

## **Insight into illness in a sample of Nigerian Patients with Schizophrenia: Sociodemographic and clinical correlates.**

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Majority of studies evaluating insight in schizophrenia conducted in western countries have shown diverse associations between insight and various sociodemographic and clinical factors. The objectives of this study were to assess insight in a sample of Nigerian patients with schizophrenia. Seventy patients diagnosed with schizophrenia were recruited into the study from the mental health units of the Obafemi Awolowo University Teaching Hospital Complex. Participants completed a semi-sociodemographic and illness-related questionnaire, the Insight Scale for Psychosis (ISP). The psychopathological symptoms were assessed with the Positive and Negative Syndrome Scale. Analysis was done with the Statistical Package for Social Sciences (SPSS) software, version 16 (SPSS for Windows, 2007). The number of relapses and hospitalizations correlated with the “ability to re-label experiences” and “insight in need for treatment items” of the ISP. All the three items of the Insight Scale for Psychosis negatively correlated with the PANSS positive, PANSS negative and PANSS general. Some of the illness-related factors and PANSS subscales were observed to have predicted the three items of the Insight Scale for Psychosis. More studies are needed in our environment to identify other factors that influence insight in patients with severe mental disorders.

*Keywords:* Insight, Nigeria, Schizophrenia

Insight is an important concept in clinical psychiatry and it has been described as self cognizant and the acknowledgement of mental disorder and the acceptance of the need for treatment (Saravanan, Jacob, Prince, Bhugra, & David, 2004). Despite the varying level of awareness into the morbid state that have been observed in many neuropsychiatric disorders, a lack of insight is particularly common in schizophrenia (Amador *et al.*, 1994; Michalakeas *et al.*, 1994; Sanz, Constable, Lopez-Ibor, Kemp, & David, 1998). The lack of awareness of illness and associated symptoms is a common feature in patients with schizophrenia, with almost 80% of affected patients failing to acknowledge that they have a mental illness (Amador, 1998). In the International Pilot Study of Schizophrenia, a survey conducted by the World Health Organization, absence of insight was found to be almost invariably associated with a diagnosis of acute

schizophrenia across all countries and cultures (Amador, *et al.*, 1994).

### *Clinical facets of insights in schizophrenia*

Studies have reported on the various clinical facets of insight in schizophrenia. The lack of awareness in the context of schizophrenia has been associated with illness severity (De Hert *et al.*, 2009; Sevy, Nathanson, Visweswaraiyah, & Amador, 2004) and in terms of consequences; the presence of poor insight has been associated with poor compliance with treatment (Kemp & David, 1996; Sanz, *et al.*, 1998) and poorer outcome (David *et al.*, 1995; Lincoln, Lüllmann, & Rief, 2007). It has also shown that level of insight varies depending on the phase of the illness (Smith, Hull, & Santos, 1998). The absence of insight has been statistically demonstrated to have a strong positive correlation with involuntary commitment into a mental health facility (Weiler, Fleisher, & McArthur-Campbell, 2000).

Studies investigating whether alterations in level of insight are related to alteration in symptoms have produced varied results. Some found that change in the present level of insight appears to be unrelated to symptom change (Carroll *et al.*, 1999; Kemp & Lambert, 1995; McEvoy *et al.*, 1989) while others reported mixed results (Jorgensen, 1995; McEvoy, Freter, Merritt, & Apperson, 1993) and significant associations (Gharabawi, Lasser, Bossie, Zhu, & Amador, 2006; Lysaker, Bryson, & Bell, 2002).

Studies have shown what appears to be a negative consequential aspect to the development of insight in patients with schizophrenia. A meta-analysis that investigated the association between insight and depression involving 15 studies with a total population of 1218 patients reported increased depressive symptoms with increased insight into illness (Mintz, Dobson, & Romney, 2003). Also, some authors have reported that insight was associated with statistically significant increased suicidal ideation and attempt (Evren & Evren, 2004; Kim, Jayathilake, & Meltzer, 2003; Schwartz & Smith, 2004). Positive associations have also been shown between insight and medication adherence (Mutsatsa *et al.*, 2003; Watson *et al.*, 2006; Yen *et al.*, 2005). A relatively recent study found that greater insight into illness in a group of patients with schizophrenia was significantly predictive of a favourable attitude towards medication adherence following discharge from in-patient care (Schennach-Wolff *et al.*, 2009).

Authors that investigated the relationship between insight and violence in the context of schizophrenia have produced contradictory findings. Some have shown strong positive correlations between lack of insight and violence (Buckley *et al.*, 2004; Foley *et al.*, 2005; Grevatt, Thomas-Peter, & Hughes, 2004), while some did not (Arango, Bombin, Gonzalez-Salvador, Garcia-Cabeza, & Bobes, 2006; Carroll, Pantelis, & Harvey, 2004). The relationship between insight and competence to consent has also revealed different results. Using the Birchwood Insight Scale (Birchwood *et al.*, 1994), it has been reported that the level of insight was not associated with the capacity

to consent to treatment (Palmer & Jeste, 2006), while other authors have demonstrated a significant correlation between level of insight and capacity to consent (Dunn *et al.*, 2007).

