Title page**Title: Psychosis: clinical insight and beliefs in immigrants in their first episode.****Running title: Beliefs about psychosis in immigrants****Authors:**

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Abstract

Aim: Lack of insight into illness is frequent in psychotic disorders and seen as part of their primary pathology. The recognition of symptoms as psychotic, and beliefs about treatment alternatives, is also influenced by socio-cultural factors. Here we examined clinical insight into illness and beliefs about psychosis in immigrants in their first episode of psychosis compared to a reference group.

Methods: 277 first episode psychosis participants were recruited to this cross-sectional study; 40 first- and 40 second-generation immigrants from Europe, Americas and Oceania (n=37), Asia including Turkey (n=28), or Africa (n=15). The Birchwood Insight Scale was used to measure clinical insight and “The Attitudes and Beliefs about Mental Health Problems”, schizophrenia version to assess socio-cultural beliefs.

Results: Immigrants did not differ from the reference sample in clinical insight. After controlling for education level first generation immigrants were less likely to recognize psychotic symptoms (OR 2.9; Wald = 8.977, df 1, p =.003) and viewed hospitalization (OR 5.2; Wald = 20.388, df 1, p =.001) and treatment by a psychiatrist (OR 4.9; Wald = 6.609, df 1, p =.01)) as less beneficial than the reference group. Immigrants from Asia held more alternative explanations (OR 0.3; Wald = 6.567, df 1, p=.010). There were significantly stronger associations between clinical insight and socio-cultural beliefs in the reference group.

Conclusions: Socio-cultural beliefs about psychosis in immigrants in first episode psychosis calls for more tailored information to this group, and emphasize the importance of treatment interventions involving both a cultural and personal perspective of insight.

Keywords: Psychotic disorders, Schizophrenia, Bipolar Disorder, Emigrants and Immigrants,

Introduction:

Lack of insight is frequent in psychotic disorders and viewed as part of the primary psychopathology (1). Insight into illness is also an important predictor of relapse and outcome in first episode psychosis (FEP) (2, 3). Several factors are associated with insight (4), and here transcultural aspects may be important (5). Cultural tradition and values influence our understanding of psychotic symptoms (6), and these may differ for immigrants compared to the reference population in their new country of residence. Immigrants from Southeast Asia and the African Caribbean living in the UK are found to attribute psychosis more often to external factors than patients with European background (7). Thus insight into psychosis also seems to be influenced by socio-cultural variations in illness models (8). This is of importance, as immigrants have heightened risk for psychosis (9), and also can have longer duration of untreated psychosis than others (10, 11)

Insight is a multifaceted phenomenon. Clinical insight is related to acceptance of one's condition as being a medical illness or psychiatric syndrome, and often measured in terms of awareness of illness, recognition of symptoms and treatment compliance (12). Another perspective refers to socio-cultural explanatory models about the aetiology, categorization and treatment needs associated with psychotic symptoms (6). These beliefs may influence many aspects of human behaviour such as help-seeking, patient satisfaction and coping strategies (6), which are found to vary within and between immigrants groups (13, 14). The two perspectives exist side by side in the same individual, but we have little knowledge of their relationships. Studies of insight in immigrants with psychosis are therefore an important area for further study.

Our main aim in the current study was to evaluate aspects of insight in immigrants during their first treated episode of a psychotic disorder (FEP), compared to a Norwegian FEP reference group. First we assessed if immigrants with FEP had less self-reported clinical insight than FEP from the reference populations. Secondly we assessed if immigrants with FEP patients had different socio-cultural beliefs about psychosis in general, and if possible differences were associated with immigration per se or

with a specific heritage. Finally we investigated the association between clinical insight and socio-cultural beliefs about psychosis in FEP from the immigrant and reference populations' separately.

