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The relative contributions of clinical and socio-cultural factors to treatment delay among patients with schizophrenia in south-east Nigeria

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Abstract

The study aimed to determine the relative contributions of clinical and socio-cultural factors to treatment delay among patients with schizophrenia. A cross-sectional study of 360 patients who had no previous contact with psychiatric services. All factors associated with long duration of untreated psychosis (DUP) in univariate analyses at the significant level of $p < 0.05$ were entered into a regression model to explore their association with long DUP. For each unit increase in belief in the magico-spiritual cause of schizophrenia, the odds for treatment delay increased by approximately five times; and for each unit increase in the negative symptoms, the odds for treatment delay increased by approximately three times. Culturally influenced beliefs about the causes of schizophrenia, and the perceptions of its symptoms could independently and substantially influence the first choice of treatment, and this could also substantially contribute to treatment delay.

Key Words: Predictor Variables, Schizophrenia, Treatment-delay, south-east Nigeria.

Introduction:

Duration of untreated psychosis (DUP) has been defined as the period from the first clear description of psychotic phenomena, from any source to first contact with western mental health services and the beginning of adequate treatment (Morgan, Mallett & Hutchinson, 2005; Marshall, et al. 2005; Norman & Malla, 2001). It is considered that usually within 1–2 years after the onset of mental illness, an individual with "psychosis" would have commenced or received treatment but this duration varies across different settings (Norman & Malla, 2001). Early detection of mental health disorders in the population has become more imperative in view of increasing opportunity to benefit from professional intervention (Sauter, Murphy & Hurrell 1990).

Moreover, treatment delay has been reported as having deleterious effects (Lincoln & McGorry, 1999; Wyatt, 1991a; Scully, et al. 1997) with consequent worsening of the prognosis (Abiodun, 1995). Therefore, reducing delays in early detection and treatment might improve long-term outcome (McGlashan & Johnnnessen, 1996; Birchwood, Todd & Jackson, 1998; Loebel, et al. 1992; Crow; MacMillan, Johnson & Johnstone, 1986; Wyatt, 1991b; Stahl, 1994; Dell'Osso & Altamura, 2010).

The reasons for treatment delays are complex but may be largely dependent on symptomatology, age, diagnosis, gender (Lincoln & McGorry, 1995), location of residence and ease of accessibility to mental health facility (Makanjuola, 1985; Clausen & Yarrow, 1955). Of great importance also are socio-cultural and educational factors among others, which doubtless interact in a complex manner.

Deep-seated cultural beliefs in the supernatural causes of mental illness are the major barrier to psychiatric treatment (Banerjee & Roy, 1998; Razali & Najib, 2000). Such values and beliefs could influence treatment-seeking behaviour, treatment outcomes, and even determine the way mental health is practiced (Gater et al, 1991), especially in developing countries where patients would more likely seek help for mental health problems from traditional and faith-based healers (Gater et al, 1991; Gureje et al, 1995).

Traditional healers are the practitioners of traditional medicine. The World Health Organization defines traditional medicine as: the health practices, approaches, knowledge and beliefs incorporating plant, animal and mineral-based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose and prevent illnesses or maintain well-being (World Health Organization. "Fact sheet no. 134: Traditional medicine".2008.).

Faith-based healers are practitioners of faith healing. Faith healing is healing through spiritual means. Believers assert that the healing of a person can be brought about by religious faith through prayer and/or rituals that, according to adherents, stimulate a divine presence and power toward correcting disease and disability (Village, Andrew, 2005). Belief in divine intervention in illness or healing is related to religious belief. In common usage, faith healing refers to notably overt and ritualistic practices of communal prayer and gestures (such

as laying on of hands) that are claimed to solicit divine intervention in initiating spiritual and literal healing (Village, Andrew, 2005).

The aim of the study was to determine the relative contributions of some of the factors that were associated with DUP among patients with schizophrenia, which we consider, is important as it could facilitate the planning and implementation of early and appropriate intervention programmes based on empirical knowledge. Factors associated with DUP could be different across diverse settings; it, therefore, becomes necessary to investigate them from the south-east Nigeria perspective.