Absence of insight was in the past a major demarcating feature between psychosis and neurosis, though it has been shown that some patients with schizophrenia do possess intact insight (McEvoy, *et al.*, 1993). Sociodemographic variables such as gender and educational level have not been consistently found to be associated with insight in schizophrenia (Wiffen, Rabinowitz, Fleischhacker, & David, 2010), also, psychotic symptoms have been shown to have a weak negative correlation with insight (Mintz, *et al.*, 2003) while low mood predicts a better awareness (Markova & Berrios, 1992; Smith, Hull, Israel, & Willson, 2000). Most of the studies on insight in patients with schizophrenia have been conducted in developed countries, despite the cultural generality of mental disorders (Saravanan, *et al.*, 2004).

A literature search revealed a paucity of research into the sociodemographic and clinical factors associated with insight among Nigerian patients with schizophrenia. The only study in Nigeria examined insight in relation to medication adherence (Adewuya, Ola, Mosaku, Fatoye, & Egunranti, 2006). The objectives of this current study were to assess insight in a cross-sectional sample of Nigerian patients with schizophrenia, to examine the associations between insight and various socio-demographic and illness-related factors as well as investigate the factors that influence insight.

### **Methods**

A total of 70 patients receiving treatment for schizophrenia were recruited consecutively from the psychiatry unit of the Obafemi Awolowo University Hospitals Complex (OAUTHC), a tertiary health care facility located in south-western Nigeria. Approval for the study was obtained from the Ethical and Research Committee of the Hospital. Written informed consent was also obtained from the patients after the aims and objectives of the study had been explained to them. Subjects were

consecutively recruited from the psychiatric unit over a period of four months (June 2013-August 2013). Inclusion criteria include patients diagnosed with schizophrenia according to the International Classification of Diseases and Disorders, 10<sup>th</sup> edition (ICD-10) (International Classification of Diseases, 1992). Subjects who do not give consent, those with comorbid medical problems and substance use disorder were excluded.

### *Materials*

*A. A semi-structured sociodemographic and illness related questionnaire:* This questionnaire inquired about the following socio-demographic data: age, sex, ethnicity, religion, present marital status, family type, employment status, level of education, income per month for those who are currently employed. Illness-related details for the patients included: duration of illness in months, age at onset of illness in years, the number of relapses, the number of admissions due to illness and time since last admission in months.

*B. Insight Scale for Psychosis:* Insight was assessed with the Insight scale for psychosis (ISP) which is a self-report instrument (Birchwood, *et al.*, 1994). It consists of eight questions which are scored on a scale of 0 to 2 and it measures the three dimensions of insight i.e. awareness of illness, attribution of symptoms to illness and the need for treatment. It is selected because of its short and easy to comprehend nature. There is no evidence that this instrument has been used in this environment therefore a validity test would be carried out.

*C. Psychopathological symptoms:* These were assessed with the Positive and Negative Syndrome Scale (Kay, Abraham, &

Opler, 1987). This is a structured interview to assess patients on 30 items covering positive, negative and general symptoms. For each item, ratings were made on a 1 – 7 scale of symptom severity. The scale has been used in Nigeria (McCreadie & Ohaeri, 1994; Reicher *et al.*, 2003).

### *Data Analysis*

Analysis was done with the Statistical Package for Social Sciences (SPSS) software, version 16 (SPSS). Results were calculated as frequencies, means and standard deviations. Bivariate analyses were used to examine the relationships between the three items of the Insight Scale for Psychosis and the socio-demographic and illness related variables. Multiple linear regressions (forward method) was performed with the items of the Insight Scale for Psychosis as dependent variables and the sociodemographic and illness related factors as independent variables, in order to ascertain the factors that predicted the items of the Insight Scale for Psychosis. All tests were two-tailed, and the level of significance was set at  $p < 0.05$ .

### **Results**

A total of 80 patients diagnosed with schizophrenia were recruited from the mental health units of the two units of the Obafemi Awolowo University Teaching Hospital Complex. Out of these, 6 had incomplete Sociodemographic and illness related data while 4 did not give consent, thus leaving a total of 70 patients whose results were analysed. Table 1 shows the Sociodemographic characteristics of the subjects recruited for the study. The mean age of the subjects was 40.01(SD  $\pm$ 15.41) with a range of 18 to 85 years. There were more males (54.3%) than females. A larger percentage was single (52.9%) while 2.9% were divorced.