Methods:

The current study is part of the ongoing "Thematically Organized Psychosis" (TOP) Study at the University of Oslo, and is approved by the Regional Committee for Medical Research Ethics and the Norwegian Data Inspectorate. Our research methodology conformed to The Code of Ethics of the World Medical Association, Helsinki Declaration (WMA, 2008). All participants gave informed consent.

Sample

A total of 277 FEP participants were recruited to this study between 2006 and 2010. Of these 223 had a first episode schizophrenia-spectrum disorder (not more than one year since first adequate treatment for a psychotic disorder), and 54 first episode psychotic bipolar patients who had previous or current psychotic episodes (not more than one year since first adequate treatment for a manic episode). Other inclusion criteria were: Age 18 – 65 years, IQ > 70, SCID verified psychotic symptoms across diagnostic group and ability to understand a Scandinavian language. Exclusion criteria were organic aetiologies to the psychotic illness including substance induced psychosis.

The immigrant group (n=80) consisted of 50 % first generation immigrants (foreign born with foreign born parents), and 50% second generation immigrants (born in Norway with one (n=30) or both parents born abroad (n=10)). Immigrant heritage was categorized as: European descent (Europe, Americas and Oceania) (n=37), Asia (n=28), or Africa (n=15), as outlined in earlier publications (15). The remainder of participants, termed the reference group, were all born in Norway to Norwegian born parents and of European descent.

Instruments

Diagnosis was assessed with The Structured Clinical Interview for DSM-IV (SCID), affective, psychotic and substance abuse sections (A-E) (16). The reliability and validity of DSM-IV diagnoses across ethnic groups was ensured through participation in an international training program (17). The overall agreement for DSM-IV diagnoses was 82 % with an overall kappa of 0.77 (95% CI: 0.60 – 0.94). Global symptom severity and function were rated with the Global Assessment of Functioning Scale (GAF) split version (18), with the GAF- Function (GAF-F) used as a measure of functioning.

Symptoms were assessed with the Positive and Negative Syndrome Scale (19). Active psychosis was defined as scores of 4 or higher on any one of the items measuring delusion (p1), conceptual disorganization (p2), hallucinatory behaviour (p3), and unusual thought content (g9).

“Birchwood Insight Scale” was used to measure clinical insight through self-report (20) and is shown to have good to fairly good internal consistency for schizophrenia and bipolar I disorder respectively (21). This is a continuous scale where total scores over 9 indicate good insight. There was satisfactory internal consistency for the total scale (Cronbach’s α .76, 8 items, N = 265), and the subscales awareness of illness (Items 2 and 7; Cronbach’s α .57, N = 271) and treatment compliance (items 3 – 6; Cronbach’s α .74, N = 266). Internal consistency for relabelling of psychotic symptoms was low (Cronbach’s α .40, N = 269) and therefore taken out of further analysis.

Beliefs about psychosis and treatment were measured with the self-report questionnaire Attitudes and Beliefs about Mental Health Problems, schizophrenia version (22). Participants read a vignette describing a person with psychotic symptoms and then filled out a questionnaire concerning their opinion of the nature of the symptoms and the treatment needed. Responses were categorized in accordance to previous reports (23). In this study we report on participants beliefs about psychosis and beliefs about its treatment. Beliefs about psychotic symptoms were based on participants qualitative response when asked “What is wrong with the person in the vignette, if anything?” and categorized by the first author as; Psychosis (mentions psychosis, schizophrenia, delusions, paranoid or hallucinations), mental disorder (depression, anxiety, obsession/compulsion) or other/alternative

explanations which included answers which were concrete (n=19), situational including loneliness (n=16) or where uncertain/had other explanations (n=14). The participants were then asked about their views concerning the helpfulness of various interventions for the person in the questionnaire ("Beliefs about treatment"). These answers were dichotomized into seeing the intervention as helpful or not helpful (the last included both harmful and neither helpful nor harmful).

