Residence, n (%)	
Rural	105 (80.2)
Urban	26 (19.8)
Literacy, n (%)	
Illiterate	22 (16.8)
Read only	9 (6.9)
Read and write	100 (76.3)
Age at onset of illness, years: mean (s.d.)	27.8 (6.85)
Duration of illness, weeks: mean (s.d.)	95.5 (134.2)
Status, n (%)	
Involuntary patient	115 (87.8)
Voluntary patient	16 (12.2)
GAF score: mean (s.d.)	28.7 (8.19)
BPRS total score: mean (s.d.)	56.7 (5.2)
SAI-E total score: mean (s.d.)	4.7 (4.57)

GAF, Global Assessment of Functioning; BPRS, Brief Psychiatric Rating Scale; SAI-E, Schedule for the Assessment of Insight – Expanded Version.

patients from urban and rural areas (mean total SAI-E score 5.5. *v.* 4.5); however, patients who came voluntarily had significantly higher scores (mean 7.0, s.d.=6.6) than those who attended involuntarily (mean 4.3, s.d.= 4.1; $P=0.02$).

Insight and psychopathology

There was no significant correlation between BPRS total score and SAI-E total score (Pearson's $r=-0.13$, $P=0.1$), general awareness ($r=-0.05$) or treatment adherence sub-scales ($r=-0.15$). However, a significant negative correlation was observed between the relabelling dimension of the SAI-E and BPRS total score ($r=-0.2$, $P=0.04$). Of the individual items on the BPRS, anxiety showed the strongest (positive) correlation with SAI-E total score and with the illness awareness items ($r=0.25$ and 0.28 respectively, $P<0.01$).

Table 2 Relationship between insight and explanatory models variables

SEMI questions	Total number of responses	SAI-E total score Mean (s.d.)	F (P) ¹
Black magic			
Yes	94	4.1 (4.0)	9.0 (0.001)
No	26	7.7 (5.6)	
Not sure	11	2.5 (2.6)	
Previous deeds			
Yes	12	5.7 (4.8)	9.8 (0.001)
No	78	5.8 (5.0)	
Not sure	41	2.2 (1.9)	
Evil spirits			
Yes	22	3.6 (4.3)	6.7 (0.002)
No	80	5.7 (4.9)	
Not sure	29	2.5 (2.0)	
Punishment by god			
Yes	13	4.0 (2.7)	6.3 (0.003)
No	71	5.8 (4.9)	
Not sure	47	3.0 (3.8)	
Disease			
Yes	18	10.4 (6.1)	21.4 (0.001)
No	64	3.7 (3.4)	
Not sure	49	3.8 (3.8)	
Social dysfunction			
Yes	110	5.1 (4.8)	3.1 (0.05)
No	13	2.9 (2.5)	
Not sure	8	1.7 (1.4)	
Occupational dysfunction			
Yes	124	4.8 (4.6)	1.2 (0.3)
No	5	2.1 (2.5)	
Not sure	2	2.0 (2.8)	
Well-being affected			
Yes	103	5.4 (4.7)	6.1 (0.003)
No	8	2.1 (3.0)	
Not sure	20	2.1 (2.5)	

SEMI, Short Explanatory Model Interview; SAI-E, Schedule for Assessment of Insight – Expanded version.
 1. One-way analysis of variance (ANOVA).

Table 3 Factors associated with level of insight in schizophrenia¹

Variable	Unadjusted odds ratio (95% CI)	Adjusted odds ratio ² (95% CI)	P
Help-seeking (0=no, 1=yes)	5.64 (1.6–16.8)	4.9 (1.97–12.2)	0.001
Attribution to disease (0=no, 1=yes)	10.2 (3.4–30.3)	9.4 (3.1–29.0)	0.005
Attribution to black magic (0=no, 1=yes)	0.3 (0.12–0.73)	0.36 (0.12–0.94)	0.04
Awareness of change in body or mind (0=no, 1=yes)	8.8 (1.1–67.8)	9.7 (1.2–75.9)	0.03

SAI-E, Schedule for the Assessment of Insight – Expanded version.

- SAI-E total scores were dichotomised into high and low groups (with the median as the cut-off point).
- Adjusted using conditional logistic regression with gender, age, years of schooling, location of residence (rural v. urban) and marital status (currently married v. not currently married).