Table 1: Socio-demographic characteristics of the study subjects

Variables	Mean	SD
<b>Age</b>	40.01	15.41
	<b>N (%)</b>	
<b>Gender:</b>		
Male	38 (54.3%)	
Female	32 (45.7%)	
<b>Marital Status:</b>		
Single	37 (52.9%)	
Married	25 (35.7%)	
Divorced	2 (2.9%)	
Separated	6 (8.6%)	
<b>Family type:</b>		
Monogamous	59 (84.3%)	
Polygamous	11 (15.7%)	
<b>Religion:</b>		
Christianity	60 (85.7%)	
Islam/others	10 (14.3%)	
<b>Ethnicity:</b>		
Yoruba	70 (100%)	
<b>Level of education:</b>		
Primary	20 (28.6%)	
Secondary	15 (21.4%)	
Tertiary	35 (50%)	
<b>Employment Status:</b>		
Currently Employed	35 (50.0%)	
Not Currently Employed	23 (32.9%)	
Never Employed	12 (17.1%)	
<b>Income per month (naira) *:</b>		
<10000	14 (40.0%)	
10000-19999	4 (11.4%)	
20000-29999	2 (5.7%)	
30000-39999	4 (11.4%)	
40000-49999	3 (8.6%)	
>50000	8 (22.9%)	

➤ \* Percentage shown is the valid percentage of those currently employed.

Table 2 shows the illness related characteristics of the subjects. The age of onset for the males and females were respectively 26.53 (SD±7.99) and 32.28(SD±8.92).

Table 2: Illness related characteristics of the subjects

Variables	Mean (SD)
<b>Age of onset :</b>	29.16(8.85)
Male	26.53 (7.99)
Female	32.28( 8.92)
<b>No of relapses:</b>	1.61 (1.88)
<b>No of hospitalizations:</b>	1.26 (1.02)
<b>Months since last relapse:</b>	17.83 (27.87)
<b>Monthly cost of treatment:</b>	1550.23(231.12)

Table 3 shows the mean scores on the items of the Insight Scale for Psychosis (ISP) and the Positive and Negative Symptom of Schizophrenia scale (PANSS).

*Table 3: Mean scores on the items of the Insight Scale for Psychosis (ISP) and the Positive and Negative Symptom of Schizophrenia scale (PANSS)*

Variables	Mean	SD
<b>Insight Scale for Psychosis</b>		
Ability to re-label experiences	2.23	1.41
Awareness of illness	1.71	1.44
Insight into need for treatment	3.01	1.11
<b>Total Score</b>	6.96	3.20
<b>PANSS scale</b>		
PANSS positive	11.00	7.10
PANSS negative	9.24	4.35
<b>PANSS general</b>	21.00	8.22

Table 4 shows the Spearman’s correlations between the sociodemographic variables, illness-related factors, PANSS and items of the Insight Scale for Psychosis. It can be seen that none of the continuous sociodemographic variables were significantly associated with the three items of the Insight Scale for Psychosis. It can be also be observed that the number of relapses of illness positively correlated ( $r=0.241$ ,  $p=0.044$ ) with the “Awareness of

illness” item of the Insight Scale for Psychosis, while the number of hospitalizations on account of the illness was observed to positively correlated ( $r=0.240$ ,  $P=0.046$ ) with the “Ability to re-label experiences”, and also positively correlated ( $r=0.248$ ,  $p=0.039$ ) with “Insight into need for treatment”. Also, all the subscales of the PANSS were observed to negatively correlate with the three items of the Insight Scale for Psychosis.

*Table 4: Correlations between Sociodemographic variables, illness-related factors, PANSS and items of the Insight Scale for Psychosis*

	Ability to re-label experience	Awareness of illness	Insight into need for treatment	Total score
<b>Sociodemographic variables</b>				
Age of subject:	0.001	0.128	0.172	0.099
Duration of unemployment:	0.177	0.006	0.066	0.112
Income per month:	0.127	0.063	-0.021	0.047
<b>Illness related variables</b>				
Age of onset of illness:	0.023	0.198	0.162	0.169
No of relapses:	0.035	<b>0.241*</b>	0.164	0.190
No of hospitalizations:	0.240*	0.126	<b>0.248*</b>	<b>0.261*</b>
Months since last relapse	0.169	0.189	0.146	0.225

Monthly cost of treatment	-0.060	-0.041	0.005	-0.056
<b>PANSS</b>				
PANSS positive:	<b>-0.393*</b>	<b>-0.411**</b>	<b>-0.283*</b>	<b>-0.440**</b>
PANSS negative:	<b>-0.366*</b>	<b>-0.329*</b>	<b>-0.280*</b>	<b>-0.409**</b>
PANSS general:	<b>-0.471**</b>	<b>-0.435**</b>	<b>-0.296*</b>	<b>-0.516**</b>

\* <0.05      \*\* <0.001

Table 5 shows the factors predicting the scores on the items of the Insight Scale for Psychosis.