Statistics

Statistical analysis was performed using SPSS 21.0 (IBM and Corp, Released 2012). The level of significance was pre-set to < 0.05 , two sided. Missing data for the continuous Birchwood insight scale (Treatment compliance =11, Awareness of illness= 6, Total =12) was replaced with mean values for the group in question. Missing data for categorical beliefs about psychosis are reported in Table 3. For correlation analysis we excluded cases listwise.

One-way analysis of variance (ANOVA) and chi-square statistics were used to compare levels of the Birchwood insight scale and categorized beliefs about psychosis across immigrant groups based on background (first- vs. second-generation immigrants vs reference population) and heritage (Asia, Africa, Europe (the latter including both immigrants with European descent from Europe, Americas and Oceania as well as the reference group). Standardised residuals were used as post-hoc tests for categorical variables (24). Duration of untreated psychosis was skewed so the median is reported and non-parametric tests were applied.

To assess associations between the two measures we used Pearson's correlations within each patient group, and calculated the differences between these dependent correlations with Steger's Z (25). To analyse the relationships between beliefs about psychosis and immigrant generation and heritage we conducted binary logistic regression analyses. The relevant covariant applied for each immigrant categorization were based on chi-square residuals > 2 , which were first generation immigrants for the generation analyses and Asian immigrants for the heritage analysis. For immigrant categorization

we controlled for education and GAF-f and for heritage analysis we controlled for education as possible confounders as these variables differed significantly between groups.

Results

There were few significant differences in socio-demographic and clinical measures between immigrants and the reference group (Table 1). Immigrants had significantly less education than the reference group; while second generation immigrants were more likely to be of European heritage and had significantly better general function as measured by the GAF, compared to both other groups. Immigrants did not show significantly different symptoms levels than the reference group when measured with the PANSS, and were not more often in an active psychotic phase of the illness. Post hoc analysis did not show more active psychosis in participants from Asia (n=22, 79%) or Africa (n=12, 80%) compared to the rest of the sample (n=142, 61%) although there was a trend ($\chi^2 = 5.309$, df 2, $p = .070$).

All participants showed medium levels of clinical insight as measured by the Birchwood insight scale, and none of the group means were above the established cut-off for “good insight” (Table 2). There were no significant differences in clinical insight measures between first- and second-generation immigrants, or between Europeans, Asians and Africans.

Beliefs about psychosis or about treatment did not differ significantly based on gender or diagnostic category (i.e first episode broad schizophrenia spectrum psychotic disorder vs. first episode psychotic bipolar disorder). We found that first generation immigrants held significantly different beliefs about psychosis than both second generation immigrants and the reference group, also after controlling for differences in education and GAF function (Table 3). They were less likely to hold beliefs that the person in the vignette had a psychotic disorder (OR 2.8; Wald =8.382, df 1, $p = .004$), but still viewed the symptoms as representing a mental disorder (OR .33Wald = 9.053, df 1, $p = .003$). Significantly fewer first generation immigrants believed that hospitalization (OR 5.2; Wald = 20.287, df 1, $p < .001$) or seeing a psychiatrist (OR 4.5; Wald = 5.809, df 1, $p = .016$) would be helpful compared to

participants who were brought up in Norway (both second generation immigrants and the reference population).

Follow-up analyses indicated that FEP from Asian heritage (first- and second generation immigrants) was carrying the major difference between immigrants and the reference group (Table 3). After controlling for education level, FEP with Asian heritage were still less likely to hold beliefs that the person in the vignette had a psychotic disorder (OR 4.5; Wald = 10.745, df 1, $p = .001$), and more likely to explain the symptoms as a result of other mental disorders (OR 0.4; Wald = 5.211, df 1, $p = .022$) or hold alternative explanations (OR 0.3; Wald = 6.567, df 1, $p = .010$). In terms of treatment they were less likely to believe that seeing a psychiatrist (OR = 6.7; Wald = 7.709, df 1, $p = .005$) or being hospitalized (OR 3.7; Wald = 9.428, df 1, $p = .002$) could be helpful. We did not find that immigrants from the African continent differed significantly from the reference population in beliefs about psychosis or on views of which treatment could be helpful.