Explanatory models

Table 2 shows the relationship between insight and responses to the SEMI summarised according to major theme. The 18 patients who endorsed a disease explanation had significantly higher scores on the SAI-E, indicating greater insight. Most patients acknowledged social (but not occupational) dysfunction and that their well-being had been affected; and these had higher insight scores than those who did not. There was a significant inverse correlation between non-biomedical beliefs and insight scores. Patients who held such beliefs, most commonly regarding black magic ($n=94$), but also those who attributed their problems to evil spirits, previous deeds and punishment by god, tended to have lower insight scores. Patients were frequently unsure or unable to give a definite attribution of their illness and this tended to be associated with low insight scores.

Awareness of illness – case vignette

Patients were more likely to judge the person described in the vignette as having an illness or disease ($n=63$) than they were to make this attribution about themselves ($n=18$; $\chi^2=13.9$, $d.f.=1$, $P<0.001$), excluding those making attributions to neither ($n=66$). Slightly fewer patients judged the person described in the vignette to be suffering from the effects of black magic ($n=81$, 61.8%) than they themselves ($n=94$, 71.8%; 95% CI –21.3 to 1.4, NS).

Factors associated with insight

A stepwise conditional logistic regression analysis was performed with total insight score as the dependent variable, entering psychopathology, endorsed explanatory models, pathways to care and other clinical variables, controlling for age, gender and education and other demographic factors. This identified causal attribution (disease as a positive predictor and black magic as a negative predictor), the perceived consequences item of the SEMI and presence of help-seeking as factors significantly associated with insight (Table 3).

DISCUSSION

This study examined the relationship between insight, psychopathology and explanatory models of illness and showed that insight in patients with schizophrenia from

South India shows many of the same clinical, psychopathological and cognitive associations as in Western populations.

Psychopathology

There was some evidence to support the hypothesis that insight is related to the psychopathology of schizophrenia. We found a weak but significant inverse correlation between total BPRS score and the relabelling dimension of insight, and a positive relationship between insight total score and indices of anxiety and worry. Given that correlations were in opposite directions, it is not surprising that the overall correlation was non-significant, although the weight of psychosis items has usually outweighed the mood/anxiety items in previous studies (for review see David, 2004). Nevertheless this pattern is in line with studies carried out in both high- and low- and middle-income countries (Kulhara *et al*, 1992; Aga *et al*, 1995; Mintz *et al*, 2003; David, 2004). The strength of the correlations was modest, bolstering the argument that insight and psychopathology are not merely two sides of the same coin. Lower insight scores were seen in patients brought to the clinic involuntarily, as expected from previous studies (McEvoy *et al*, 1989; David *et al*, 1992). The lack of correlation with scores of social functioning is again in line with some (Bartkó *et al*, 1988; Schwartz, 1998; Simon *et al*, 2004) but not all previous studies (Amador *et al*, 1994; Trauer & Sacks, 2002), and might reflect the particularly low levels of social functioning (and small variance) in this patient sample. As in previous studies, duration of illness and gender were not determinants of insight.

The association between insight and symptoms of anxiety – assessed somewhat crudely using the BPRS – may be predicted on the basis of previous work (Amador *et al*, 1996; Mintz *et al*, 2003; Rathod *et al*, 2005), but the direction of causality is by no means clear. The received wisdom is that anxiety and lowered mood are a reaction to illness awareness, but it is equally plausible that anxiety leads to a more self-critical attitude, akin to ‘depressive realism’. Whatever the explanation, this pattern of associations appears not to be culturally specific.

Explanatory models

Insight was also evaluated indirectly using a vignette that forms part of the SEMI. In line with our second hypothesis, a pattern was