Table 5: Factors predicting the scores on the items of the Insight Scale for Psychosis

Variable	R	R <sup>2</sup>	S.E	p-value	95% CI
<b>Ability to re-label experience</b>					
<b>PANSS general</b>	0.439	0.193	1.272	<b>&lt;0.001</b>	-0.108 to -0.036
<b>No of hospitalizations</b>					
	0.505	0.255	1.231	<b>&lt;0.001</b>	0.043 to 0.498
<b>Awareness of illness</b>					
<b>PANSS general</b>	0.345	0.119	1.358	<b>0.003</b>	-0.100 to -0.021
<b>Need for treatment</b>					
<b>PANSS positive</b>	0.387	0.150	1.027	<b>0.001</b>	-0.092 to -0.024
<b>No of hospitalizations</b>					
	0.453	0.206	1.000	<b>&lt;0.001</b>	0.016 to 0.386
<b>Total score</b>					
<b>PANSS positive</b>	0.470	0.221	0.047	<b>&lt;0.001</b>	-0.299 to -0.116
<b>No of hospitalizations</b>					
	0.518	0.268	0.257	<b>0.041</b>	0.023 to 1.048

### Discussion

We, the authors believe this is the first study in Nigeria that has attempted to specifically examined the relationships between insight and socio-demographic and illness related factors in patients with schizophrenia. Concerning the socio-demographic and illness related characteristics of our patients; their mean age was 40.01 years which is similar to the mean age of the schizophrenia patients

from a comparable centre in south-western Nigeria (Suleiman, Ohaeri, Lawal, Haruna, & Orija, 1997). A larger percentage of our patients were single, a finding that is supporting what has been reported concerning marital status among patients with schizophrenia who are more likely to remain single and unmarried than patients in other diagnostic groups (Eaton, 1975; Kebede *et al.*, 2004 ). The employment rate of the patients in this study was 50.0%

which is higher than the European estimates of employment rate in this patient group which ranges from 8 to 35% (Gaite *et al.*, 2002). Mental disorders have been associated with an elevated risk of unemployment, with only 20% of patients receiving care in specialist centers gainfully employed (Healthcare Commission & for Mental Health in England, 2008). Severe mental disorders such as schizophrenia is associated with a three-fold increased risk of unemployment (Melzer, Fryers, & Jenkins, 2004) as well as a reduced level of well-being and functioning (Huppert & Whittington, 2003).

The majority of the patients in this study were earning less than 10,000 naira per month; this finding is consistent with what has been reported in other studies that individuals with severe mental disorders generally earn low incomes compared to the general population (Gao, Schmidt, Gill, & Pratt, 2011). The difference in age of onset observed in the subjects between the sexes is characteristics of patients with schizophrenia, with later age of onset usually reported in females (Usall *et al.*, 2001). One observation regarding the mean age of onset of our subjects was that it was slightly higher than what has been generally reported in populations of schizophrenia patients (Malla *et al.*, 2002).

The possible reason for this may be because all the patients that we recruited had paranoid schizophrenia, which is characterized by a considerably higher age of onset (reported to have a mean age of 28.5yrs vs. 19.9 years in patients with nonparanoid schizophrenia) (Bellino *et al.*, 2004). The mean monthly cost of treatment in our subjects was 1550.23 Naira per month; this provides only an estimate of the aspect of the direct costs of the illness. The cost of illness typically assesses the direct and indirect costs of a particular disorder. The direct cost include, direct medical expenditures, emergency department services, consultation fees for outpatient visits and costs of medications. The indirect cost of the illness attempts to estimate the level of impairment as a result of the illness, and the effect of the disorder on the work productivity of patients and their caregivers, as well as other issues, such as

social welfare costs and criminal justice costs (Kleinman *et al.*, 2003).

The psychometric properties of the Insight Scale for Psychosis revealed an internal consistency (Cronbach  $\alpha$ ) of 0.748, indicating adequate reliability. The Cronbach  $\alpha$  value we obtained is as exactly as what was described by Birchwood *et al.* (1994) when the scale was initially developed (Birchwood, *et al.*, 1994). The face validity of the scale seems appropriate in that the patients were able to understand what the scale was assessing.

The mean score of the study subjects as depicted in table 3 shows that the highest mean score was in the "Insight into need for treatment" item of the Insight Scale for psychosis (ISP) and while the lowest mean score was in the "Awareness of illness" item. No study was found during literature search to have utilized this scale in the assessment of insight in schizophrenia patients in the West African environment. The reason we considered for the higher mean score on the "Insight into need for treatment" item of the Insight Scale for Psychosis (ISP) in the subjects could be due to the distressing effects of the symptomatology of the illness affecting them, hence their recognition of the need for an intervention to ameliorate these symptoms. We also considered that one reason for the low score in the "Awareness of illness" item could be as result of the denial of the existence of their mental illness, or they were considering their experiences not as an illness but a "phenomena" that is distressing enough as to require treatment. The "Ability to re-label experiences" item of the ISP involves the recognition of a psychotic symptom and the understanding that is a pathological event. The low mean scores on the "Awareness of illness" item and the "Ability to re-label experiences" items of the ISP may be a reflection of the patients' attribution of illness to causes that are non-biological i.e. spiritual problem/attack, an attitude regarding the causation of mental illness which is rampant in Nigeria (Adebowale & Ogunlesi, 1999; Adewuya & Makanjuola, 2008; Kabir, Iliyasu, Abubakar, & Aliyu, 2004).