There were no significant differences across samples in beliefs about anti-psychotic medication or psychotherapy as helpful treatment. The differences in views on the benefit of these treatments were primarily influenced by function levels as inclusion of GAF-f to these models produced significance. Detailed analyses can be provided on request. In the reference population group, there were significantly stronger associations between clinical insight and socio-cultural beliefs about psychosis compared to the immigrant groups (Table 4). Birchwood insight scores did not contribute significantly when they were entered into a binary logistic regression model with correct recognition of psychotic symptoms in the Beliefs about psychosis vignette, in a model also including immigrant status and education level (OR 1.1; Wald = 2.371, df 1, $p = .124$ for Birchwood insight scores).

Discussion

The main finding of the current study was that FEP patients with immigrant background (either first- or second generation) did not differ from FEP from the reference population in level of clinical insight into their own illness, as measured with the self-report based Birchwood Insight Scale. However, first

generation immigrants in general and all immigrants (first and second generation) from Asia had more difficulties in correctly identifying symptoms in others as psychotic. They also differed in concern to what types of treatment they viewed as helpful as measured with the questionnaire Attitudes and Beliefs about Mental Health Problems, schizophrenia version. Immigrants did not differ in regards to seeing pharmacological treatment as helpful.

The few previous studies in this area have reported lower clinical insight in immigrants and ethnic minority groups. Lower clinical insight has been found in FEP patients from ethnic minorities (26, 27); however their immigration status was not specified. Both of these studies included patients who had longer illness histories and the minority group in both cases was primarily of African descent. Participants to the current study were in their first year of treatment and differences in insight based on minority status may be an aspect of the illness that develops over time. Treatment compliance is an important aspect of clinical insight and has been found to be lower in immigrants in a Spanish study (28), and in patients from ethnic minorities in the United States of America (29). In both of these studies the group with least adherence to medication were also of African heritage. These findings differ from our study, as we found that immigrant status and heritage did not influence clinical insight when this was measured with the Birchwood insight scale. . It is clear that all of the other studies referred to found differences in minorities groups of African heritage. It is reasonable to suggest that our lack of differences on the Birchwood insight scale may be a consequence of too small a group with African heritage in our sample.

One study of clinical insight in South India concluded that the relationship between clinical insight, awareness of illness in others and other clinical variables is similar in that population to that found elsewhere, but that assessment of clinical insight does not capture cultural explanatory frameworks (8). Our findings support this notion, as we did find difference in beliefs about psychosis even though the groups were similar in terms of clinical insight. This was not mainly an effect of education, and thus more probably reflects cultural views held across generations. It is interesting that the different

beliefs we found in the immigrants from Asia were passed on to the second generation. In this sample most of the participants from Asia have Pakistani background which is one of the largest immigrant groups in Norway (30). They are thus a large sub-culture and this could explain why possible alternative beliefs persist over generations.

Our study shows that immigrants were less likely to categorize the symptoms in the vignette as part of a psychotic disorder, and that particularly immigrants from Asia held other or alternative explanations. In our study, “alternative explanations” contains uncertain or concrete answers. Uncertainty could be associated with language comprehension or lack of knowledge concerning psychiatric concepts. In addition, lower levels of abstraction are previously found in immigrants with psychosis (15) and this could explain why we see more concrete answers to the open questions in this group. Finally this category also included beliefs that the symptoms displayed by the person in the vignette were a reaction to the person’s current situation. Viewing symptoms as context dependent may be influenced by socio-cultural attitudes and beliefs.

Fewer immigrants also viewed hospitalization or seeing a psychiatrist as a helpful treatment alternative. This is of interest as a higher proportion of both first and second-generation immigrants are more likely to quit treatment delivered by first episode services (31). However almost 80 % of the whole sample, including all immigrant groups, believed that anti-psychotic medication would be a helpful treatment for the symptoms exhibited. This corresponds with previous findings from our group showing that 85% of FEP showed full or partial adherence to medication when it was objectively measured using serum concentration levels (32).