seen wherein the person in the vignette was readily labeled as having a mental illness whereas patients rarely used this attribution for themselves. This pattern has been observed in other vignette studies in the UK, USA and Asia (McEvoy *et al*, 1993; Swanson *et al*, 1995; Chung *et al*, 1997; Startup, 1997). The self–other comparison overcomes the criticism levelled at cultural comparisons in psychiatry that the ‘content’ of attributions, delusions, hallucinations etc. may differ but that this is a relatively trivial consideration. Previous vignette studies show that the ‘medical model’ is an available heuristic to people with major mental illness, including those in South India. This is not surprising given the high levels of literacy and rapid cultural transition – first through colonisation and subsequently through globalisation – affecting that part of the world. It is of course highly likely that complex illness attributions of the kind elicited have been around in Asia for centuries, but here we are talking about a narrower Western biomedical model. The pattern of responses in relation to self and others might be described as an example of self-serving bias, a common, perhaps universal, defensive cognitive style (Pronin *et al*, 2004). It is understandable that a person might be uncomfortable in ascribing to themselves a diagnosis of mental illness, given the stigma that this carries and, perhaps, implications of blame. However, the alternative explanations of behaviour such as black magic or past misdeeds are not value free. The meaning and implications of mental illness within cultures are clearly varied, and we are undertaking further detailed qualitative work to explore this.

Finally, we tested the hypothesis that indigenous explanatory models or ‘emic perspectives’ would be independent of insight. The study showed that the expression of culturally appropriate illness attributions (e.g. evil spirits, black magic, etc.) was common. Adherence to such ideas was deemed, at best, not consistent with high levels of insight or, at worst, indicative of poor insight as judged by psychiatrists from the same culture. In the case of black magic, this illness attribution predicted significantly lower levels of insight in the multiple regression analysis after controlling for other factors. However, the same analysis revealed a strong association between awareness of the consequences of illness, early help-seeking and level of insight, elicited separately through the open-ended SEMI in a way that did not rely upon the

conventions of a psychiatric interview. This supports the notion that insight or an awareness of illness that is adaptive in terms of appropriate help-seeking might easily be missed if the assessment of insight is undertaken in a rigid culturally insensitive way (Saravanan *et al*, 2004).

Our results compliment a recent study of second-generation minority ethnic groups in the UK of West African, Caribbean and Bangladeshi origin. This study found that there was an association between attribution of illness to supernatural phenomena – not invoked by the White UK comparison group – and poorer insight as assessed using the SEMI (McCabe & Priebe, 2004). We also noted a tendency for those who were unsure whether disease or supernatural forces accounted for their state to have low insight scores. This might imply that any attribution is better than none.

Conclusions

We have shown that insight is amenable to study in a non-Western setting using standard assessment instruments. Patients with schizophrenia, wherever they are, appear to vary in their willingness to accept an illness attribution for their state, but are more likely to do so if they are anxious and if considering someone else’s predicament rather than their own. However, the study supports a more inclusive conceptual model for assessing insight which emphasises help-seeking. This will be of value not just for clinical and research work in non-Western countries but for a richer understanding of the experience of the individual in their cultural context (White *et al*, 2000; McCabe & Priebe, 2004). Understanding the relationship between cultural variations of insight and prevailing belief systems will be a step forward in designing interventions to enhance engagement of patients with mental health services in Western and non-Western countries.

ACKNOWLEDGEMENTS

We thank the participants and staff of the Christian Medical College, Vellore, for their cooperation and commitment to the study. B.S. was supported by a grant from the Wellcome Trust.

APPENDIX

Case vignette

‘I’d like to ask your opinion about some other peoples’ visit to the doctor. I’d like to read a short

account of their problems and then ask you a few questions about them.'

Mr M.E. was hospitalised at the age of 18. He was single and lived with his parents. His relatives described that he functioned quite well as a child and that he was well adjusted at school until the age of 11–12. At that age he became preoccupied with strange ideas and for this reason he saw a psychiatrist weekly for about 1 month. This treatment, which did not include any medication, had a positive effect on his worries, but he became more withdrawn and participated in fewer social activities in the months to come. Before hospitalisation he felt that others could hear his thoughts and he also felt that a 'satanic' group living in his native place were persecuting him. In a mysterious way he felt that this group did 'black magic' against him and that they could influence his body from a long distance. He could feel this as a pain in his stomach. These symptoms lasted for several months. At the time of hospitalisation he felt that his brain was damaged and 'empty', and that 'someone' was inserting thoughts into his head. He was withdrawn and preoccupied with the idea that the 'black magic' that they had done might have destroyed his brain tissue.