Materials and Methods

This was a cross-sectional study carried out at the Federal Neuropsychiatric Hospital, Enugu, Enugu State located in south-east Nigeria. The hospital is the only 'stand-alone' Federal Government-owned Psychiatry Hospital in the Southeast, which provides psychiatric services to residents of Enugu state, and also receives referrals from all the five south-eastern states of Nigeria and beyond. It could be said to be the premier psychiatric services centre in terms of attention and reasonable funding by the Federal Government of Nigeria and its existence is well known to the people of the zone. There are seven other general tertiary health institutions in the five states that make up the south-east zone in Nigeria, and each of them has units for psychiatric services, but their combined patients load may be equal to what one could have at the Federal Neuropsychiatric Hospital, Enugu. The southeast is one of the six geopolitical zones in Nigeria. It is primarily inhabited by people of Igbo ethnic group who speak Igbo, and is one of the three largest and most-influential ethnic groups in Nigeria. (Nigeria has 36 states that constitute the federating units, and these 36 states are grouped into six divisions or geopolitical zones). Central Intelligence Agency (2012), put the Igbo people at 18% of the total population of 170 million, or approximately 30 million. Hitherto, Igbo people had been mainly adherents of African Traditional Religion (ATR); however, following colonisation, the impact of African traditional religion in the southeast Nigeria seemed to have dwindled, and a good number of Igbo people became adherents of Christendom.

Ethical Issues

Approval for the study was obtained from the ethical committee of the Federal Neuropsychiatric Hospital, Enugu. A written informed consent was also obtained from patients or the next-of-kin before the study instruments were administered.

Inclusion/Exclusion Criteria

Patients aged 15 years and above, that met ICD-10 (World Health Organization, 1993) diagnostic criteria for schizophrenia and who had no previous history of contact with any western mental health care facility were included in the study; while patients who had sought for care from hospitals or drug stores and were probably exposed to psychotropic medication at some point were excluded. The information on previous mental health service contact of any form was either through self-report, family report, or both.

Sample identification and recruitment procedures:

The recruitment of participants was done at the wards and emergency clinic of the Federal Neuropsychiatry Hospital Enugu, which holds every day of the week. Out-patients were interviewed on the first day of contact while those on admission were interviewed within 48hours of admission. All consecutive patients that came to the emergency clinic with a diagnosis of schizophrenia, between May 2010 and January 2011, who met the inclusion criteria, were recruited into the study. The patients were first seen by trainee psychiatrists who made a diagnosis of schizophrenia. After complete description of the study, written informed consent was sought and obtained from the participants; those who gave their consent were recruited into the study.

The decision of the patients to participate or not to participate in the study did not in any way influence the

treatment they received. A total of 369 participants were approached and enrolled; however, two withdrew their consent, and seven were excluded when it was found that they had used psychiatric services or had been exposed to psychotropic drugs at some point in the past.

Instruments

The Encounter Form on Pathways to Mental Health Care Questionnaire adapted from the Encounter Form developed for the World Health Organisation (WHO) cross-cultural study on pathways to mental health care (Gater et al, 1991) and an adapted questionnaire11 to establish the duration of untreated psychosis were used for the study. Socio-demographic Questionnaire eliciting age, gender, marital status, educational attainment, employment status and area of residence was administered.

The Munich Version of the Composite International Diagnostic Interview (M-CIDI), (Wittchen & Pfister, 1997) which was produced for the World Health Organisation (WHO) and the United States (US) Alcohol Drug Abuse and Mental Health Administration by the US National Institute for Mental Health was used for the assessment of mental disorders and to provide schizophrenia diagnoses according to ICD-10 (World Health Organization, 1993).