Concerning the correlations between the sociodemographic variables and the items of the ISP, it was observed that none of the variables correlated with the 3 items. This observation further lends credence to what has been previously postulated that sociodemographic factors have no relationship with insight in schizophrenia (Stefanopoulos, Lafuenta, Saez Fonseca, & Huxley, 2009; Zhang, Tan, & Liu, 2009), but contrasted to what was reported in other studies. (J.P. McEvoy *et al.*, 2006). These differences may be due to methodological reasons.

The number of relapses was observed to positively correlate with the "Awareness of illness" item of the ISP, though the correlation was modest, this implies that the more the number of relapses, the higher the scores on "Awareness of illness". Although our study design cannot show causation; one plausible interpretation of this relationship is that the more the number of relapses suffered by the patients the higher the likelihood of recognizing their symptoms as arising from a mental illness thus leading to a greater awareness.

The number of hospitalizations also had positive modest correlations with the "Ability to re-label experiences", "insight into need for treatment" and the total score on the ISP. One reason for the positive association observed between the number of hospitalizations and "Ability of re-label experience" could be that with more admissions into a mental health unit, the repetitive psychosocial treatment modalities has enabled the patients to understand their psychotic symptoms as pathological. Thus, their ability to recognize their psychotic symptoms as pathological increases their insight into the need for intervention.

Previous efforts to classify the etiologic basis of insight by investigating its association with psychotic symptoms have yielded conflicting results (Carroll, *et al.*, 1999). Among the subjects in our study, the 3 items of the ISP had negative correlations with the 3 domains of the PANSS (positive, negative and general symptoms). Some authors (Amador, *et al.*, 1994; Collins, Remington, Coulter, & Birkett, 1997) reported similar associations between

insight and positive symptoms while others reported similar associations with negative symptoms (Cuesta & Peralta, 1994). Although our result is in contrast to what some other studies have shown - that insight has no relationship with symptomatology (Schwartz & Petersen, 1999).

Multivariate analysis revealed that the PANSS general score negatively predicted the "Ability to re-label experience" and "Awareness of illness" items of the ISP while the number of hospitalizations positively predicted the "Ability to re-label experiences", "Awareness of illness" and the total score of the ISP. The PANSS positive negatively predicted the "insight into need for treatment" item and the total score of the ISP. In contrast, one study among Chinese patients with schizophrenia showed that only negative symptoms negatively predicted insight in their patients (Xiang *et al.*, 2012). These contradictory findings across different studies may in part be explained by differences in sampling methods, the composition and the size of study subjects and the instruments used to measure insight and the stage of schizophrenia (Schwartz, 2000).

The limitations of this study include the following: the relatively small sample size and patients recruitment in only one location. Hence, there is need for caution in generalizing the findings to patients in other centers in the country. Also, the patients who were severely ill were excluded. Our study is also cross-sectional in nature; as a result the causal relationships between insight and the sociodemographic and clinical variables could not be explored. Another limitation is that the instrument used to assess insight, the Insight Scale for psychosis, has not been extensively used in this environment. The major strength of that study lies in the fact that this is the first study from this environment to examine the sociodemographic and clinical correlates of insight in patients with schizophrenia.

### **Conclusion**

There is need for more studies in our environment to further explore the relationships between insight and other



sociodemographic and illness-related factors in patients with schizophrenia and to see ways of incorporating these factors into treatment modalities in such a way as to improve their insight. This will positively contribute to the other areas of affected patients' functioning.