REFERENCES

- Aga, V. M., Agarwal, A. K. & Gupta, S. C. (1995)** The relationship of insight to psychopathology in schizophrenia: a cross sectional study. *Indian Journal of Psychiatry*, **37**, 129–135.
- Aleman, A., Agrawal, N., Morgan, K. D., et al (2006)** Insight in psychosis and neuropsychological function: meta-analysis. *British Journal of Psychiatry*, **189**, 204–212.
- Amador, X. F. & David, A. S. (2004)** *Insight and Psychosis: Awareness of Illness in Schizophrenia and Related Disorders* (2nd edn). Oxford University Press.
- Amador, X. F., Strauss, D. H., Yale, S. A., et al (1991)** Awareness of illness in schizophrenia. *Schizophrenia Bulletin*, **17**, 113–132.
- Amador, X. F., Strauss, D. H., Yale, S. A., et al (1993)** Assessment of insight in psychosis. *American Journal of Psychiatry*, **150**, 873–879.
- Amador, X. F., Flaum, M., Andreasen, N. C., et al (1994)** Awareness of illness in schizophrenia and schizoaffective and mood disorders. *Archives of General Psychiatry*, **51**, 826–836.
- Amador, X. F., Friedman, J. H. & Kasapis, C. (1996)** Suicidal behavior in schizophrenia and its relationship to awareness of illness. *American Journal of Psychiatry*, **153**, 1185–1188.
- American Psychiatric Association (1994)** *Diagnostic and Statistical Manual of Mental Disorders* (4th edn) (DSM-IV). APA.
- Bartkó, G., Herczeg, I. & Zador, G. (1988)** Clinical symptomatology and drug compliance in schizophrenic patients. *Acta Psychiatrica Scandinavica*, **77**, 74–76.
- Chung, K. F., Chen, E. Y., Lam, L. C., et al (1997)** How are psychotic symptoms perceived? A comparison between patients, relatives and the general public. *Australian and New Zealand Journal of Psychiatry*, **31**, 756–761.
- David, A. S. (1990)** Insight and psychosis. *British Journal of Psychiatry*, **156**, 798–808.
- BALASUBRAMANIAN SARAVANAN, MD**, Institute of Psychiatry, London and Christian Medical College, Vellore, India; **K. S. JACOB, MD, PhD**, SHANTHI JOHNSON, Christian Medical College, Vellore, India; **MARTIN PRINCE, MD, MRCPsych**, **DINESH BHUGRA, PhD, FRCPsych**, **ANTHONY S. DAVID, MD, FRCP, FRCPsych**, Institute of Psychiatry, King's College London, London, UK
- Correspondence: Professor Anthony David, Section of Cognitive Neuropsychiatry, PO Box 68, Institute of Psychiatry, King's College London, Denmark Hill, London SE5 8AF, UK. Email: a.david@iop.kcl.ac.uk
- (First received 1 August 2006, accepted 8 November 2006)
- David, A. S. (2004)** The clinical importance of insight: an overview. In *Insight and Psychosis: Awareness of Illness in Schizophrenia and Related Disorders* (eds X. F. Amador & A. S. David) (2nd edn), pp. 359–392. Oxford University Press.
- David, A., Buchanan, A., Reed, A., et al (1992)** The assessment of insight in psychosis. *British Journal of Psychiatry*, **161**, 599–602.
- Endicott, J., Spitzer, R. L. & Fleiss, J. (1976)** The Global Assessment Scale. *Archives of General Psychiatry*, **33**, 776–771.
- Joel, D., Sathyaseelan, M., Jayakaran, R., et al (2003)** Explanatory models of psychosis among community health workers in South India. *Acta Psychiatrica Scandinavica*, **108**, 66–69.
- Johnson, S. & Orrell, M. (1995)** Insight and psychosis: a social perspective. *Psychological Medicine*, **25**, 515–520.
- Kemp, R. & David, A. (1997)** Insight and compliance. In *Treatment Compliance and the Therapeutic Alliance in Serious Mental Illness* (ed. B. Blackwell), pp. 61–84. Harwood Academic Publishers.
- Keshavan, M. S., Rabinowitz, J., DeSmedt, G., et al (2004)** Correlates of insight in first episode psychosis. *Schizophrenia Research*, **70**, 187–194.
- Kulhara, P., Chakrabarti, S. & Basu, D. (1992)** Insight and psychosis. I. An empirical inquiry. *Indian Journal of Social Psychiatry*, **8**, 40–44.