The patients' current mental state was assessed using the Positive and Negative Syndrome Scale (PANSS), (Kay, Fiszbein & Opler, 1987). Patients with schizophrenia were classified as predominantly positive or negative type according to the valence of their Composite Scale score. The positive symptoms included seven symptom clusters of delusions, conceptual disorganization, hallucinatory behaviour, excitement, grandiosity, suspiciousness/persecution and hostility. The negative symptoms included seven symptom clusters of blunted affect, emotional withdrawal, poor rapport, passive/apathetic social withdrawal, difficulty in abstract thinking, lack of spontaneity and flow of conversation and stereotyped thinking.

Data Collection Procedures

The recruitment of participants was done at the wards and emergency clinic of the Federal Neuropsychiatry Hospital Enugu, which holds every day of the week. Out-patients were interviewed on the first day of contact while those on admission were interviewed within 48hours of admission. The patients were interviewed by two psychiatrists (PCO and ACN), who both had had previous training in the administration of these instruments; their inter-ratter reliability was satisfactory (PANNS, $r = 0.86$; M-CIDI, $r = 0.84$).

All consecutive patients that came to the emergency clinic between May 2010 and January 2011, who met the inclusion criteria, were recruited into the study. Patients diagnosed as having schizophrenia by the attending resident doctors on duty at the point of first contact at the emergency clinic had their diagnosis confirmed by using the Schizophrenia module of the Munich Version of the Composite International Diagnostic Interview (M-CIDI).

Following the confirmation of the diagnosis with M-CIDI, the Encounter Form on Pathways to Mental Health Care Questionnaire and the Positive and Negative Syndrome Scale (PANSS) were administered. The duration of untreated psychosis (DUP) was established for each patient by determining from the patients and family members the onset of observable psychosis. Adapted questionnaire on duration of untreated psychosis (Loebel, et al. 1992), was used, relating to the date, age at onset and mode of onset of the psychotic symptoms, and these were ascertained by interviews with the patients and family members.

Onset of illness was determined in two ways. First, we asked patients and their family members when the patient (or a family member) first experienced (or noticed) behavioural changes which, in retrospect, appear to have been related to the patient's becoming ill. Second, after explaining psychosis in clear language, we asked when the patient (or a family member) first experienced (or noticed) psychotic symptoms. When differences

between patients' and family members' responses occurred, a consensus decision was made by the research group (Loebel, et al. 1992).

Analysis

The data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 16 (IBM, USA). The test of association between dependent categorical and independent (mixture of categorical and continuous) variables was done by using the odds ratio test. A very wide range and heavily skewed DUP largely influenced the statistical tests employed in the analysis of our sample that made it appropriate to use non-parametric statistics; more so that DUP is time-to-event data. The dependent variable was dichotomised with short DUP representing ≤52 weeks and long DUP representing ≥53 weeks Norman & Malla, 2001; Larsen, Johannessen, & Opjordsmoen, 1998; McGlashan 1999a). The independent variables were dichotomized into binary numbers. They included: age at presentation (≤40 years, ≥41 years); age at onset (≤29 years, ≥30 years); area of residence (urban area, rural area); gender (male, female); duration of movement from home to the psychiatric hospital (≤120 minutes, ≥121 minutes); belief about the cause of the illness (natural, magico-spiritual); Clinical characteristics (negative symptoms, positive symptoms); Educational level of patients (no formal education, ≤6 years of formal education; ≥ 7 years of formal education. Others are marital status (married, not married), employment status (employed, not employed), religion (Christian, not Christian), and the treatment initiator (patient, the next-of-kin).

After the odds ratio test, all the independent variables that had significant association with the dependent variable (DUP), following the bivariate analysis at the significance level of P <0.05 (see Table 1) were entered into a logistic regression model. A binomial logistic regression was done, in order to determine the relative contribution of each of the independent variables on the dependent variable (DUP).

Results:

The mean age of the patients was 34.81 ±12.05 years, with a range of 15-59 years and mode of 20-29; while the median age at onset of psychosis was 29 years. DUP had a median of 48 weeks and had a positively skewed distribution and a range of 4-960 weeks. About 61% (220) of the participants had visited faith-based healers while about 15% (53) had visited traditional healers as their first-treatment option. Most (96.9%) of the respondents were Christians, while 3.1% professed African Traditional Religion (ATR). About 42% of the participants live in urban areas while nearly 58% live in rural areas. The majority (57.5%) of the participants were never married while 70% had at least secondary school education with about 37% of the participants being unemployed.