### References

- Adebowale, T. O., & Ogunlesi, A. O. (1999). Beliefs and knowledge about aetiology of mental illness among Nigerian psychiatric patients and their relatives. *African Journal of Medicine and Medical Sciences*, 28, 35-41.
- Adewuya, A. O., & Makanjuola, R. O. (2008). Social distance towards people with mental illness in southwestern Nigeria. *Australia and New Zealand Journal of Psychiatry*, 42, 389-395.
- Adewuya, A. O., Ola, B. A., Mosaku, S. K., Fatoye, F. O., & Eegunranti, A. B. (2006). Attitude towards antipsychotics among out-patients with schizophrenia in Nigeria. *Acta Psychiatrica Scandinavica*, 113, 207-211.
- Amador XF, (Ed.). (1998). *Insight and Psychosis*: New York: Oxford University Press.
- Amador, X. F., Flaum, M., Andreasen, N. C., Strauss, D. H., Yale, S. A., Clark, S. C., & Gorman, J. M. (1994). Awareness of illness in schizophrenia and schizoaffective and mood disorders. *Archives of General Psychiatry*, 51, 826-836.
- Arango, C., Bombin, I., Gonzalez-Salvador, T., Garcia-Cabeza, I., & Bobes, J. (2006). Randomized clinical trial comparing oral versus depo formulations of zuclopenthixol in patients with schizophrenia and previous violence. *European Psychiatry*, 21, 34-40.
- Bellino, S., Rocca, P., Patria, L., Marchiaro, L., Rasetti, R., Di Lorenzo, R., . . . Bogetto, F. (2004). Relationships of age at onset with clinical features and cognitive functions in a sample of schizophrenia patients. *Journal of Clinical Psychiatry*, 65, 908-914.
- Birchwood, M., Smith, J., Drury, V., Healy, J., Macmillan, E., & Slade, M. A. (1994). A self-report Insight Scale for psychosis; Reliability, validity and sensitivity to change. *Acta Psychiatrica Scandinavica*, 89, 62-67.
- Buckley, P. F., Hrouda, D. R., Freeman, L., Noffsinger, S. G., Resnick, P. J., & Camlin-Shinger, M. S. S. A. (2004). Insight and its relationship to violent behaviour in patients with schizophrenia. *American Journal of Psychiatry*, 161, 1712-1714.
- Carroll, A., Fattah, S., Clyde, Z., Coffey, I., Owens, D. G., & Johnstone, E. C. (1999). Correlates of Insight and Insight change in schizophrenia. *Schizophrenia Research*, 35, 247-253.
- Carroll, A., Pantelis, C., & Harvey, C. (2004). Insight and hopelessness in forensic patients with schizophrenia. *Australia and New Zealand Journal of Psychiatry*, 38, 169-173.
- Collins, A. A., Remington, G. J., Coulter, K., & Birkett, K. (1997). Insight, neurocognitive function and symptom clusters in chronic schizophrenia. *Schizophrenia Research* 27, 37-44.
- Cuesta, M. J., & Peralta, V. (1994). Lack of insight in schizophrenia. *Schizophrenia Bulletin* 20, 359-366.
- David, A. S., van Os, J., Jones, P., Harvey, I., Foerster, A., & Fahy, T. (1995). Insight and psychotic illness. Cross-sectional and longitudinal associations. *British Journal of Psychiatry*, 167, 621-628.
- De Hert, M. A. F., Simon, V., Vidovic, D., Francic, T., Wampers, M., Peuskens, J., & van Winkel, R. (2009). Evaluation of the association between insight and symptoms in a Large sample of patients with schizophrenia. *European Psychiatry*, 24, 507-512.
- Dunn, L. B., Palmer, B. W., Appelbaum, P. S., Saks, E. R., Aarons, G. A., & Jeste, D. V. (2007). Prevalence and correlates of adequate performance on a measure of abilities related to decisional capacity: differences among three standards for the MacCAT-CR in patients with schizophrenia. *Schizophrenia Research*, 89, 110-118.
- Eaton, W. W. (1975). Marital status and schizophrenia. *Acta Psychiatrica Scandinavica*, 52, 320-329.
- Evren, C., & Evren, B. (2004). Characteristics of schizophrenic patients with a history of suicide attempt