Lack of clinical insight is related to longer duration of untreated psychosis, which we previously found to be higher in first generation immigrants (10). Future studies should explore the relationship between beliefs about psychosis and duration of untreated psychosis in different sub-cultures, as possible association can be of importance for early identification and treatment. In our study we also found that clinical insight was not directly associated with socio-cultural beliefs about psychosis in

FEP, also including the immigrant subgroup. This supports findings that people with schizophrenia simultaneously hold multiple, sometimes contradictory beliefs, about causation and treatment of the disorder (33). Our findings thus support notions of a complex interaction between culture and context calling for a more nuanced framing of insight across cultural groups (34).

Specific limitations to our study are the lack of immigrant participants that were not proficient in a Scandinavian language, thus excluding an unknown number of immigrants with psychosis. The results may have differed if they had been included, and it is reasonable to expect that this group may hold more alternative explanations than those participating here, i.e. strengthening the current findings. They may also have differed significantly from other groups on the Birchwood insight scale and our results cannot be generalized to more marginalized immigrant groups who are non-proficient in the national language. We did not find that immigrants from Africa differed significantly from the reference group in beliefs about psychosis, and this is most probably due to the small size of this group. Findings in concern to the African immigrants sample should be considered with caution, and should be studied further in a larger sample. The strengths of this study is its well-defined immigrant group from a large catchment area providing equal health services to the whole population, independent of economic background, and assessment of both clinical insight and socio-cultural beliefs.

Clinical insight into illness differs from socio-cultural beliefs about psychosis and treatment needs in immigrants with psychosis, and supports the need for enhanced cultural competence among clinicians working with patients with immigrant background (35). Immigrants thought of hospitalization and psychiatric treatment as less beneficial than the reference group and this should be of specific interest to clinicians working with this group. Our findings also give call for more tailored information to the immigrant population about psychotic conditions as this may result in shorter DUP.

Acknowledgements

Funding for this study was provided by the Kristian Gerhard Jebsen Foundation, the Research Council of Norway (Grants #181831, 147787/320, 167153/V50) and the Regional Health Authority for South-Eastern Norway Health Authority (Grants #2010-074 and #2006-258). Neither had any role in study design, data collection, analysis and interpretation, writing of the report, or the decision to submit the paper for publication. None of the authors declare a conflict of interest. We would like to thank the participants in the TOP study and the clinicians collaborating in patient recruitment for their contribution. We would also like to thank Thomas Bjella, Eivind Bakken, Ragnhild Storli, and Jeanette Haatveit for administration and data processing.

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Table 1 Sociodemographic and clinical differences between first and second generation immigrant and the reference sample

	Reference	Second generation	First generation	Statistics
	N=197	N=40	N=40	P<.05
Mean $\pm$ Standard Deviation				ANOVA
Age	27.2 $\pm$ 8.8	25.2 $\pm$ 6.9	28.8 $\pm$ 10	ns
Education	12.9 $\pm$ 2.6	11.8 $\pm$ 2.5	12.3 $\pm$ 3.3	F=3.09 ^{2/274}
GAF-Function	43.2 $\pm$ 11.2	48.2 $\pm$ 12.3	41.3 $\pm$ 8.1	F=4.53 ^{2/274}
GAF-Symptom	42.3 $\pm$ 12.6	45.8 $\pm$ 13.4	41.3 $\pm$ 9.3	ns
PANSS total	63.4 $\pm$ 16.8	58.3 $\pm$ 14.0	64.1 $\pm$ 14.5	ns
Number (%)				Chi-square
Male	119 (60)	21 (53)	24 (60)	ns
Asian		9 (32)	19 (68)	ns
African		7 (47)	8 (53)	ns
European		19 (68)	9 (32)	5.49 ¹
Schizophrenia-spectrum	155 (79)	35 (88)	33 (83)	ns
Active psychosis	123 (62)	30 (75)	23 (58)	ns
				Non-parametric
Median (Range)				median test
DUP weeks	29 (0-2040)	59 (1-1039)	64.5 (0 – 780)	ns