For the odds ratios and 95% confidence intervals in table 1, while one of the independent variables (religious affiliation) had higher odds outcome, it was observed that the association between the independent variable and dependent variable (short DUP or long DUP) was not significant at alpha of 0.05.

Table 1: Odds ratios, 95% confidence intervals and p-value for various independent variables comparing the short DUP* to the long DUP*

Outcome Measure (Odds Ratio Short DUP / Long DUP)	Odds Ratio	95% CI	p <0.05
Age at Presentation (≤40yrs, ≥40yrs)	.393	.243 - .637	<.001
Age at Onset (≤29yrs, ≥29yrs)	.570	.375 - .867	0.008
Gender (Male, Female)	.561	.369 - .852	0.006
Marital Status (Single, Married)	.709	.451 - 1.112	0.134

Education (≤6yrs, ≥6yrs)	1.532	.971 - 2.416	0.048
Employment Status (Employed, Unemployed)	.784	.507 - 1.211	0.272
Area of Residence (Rural Area, Urban Area)	.425	.276 - .655	<.001
Religion (Christianity, African Traditional Religion)	1.076	.322 - 3.592	0.861
Duration of Movement From Home to Psychiatric Hospital (≤120 Minutes, ≥120 Minutes)	.407	.260 - .636	<.001
Treatment initiator (Patients, Relatives)	.528	.248 - 1.125	0.094
Belief About Cause (Natural Causation, Magico-spiritual Causation)	.174	.096 - .315	<.001
Clinical Characteristics (Negative, Positive Symptoms)	3.131	1.699 - 5.771	<.001

52 weeks* was chosen as the cut off point for long duration of untreated psychosis. Short DUP $\leq$ 52 weeks and Long DUP $\geq$ 53 weeks.

The Omnibus test of model coefficient is statistically significant ($p < .0005$), and the Hosmer and Lemeshow test is not statistically significant ($p = .624$), suggesting that the logistic regression model is a good fit.

The explained variation in the dependent variable based on our model ranges from 21.4% to 28.5%, using either the Cox & Snell R2 or Nagelkerke R2 methods, respectively.

From these results in table 2, it is clear that belief about the cause of schizophrenia ($p = <.001$), clinical characteristics ($p = <.001$), duration of movement from home to psychiatric hospital ($p = <.001$) and age at the time of presentation ($p = .020$) added significantly to the model/prediction; but area of residence ($p = .099$), gender ($p = .253$), educational level ($p = .078$), and age at the time of onset ($p = .630$) did not add significantly to the model.

Belief about the cause of schizophrenia

For each unit increase in belief in the magico-spiritual causation of schizophrenia, the odds increased by approximately five times (OR = 4.681, 95% C. I = 2.454 – 8.927, $p = <.001$).

Clinical Characteristics

For each unit increase in the negative symptoms, the odds increased by approximately three times (OR = 3.401, 95% C. I = 1.752 – 6.603, $p = <.001$).

Duration of Movement from Home to Psychiatric Hospital

For for each unit decrease in the duration of movement between home and psychiatric hospital, the odds of long DUP decreased by 58.9%; controlling for other variables in the model (OR = .403, 95% C. I = .244 – .665, $p = <.001$).

Age at Presentation to Psychiatric Hospital

For each unit decrease in the age at presentation to the psychiatric hospital, the odds of long DUP decreased by 59.3%; controlling for other variables in the model (OR = .407, 95% C. I = .191 – .866, $p = .020$).