- Lloyd, K. R., Jacob, K. S., Patel, V., et al (1998)** The development of the Short Explanatory Model Interview and its use among primary care attenders with common mental disorder – a preliminary report. *Psychological Medicine*, **28**, 1231–1237.
- Manoharam, E., John, K. R., Joseph, A., et al (2001)** Psychiatric morbidity, patient perspectives of illness and factors associated with poor medication compliance among the tuberculous in Vellore, South India. *Indian Journal of Tuberculosis*, **48**, 77–80.
- McCabe, R. & Priebe, S. (2004)** Explanatory models of illness in schizophrenia: comparison of four ethnic groups. *British Journal of Psychiatry*, **185**, 25–30.
- McEvoy, J. P., Applebaum, P. S., Apperson, J., et al (1989)** Why must some schizophrenic patients be involuntarily committed? The role of insight. *Comprehensive Psychiatry*, **30**, 13–17.
- McEvoy, J. P., Schooler, N. J., Friedman, E., et al (1993)** Use of psychopathology vignettes by patients with schizophrenia or schizoaffective disorder and by mental health professionals to judge patients' insight. *American Journal of Psychiatry*, **150**, 1649–1653.
- Mintz, A. R., Dobson, K. S. & Romney, D. M. (2003)** Insight in schizophrenia: a meta-analysis. *Schizophrenia Research*, **61**, 75–88.
- Moodley, P. & Perkins, R. (1993)** Perceptions of problems in psychiatric inpatients: denial, race and service usage. *Social Psychiatry and Psychiatric Epidemiology*, **28**, 189–193.
- Morgan, K. D. & David, A. S. (2004)** Neuropsychological studies of insight in patients with psychotic disorders. In *Insight and Psychosis: Awareness of Illness in Schizophrenia and Related Disorders* (eds X. F. Amador & A. S. David) (2nd edn), pp. 177–193. Oxford University Press.
- Prinin, E., Gilovich, T. & Ross, L. (2004)** Objectivity in the eye of the beholder: divergent perceptions of bias in self versus others. *Psychological Review*, **111**, 781–799.
- Rathod, S., Kingdon, D., Smith, P., et al (2005)** Insight into schizophrenia: the effects of cognitive behavioural therapy on the components of insight and association with sociodemographics – data on a previously published randomised controlled trial. *Schizophrenia Research*, **74**, 211–219.
- Sanz, M., Constable, G., Lopez-Ibor, I., et al (1998)** A comparative study of insight scales and their relationship to psychopathological and clinical variables. *Psychological Medicine*, **28**, 437–446.
- Saravanan, B., Jacob, K. S. & Prince, M., et al (2004)** Culture and insight revisited. *British Journal of Psychiatry*, **184**, 107–109.
- Schwartz, R. C. (1998)** Insight and illness in chronic schizophrenia. *Comprehensive Psychiatry*, **39**, 249–254.
- Simon, A. E., Berger, G. E., Giacomini, V., et al (2004)** Insight in relation to psychosocial adjustment in schizophrenia. *Journal of Nervous and Mental Disease*, **192**, 442–445.
- Spitzer, R. L., Williams, J. B. W. & Gibbon, M. (1990)** The Structured Clinical Interview for DSM-III-R – Patient Version (SCID-P). *American Psychiatric Association*.
- Startup, M. (1997)** Awareness of own and others' schizophrenic illness. *Schizophrenia Research*, **26**, 203–211.
- Swanson, C. L., Freudenreich, O., McEvoy, J. P., et al (1995)** Insight in schizophrenia and mania. *Journal of Nervous and Mental Disease*, **193**, 752–755.
- Trauer, T. & Sacks, T. (2002)** The relationship between insight and medication adherence in severely mentally ill clients treated in the community. *Acta Psychiatrica Scandinavica*, **102**, 211–216.
- Ventura, J., Green, M. F., Shaner, A., et al (1993)** Training and quality assurance with the brief psychiatric rating scale. The 'drift buster'. *International Journal of Methods in Psychiatric Research*, **3**, 221–244.
- White, R., Bebbington, P., Pearson, J., et al (2000)** The social context of insight in schizophrenia. *Social Psychiatry and Psychiatric Epidemiology*, **35**, 500–507.