- Archives of General Psychiatry*, 39, 884-889.
- Foley, S., Kelly, B. D., Clarke, M., McTigue, O., Gervin, M., Kamali, M., . . . Brown, S. (2005). Incidence and clinical correlates of aggression and violence at presentation in patients with first episode psychosis. *Schizophrenia Research*, 52, 161-168.
- Gaite, L., Vázquez-Barquero, J. L., Borra, C., Ballesteros, J., Schene, A., Welcher, B., . . . Herrán, A. (2002). Quality of life in patients with schizophrenia in five European countries: the EPSILON study. *Acta Psychiatrica Scandinavica*, 105, 283-292.
- Gao, N., Schmidt, L. T., Gill, K. J., & Pratt, C. W. (2011). Building human capital to increase earning power among people living with mental illnesses. *Psychiatric Rehabilitation Journal*, 35, 117-124.
- Gharabawi, G. M., Lasser, R. A., Bossie, C. A., Zhu, Y., & Amador, X. F. (2006). Insight and its relationship to clinical outcome in patients with schizophrenia or schizoaffective disorder receiving long-acting risperidone. *International Journal of Clinical Psychopharmacology*, 21, 233-240.
- Grevatt, A., Thomas-Peter, B., & Hughes, G. (2004). Violence, mental disorder and risk assessment: can structured clinical assessment predict the short-term risk of inpatient violence? *Journal of Forensic Psychiatry and Psychology*, 15, 278-292.
- Healthcare Commission. (2008). Results of the 2008 National Census of Inpatients in Mental Health and Learning Disability Services in England and Wales. Commission for Healthcare Audit and Inspection.
- Huppert, F. A., & Whittington, J. E. (2003). Evidence for the independence of positive and negative well-being: Implications for quality of life assessment. *British Journal of Psychology*, 8, 107-122.
- International Classification of Diseases, 10th edition, World Health Organisation. (1992).
- Jorgensen, P. (1995). Recovery and insight in schizophrenia. *Acta Psychiatrica Scandinavica*, 92, 436-440.
- Kabir, M., Ilyasu, Z., Abubakar, I. S., & Aliyu, M. H. (2004 ). Perception and beliefs about mental illness among adults in Karfi village, northern Nigeria. *BMC International Health and Human Rights*, 4, 3.
- Kay, S. R., Abraham, F., & Opler, L. A. (1987). The Positive and Negative Syndrome Scale(PANSS) for Schizophrenia. *Schizophrenia Bulletin*, 13, 261-276.
- Kebede, D., Alem, A., Shibre, T., Negash, A., Deyassa, N., & Beyero, T. (2004 ). The sociodemographic correlates of schizophrenia in Butajira, rural Ethiopia. *Schizophrenia Research*, 69, 133-141.
- Kemp, R., & David, A. (1996). Psychological predictors of insight and compliance in psychotic patients. *British Journal of Psychiatry*, 169, 444-450.
- Kemp, R., & Lambert, T. J. (1995). Insight in schizophrenia and its relationship to psychopathology. *Schizophrenia Research*, 18, 21-28.
- Kim, C. H., Jayathilake, K., & Meltzer, H. Y. (2003). Hopelessness, neuro-cognitive function, insight in schizophrenia: relationship to suicidal behaviour. *Schizophrenia Research*, 60, 71-80.
- Kleinman, L., Lowin, A., Flood, E., Gandhi, G., Edgell, E., & Revicki, D. (2003). Costs of bipolar disorder. *Pharmacoeconomics*, 21, 601-622.
- Lincoln, T. M., Lüllmann, E., & Rief, W. (2007 ). Correlates and long-term consequences of poor insight in patients with schizophrenia. A systematic review. *Schizophrenia Bulletin*, 33, 1324-1342.
- Lysaker, P., Bryson, G. J., & Bell, M. D. (2002). Insight and work performance in schizophrenia. *Journal of Nervous and Mental Disorders*, 190, 142-146.
- Malla, A. K., Takhar, J. J., Norman, R. M., Manchanda, R., Cortese, L., Haricharan, R., . . . Ahmed, R. (2002). Negative symptoms in first episode non-affective psychosis. *Acta Psychiatrica Scandinavica*, 105, 431-439.
- Markova, I. S., & Berrios, G. E. (1992). The assessment of insight in clinical psychiatry: A new scale. *Acta Psychiatrica Scandinavica* 86, 159-164.