Table 2: The Effect of Independent Variables had on the Model

Variables in the Equation								
		B	S.E.	Wald	df	p	Exp(B)	95.0% C.I. for EXP(B)
Step 1[a]	**Age at the time of presentation**	-.900	.386	5.440	1	.020	.407	.191 - .866
	Age of patient at the onset of illness	-.153	.318	.233	1	.630	.858	.460 - 1.600
	Duration of movement between patient's home and psychiatric hospital	-.910	.256	12.660	1	<.001	.403	.244 - .665
	Positive and Negative symptoms	1.224	.338	13.077	1	<.001	3.401	1.752 - 6.603
	Belief about the cause of schizpphrenia	1.543	.329	21.953	1	<.001	4.681	2.454 - 8.927
	Gender	-.292	.256	1.304	1	.253	.747	.452 - 1.233
	Rural/ Urban Area	-.456	.276	2.723	1	.099	.634	.369 - 1.089
	Level of education attained	-.562	.319	3.097	1	.078	.570	.305 - 1.066
	Constant	1.499	1.030	2.118	1	.146	4.478	

a. Variable(s) entered on step 1: Urban/Rural area, Age of patient at the onset of illness, Level of education, Age of patient at the time of presentation, Gender, Duration of movement between patient's home and psychiatric hospital, Belief about the cause of the illness, Positive and Negative symptoms.

Discussion

Duration of untreated psychosis (DUP) was initially defined as the period from the first clear description of psychotic phenomena, from any source to first contact with western mental health services and the beginning of adequate treatment (Norman & Malla, 2001). Studies have consistently shown intervals of one to two years between the onset of psychotic symptoms and the start of adequate treatment Norman & Malla, 2001; Larsen, Johannessen, & Opjordsmoen, 1998; McGlashan 1999a). In this study, one year was chosen as the cut off mark for long DUP since the median DUP here was 48 weeks, a finding also reported in a similar study done in India (Srivastava, et al. 2009). In another related study, in the West, Craig et al. (2000), reported a median DUP of 14 weeks for patients with schizophrenia spectrum disorders. Srivastava et al. (2009), attributed their finding to India being a developing country where stigma is rampant, awareness is poor, accessibility of care is limited and resources for mental health are less than sufficient. Similar reasons could also apply for the same observations in Nigeria that is also a developing country with similar socio-economic circumstance.

Other factors for long DUP may include belief in the magico-spiritual causation of mental illness and poor recognition and acceptance of negative symptoms as symptoms of mental illness. These may have influenced the pathway to care with about 76% of the participants using traditional healers and faith-based healers as their first-treatment options, in spite of the fact that over 70% had some western education. Our observation was in contrast to other studies in western countries where health-care professionals were predominantly the first contact (Singh & Grange 2006; Lincoln, Harrigan & McGorry, 1998). Participants, who first contacted faith-based healers and traditional healers, usually present with long DUP.

The role of families in the initiation of treatment and long DUP was not significant, when it was subjected to the binomial logistic regression. The reason for this is not clear even though it is a well known fact in developing countries that families play an important role in help-seeking that could lead to short or long DUP depending on other independent variables.

Long DUP decreased by 59.3% for each unit decrease in the age at presentation to the psychiatric hospital. The reason for this is not very apparent, but it may be due to a seeming increase in the public awareness about mental illness in recent times in south-east Nigeria, with more younger doctors opting to specialise in psychiatry unlike in the past; in other words, earlier presentation may perhaps be partly related to this trend, although most of the psychiatrists live in urban areas. Also, younger people with schizophrenia are more likely to be students or live in the urban areas where the activities of these psychiatrists are felt more, and this could have probably increased their chances for access to early treatment.

Also the popularity of the use of information and communication technology among the young ones could have made some contributions to the difference in the long DUP between the young and the older generations. The ubiquity of information and communication technologies (ICT) in the recent decades in many aspects of social life, especially among the younger generation, has made it easy for the younger generations to seek information, communicate, engage, interact and entertain themselves through many technological applications. The pervasiveness of the ICT in our society, especially in the urban areas, could have contributed to facilitate the wider and quicker dissemination of information related to the prevention and promotion of healthy lifestyle, which mental health could have benefited from, albeit very low penetration and impact.