N DUP=260, N PANSS = 273; First episode schizophrenia-spectrum (vs.First episode bipolar), ANOVA = One-way analysis of variance, DUP = Duration of untreated psychosis, GAF = Global Assessment of Functioning Scale

Table 2. Clinical insight into illness (Birchwood insight scale) in immigrants and the reference sample.

Birchwood insight scale	Reference	Second generation	First generation	One way Analysis of Variance
Means $\pm$ Standard Deviation	N=197	N=40	N=40	
Birchwood total	7.7 $\pm$ 2.0	8.0 $\pm$ 1.6	7.6 $\pm$ 1.9	ns
Treatment compliance	2.7 $\pm$.78	2.9 $\pm$.73	2.6 $\pm$.70	ns
Awareness of Illness	2.5 $\pm$.96	2.6 $\pm$.82	2.5 $\pm$.89	ns
	Europe	Asia	Africa	
	N=234	N=28	N=15	
Birchwood total	7.7 $\pm$ 1.9	7.8 $\pm$ 1.7	8.3 $\pm$ 1.9	ns
Treatment compliance	2.7 $\pm$.76	2.9 $\pm$.74	2.9 $\pm$.74	ns
Awareness of Illness	2.6 $\pm$.94	2.4 $\pm$.86	2.5 $\pm$.95	ns

Table 3. Beliefs about psychosis in immigrants and the reference sample.

Beliefs about psychosis	Sample	Reference	Second	First	Chi-square	p
	Total		generation	generation	(df3)	
Psychotic disorder	277	122 (62)	24 (60)	14 (35)	14.340	.002
Mental disorder	277	34 (17)	7 (18)	16(40)	12.468	.006
Other/alternative explanation	277	31 (16)	8 (20)	10(25)	1.595	.660
Anti-psychotic helpful	267	162 (84)	34 (90)	27 (73)	13.808	.003
Hospitalization helpful	271	158 (81)	31 (82)	18 (46)	20.172	.001
Psychiatrist helpful	272	189 (97)	37 (95)	34 (87)	11.293	.010
Psychotherapy helpful	270	185 (96)	36 (95)	35 (90)	9.432	.024
		Europe	Asia	Africa		
Psychotic disorder	277	146 (62)	7 (25)	7 (47)	15.502	.001
Mental disorder	277	41 (18)	11 (39)	5 (33)	7.668	.022
Other/alternative explanation	277	36 (15)	10 (36)	3 (20)	6.006	.050
Anti-psychotic helpful	267	192 (84)	19 (79)	12 (80)	.409	.815
Hospitalization helpful	271	181 (79)	14 (52)	12 (80)	9.062	.011
Psychiatrist helpful	272	222 (97)	23 (85)	15 (100)	8.063	.018
Psychotherapy helpful	270	219 (96)	23 (85)	14 (93)	4.292	.117

N (%) are presented. Chi-square reported is from a binary regression controlling for education level in both groups and GAF-f for groups based on immigrant background.

Table 4. Pearson correlations between “Birchwood insight scale” total and “Attitudes and Beliefs about Mental Health Problems”, schizophrenia version items for immigrants and the reference sample.

	Reference	Second	First	Steigers Z _H -test
		generation	generation	
	N = 193	N = 38	N = 39	
Psychotic disorder	.050	.135	.128	-0.98
Mental disorder	.090	-.037	-.150	2.74*
Other/alternative explanation	-.170*	-.172	.029	2.14*
Hospitalization helpful	.250**	.215	-.031	3.72**
Psychiatrist helpful	.158*	.326*	-.224	5.45**

** p >.001 * p <.05