- McCreadie, R. G., & Ohaeri, J. U. (1994). Movement disorder in never and minimally treated Nigerian schizophrenic patients. *British Journal of Psychiatry*, *164*, 184-189.
- McEvoy, J. P., Apperson, L. J., Applebaum, P. S., Ortlip, P., Brecosky, J., & Hammil, K. (1989). Insight in schizophrenia. Its relationship to acute psychopathology. *Journal of Nervous and Mental Disorders*, *177*, 43-47.
- McEvoy, J. P., Freter, S., Merritt, M., & Apperson, L. J. (1993). Insight about psychosis among outpatients with schizophrenia. *Hospital and Community Psychiatry*, *44*, 883-884.
- McEvoy, J. P., Johnson, J., Perkins, D., Lieberman, J. A., Hamer, R. M., Keefe, R. S., . . . Sharma, T. (2006). Insight in first-episode psychosis. *Psychological Medicine*, *36*, 1385-1393.
- Melzer, D., Fryers, T., & Jenkins, R. (Eds.). (2004). *Social Inequalities and the Distribution of Common Mental Disorders*: Psychology Press.
- Michalakeas, A., Skoutas, C., Charalambous, A., Peristeris, A., Marinos, V., Keramari, E., & Theologou, A. (1994). Insight in schizophrenia and mood disorders and its relation to psychopathology. *Acta Psychiatrica Scandinavica*, *90*, 46-49.
- Mintz, A. R., Dobson, K. S., & Romney, D. M. (2003). Insight in schizophrenia: a metaanalysis. *Schizophrenia Research*, *61*, 75-88.
- Mutsatsa, S. H., Joyce, E. M., Hutton, S. B., Webb, E., Gibbins, H., Paul, S., & Barnes, T. R. (2003). Clinical correlates of early medication adherence : West London first episode schizophrenia study. *Acta Psychiatrica Scandinavica*, *108*, 439-446.
- Palmer, B. W., & Jeste, D. V. (2006). Relationship of individual cognitive abilities to specific components of decisional capacity among middle-aged and older patients with schizophrenia. *Schizophrenia Bulletin*, *32*, 98-106.
- Reicher, B., Adeyemi, J. D., Lawal, R. A., Famuyiwa, O. O., Haruna, A. Y., & Jibodu, M. O. (2003 ). Emotional reactions of relatives to schizophrenic patients in Lagos, Nigeria. *African Journal of Medicine and Medical Sciences*, *32*, 7-11.
- Sanz, M., Constable, G., Lopez-Ibor, I., Kemp, R., & David, A. S. (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., Bhugra, D., & David, A. S. (2004). Culture and insight revisited. *British Journal of Psychiatry*, *184*, 107-109.
- Schennach-Wolff, R., Jager, M., Seemuller, F., Obermeier, M., Messer, T., Laux, G., . . . Reidel, M. (2009). Attitude towards adherence in patients with schizophrenia at discharge. *Journal of Psychiatric Research*, *43*, 1294-1301.
- Schwartz, R. C. (2000). Insight and suicidality in schizophrenia: a replication study. *Journal of Nervous and Mental Disorders*, *188*, 235-237.
- Schwartz, R. C., & Petersen, S. (1999). The relationship between insight and suicidality among patients with schizophrenia. *Journal of Nervous and Mental Disorders*, *187*, 376-378.
- Schwartz, R. C., & Smith, S. D. (2004). Suicidality and psychosis: the predictive potential of symptomatology and insight into illness. *Journal of Psychiatric Research*, *38*, 185-191.
- Sevy, S., Nathanson, K., Visweswaraiyah, H., & Amador, X. F. (2004). The relationship between insight and symptoms in schizophrenia. *Comprehensive Psychiatry*, *45*, 16-19.
- Smith, T. E., Hull, J. W., Israel, L. M., & Willson, D. F. (2000). Insight, symptoms, and neurocognition in schizophrenia and schizoaffective disorder. *Schizophrenia Bulletin* *26*, 193-200.
- Smith, T. E., Hull, J. W., & Santos, L. (1998). The relationship between symptoms and insight in schizophrenia: a longitudinal perspective. *Schizophrenia Research*, *33*, 63-67.
- SPSS, SPSS Inc, Chicago III.
- Stefanopoulous, E., Lafuenta, A. R., Saez Fonseca, J. A., & Huxley, A. (2009). Insight, global functioning and psychopathology amongst in-patient clients with schizophrenia. *Psychiatric Quarterly*, *80*, 155-165.

- Suleiman, T. G., Ohaeri, J. U., Lawal, R. A., Haruna, A. Y., & Orija, O. B. (1997). Financial cost of treating out-patient with schizophrenia in Nigeria. *British Journal of Psychiatry*, 171, 364-368.
- Usall, J., Araya, S., Ochoa, S., Busquets, E., Gost, A., & Márquez, M. (2001). Gender difference in a sample of schizophrenic outpatients. *Comprehensive Psychiatry* 42, 301-305.
- Watson, P. W. P., Garety, P. A., Weinman, J., Dunn, G., Bebbington, P. E., Fowler, D., & al., e. (2006). Emotional dysfunction in schizophrenia spectrum psychosis: the role of illness perceptions. *Psychological Medicine*, 36, 761-770.
- Weiler, M. A., Fleisher, M. H., & McArthur-Campbell, D. (2000). Insight and symptoms change in schizophrenia and other disorders. *Schizophrenia Research*, 45, 29-36.
- Wiffen, B. D., Rabinowitz, J., Fleischhacker, W. W., & David, A. S. (2010 ). Insight: demographic differences and associations with one-year outcome in schizophrenia and schizoaffective disorder. *Clinical Schizophrenia and Related Psychoses*, 4, 169-175.
- Xiang, Y. T., Wang, Y., Wang, C. Y., Chiu, H. F., Chen, Q., Chan, S. S., . . . Ungvari, G. S. (2012). Association of insight with sociodemographic and clinical factors, quality of life, and cognition in Chinese patients with schizophrenia. *Comprehensive Psychiatry*, 53, 140-144.
- Yen, C. F., Chen, C. S., Ko, C. H., Yeh, M. L., Yang, S. J., & Yen, J. Y. (2005). Relationships between insight and medication adherence in outpatients with schizophrenia and bipolar disorder: a prospective study. *Psychiatry and Clinical Neurosciences*, 59, 403-409.
- Zhang, G. Y., Tan, Y. G., & Liu, C. W. (2009). Analysis of the factors influencing the Insight of Schizophrenia (in Chinese). *Sichuan Mental Health*, 30, 110-112,.