The belief in the magico-spiritual causation of schizophrenia was about five times more likely to lead to long DUP compared to the belief in natural causation of schizophrenia. The attribution theory of magico-spiritual causation of schizophrenia is very strong among the Igbos, and this could be due to their cultural and religious beliefs. In line with this, Nwoye (2011) and Prince (1964), in their studies reported that their participants attributed suffering and illness to magical and supernatural causes among others. Beliefs in supernatural factors are prominent in sub-Saharan Africa (Adewuya & Makanjuola, 2009), and psychological manifestations are described as "spiritual problems;" and logically spiritual problems require spiritual solutions, including exorcism (Uwakwe, 2007).

The explanatory model of mental illness, therefore, largely influences the help sought (Thara, Padmavati & Srinivasan, 2004). Deep-seated cultural beliefs in the supernatural causes of mental illness have been a major barrier to psychiatric treatment (Banerjee & Roy, 1998; Razali & Najib, 2000), as most patients first present to traditional and faith-based healers. Consultation with traditional and religious healers often results in significant delays before patients present at the psychiatric clinic (Abiodun, 1995; Kurihara, Kato, Reverger, & Tirta, (2006b); Mbewe, 2006b; Burns, Jhazbhay & Emsley, 2011).

Each unit increase in the predominance of negative symptoms of schizophrenia relative to the positive symptoms was three times more likely to lead to long DUP in patients with schizophrenia. In Nigeria, relatives may bring patients with aggressive and intolerable behaviour to treatment facilities, but could compensate and cope with a family member who has schizophrenia with negative symptoms and this could result in treatment delay. Also, the belief about the illness or stigma associated with mental illness could influence the health care sought (Erritty & Wydell 2013); or even abandoning the patient in the house.

As observed by Erritty and Wydell, (2013) and Addington et al. (2002), people generally do not confidently recognise some negative symptoms as signs of mental illness. Most people do not see those with negative symptoms as having any need for mental health services, and patients with predominantly negative symptoms would more readily consult with traditional healers and faith-based healers first which could lead to long DUP (Burns, Jhazbhay & Emsley, 2011; Erritty & Wydell 2013; Addington, Addington, Mastrigt, Hutchinson , & Addington, 2002; Melle, et al. 2008).

Research from the social sciences shows that a common response to the development of psychosis within families is an attempt to normalise and adjust to the associated behaviours (Morgan, 2006). Where the development of psychosis is characterised more by negative symptoms and is spread over a long period, and the sub-

sequent transition less dramatic, the potential for families and others to adjust and consequently delay treatment is no doubt greater (Craig, et al, 2000), this could be due to wrong interpretations of the problems by relatives and significant others as was noted elsewhere (Larsen, Johannessen & Opjordsmoen, 1998). This might make the relatives adjust to a deviant behaviour that they might regard as a bad habit or a character problem to be tolerated, and such an interpretation would lead to subsequent treatment delay (Rhi, 1995).

The significant association between longer DUP and longer length of time being spent to access psychiatric services could be due to poorly organised transportation system and dearth of mental health facilities at the community level. In Nigeria, most of the few existing psychiatric facilities are located in the urban centres (Ayorinde, Gureje & Lawal, 2004), whereas the majority of the people live in the rural areas (The World Bank, 2012); thereby increasing the barriers in accessing mental health services: the easier the journey to psychiatric facilities, the more likely to have shorter treatment delay. Previous studies have also reported an association between long DUP and longer length of time being spent to access psychiatric services (Makanjuola, 1985; Clausen &Yarrow, 1955).

Conclusion

The development of early detection and intervention services with the aim of shortening the treatment delay should be an urgent challenge for Nigerian public health officials. The belief system, mental health awareness creation, and increasing the resources for mental health as well as transport infrastructure are areas that would require urgent attention.

Limitations

We did not control for some patient-related factors such as lack of insight, poor social adjustment or other psychopathologies that might contribute to treatment delays.

We did not investigate the role of substance use (or indeed other possible factors such as stigma in determining DUP).
As is common with all cross sectional studies, the covariates we considered cannot be given any causal link to DUP.
These limitations would need to be considered in future research.

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