

# Clinical and Social Correlates of Duration of Untreated Psychosis in First-episode Psychosis Patients

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## Abstract

**Introduction:** This study aims to examine the socio-demographic and clinical correlates of the duration of untreated psychosis (DUP) in first-episode psychosis patients in an Asian country. **Material and Methods:** Three hundred thirty-four patients from the Early Psychosis Intervention Programme (EPIP) of Singapore were recruited for the study. Socio-demographic data were collected and patients were diagnosed using SCID I (Structural Clinical Interview for DSM-IV Axis I Disorders). Other assessment scales were used to assess the level of psychopathology, overall functioning and the awareness of mental illness. **Results:** Mean (SD) DUP was 16.3 (31.5) months. Patients who were single, unemployed, or brought by the police had a significantly longer DUP. Patients with a diagnosis of schizophrenia had a longer DUP as compared to patients with other forms of psychosis. The better functioning patients as indicated by a higher Global Assessment of Functioning score and those who were more insightful had a shorter DUP. **Conclusions:** This study suggests that certain socio-demographic features and clinical diagnosis may determine DUP.

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**Key words:** Psychotic disorder, Schizophrenia

## Introduction

First-episode studies of schizophrenia have reported that the longer the duration of untreated psychosis (DUP), the poorer the response to antipsychotic medication and treatment outcome.<sup>1</sup> The findings of these studies have led to the assertion that by reducing DUP, treatment outcome for schizophrenia and other related psychosis might be improved substantially;<sup>2</sup> hence, the need for early recognition and intervention in first-episode psychosis has become increasingly important. Shortening of DUP would also reduce the unnecessary suffering of patients and enable an earlier identification of the illness and an earlier access to psychiatric services.

The determinants of DUP are likely to be multi-factorial, and still relatively understudied. Verdoux and others<sup>3</sup> have reported that treatment delay might be related to socio-demographic and clinical factors. Elucidating and understanding these contributing factors to treatment delay would aid in the development of an effective and efficient strategy to reduce DUP.

In our study, we examined the socio-demographic, social and clinical correlates of DUP in patients with first-episode psychosis, in an attempt to elucidate the factors contributing to a prolonged DUP.

## Materials and Methods

A total of 334 patients with first-episode psychosis were recruited for the study from the Early Psychosis Intervention Programme (EPIP) in Singapore – an island state in Southeast Asia with a population of 3.4 million where 77.4% of its population are Chinese, 14.2% Malays, 7.2% Indians, with the remaining 1.2% of other ethnicities. The programme was launched in 2001 at the Institute of Mental Health and Woodbridge Hospital, the only state psychiatric hospital in Singapore.

The patients included in the study were those consecutively accepted into the programme and who fulfilled the following criteria: (1) age between 18 and 40 years, (2) presentation with first-episode psychotic disorder with no or prior minimal treatment i.e., not exceeding

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1 week, and (3) no present history of substance abuse.

Socio-demographic data of the patients were collected from the medical records and the DUP of the patients was established by the doctors and case managers based on interviews with the patients and families. The DUP is operationalised as the time between the onset of psychotic symptoms (i.e., hallucinations, delusions, and/or thought disorder or disorganised behaviour) and the time when a definitive diagnosis and treatment were established. They were diagnosed by the psychiatrist-in-charge using the SCID I (Structural Clinical Interview for DSM-IV Axis I Disorders).<sup>4</sup> As part of their routine assessment, patients were assessed with the following scales: PANSS (Positive and Negative Syndrome Scale),<sup>5</sup> GAF (Global Assessment of Functioning scale) (SCID axis V) and SUMD (Scale for the Assessment of Unawareness of Mental Disorder)<sup>6</sup> at baseline.

Analysis was done using the Statistical Package for Social Sciences (SPSS) version 10.1. Statistical significance was set at  $P < 0.05$ . Non-parametric test and correlation test were used to study the correlation of DUP with gender, ethnicity, living situation, marital status, employment status, referral pathway through which psychiatric services were accessed, diagnosis of illness, overall functioning and awareness of mental illness.

**Results**

Of the 334 patients included in the study, 160 (47.9%) were female and 174 (52.1%) were male. The study population comprised 73.4% Chinese, 19.2% Malays, 5.4% Indians and 2% belonged to other ethnic groups. The mean (SD) age was 28.2 (6.6) years, with an age range of 14 to 41 years. The mean DUP was 16.3 (31.5) months, median of 4 months. There was no significant association of DUP with gender, ethnicity and living situation of patients. However, patients who were single had a longer DUP than those who were married ( $\chi^2 = 6.841, P = 0.033$ ). Employed patients had a significantly shorter DUP than unemployed patients ( $\chi^2 = 26.140, P < 0.001$ , Kruskal-Wallis test). Patients who were brought by the police had a longer DUP as compared to those with other sources of referral ( $\chi^2 = 10.049, P = 0.008$ , Kruskal-Wallis test), of which 94% were staying with family. A longer DUP was also associated with a diagnosis of schizophrenia, as compared to other forms of psychoses ( $\chi^2 = 63.89, P < 0.001$ ). We found no correlation with the DUP and the total PANSS scores, nor with the scores for the Positive and Negative Subscales. For overall functioning, patients having a higher baseline GAF scores for disability had a shorter DUP ( $P = 0.034, r = -0.12$ ). A lower level of insight (SUMD social awareness sub-scale) of the patients prolonged DUP ( $P = 0.007, r = -0.17$ ) (Table 1).

Table 1. Clinical and Demographic Data of Patients

	Frequency n (%)	Mean ± SD (DUP in months)	P values
Gender			
Male	174 (52.1)	18.7 ± 37.0	0.324
Female	160 (47.9)	12.8 ± 21.6	
Ethnicity			
Chinese	245 (73.4)	15.6 ± 30.4	0.976
Malay	64 (19.2)	16.7 ± 29.4	
Indian	18 (5.4)	18.0 ± 43.2	
Others	7 (2.1)	11.9 ± 21.6	
Living situation			
Self	13 (3.9)	52.2 ± 90.4	0.065
Others*	321 (96.1)	14.3 ± 24.7	
Marital status†			
Single	269 (80.5)	17.6 ± 34.4	0.033
Married	65 (19.5)	9.8 ± 16.8	
Employment status§			
Employed	108 (32.3)	10.9 ± 30.7	<0.001
Unemployed	226 (67.7)	20.3 ± 30.0	
Referral pathway‡			
Self	20 (6.0)	13.2 ± 17.9	0.008
Friends/relatives	130 (38.9)	16.3 ± 31.1	
GP/Private psychiatrist	66 (19.8)	8.6 ± 23.0	
Police	49 (14.7)	28.5 ± 45.9	
Others	69 (20.6)	14.9 ± 24.6	
Diagnosis of illness§			
Schizophrenia	228 (68.3)	21.4 ± 36.6	<0.001
Schizoaffective disorder	16 (4.8)	9.3 ± 10.5	
Psychotic disorder	46 (13.8)	2.7 ± 7.2	
Mood disorder	35 (10.5)	6.4 ± 9.7	
Delusional disorder	9 (2.7)	8.4 ± 12.7	

\*Families

† $P < 0.005$ , ‡ $P < 0.01$ , § $P < 0.001$

**Discussion**

In our study, the mean DUP of the patients was 16.3 months, which did not differ very much from the reported DUP (13.7 months) in other studies.<sup>7,8</sup> However, it should be mentioned that comparisons across studies are fraught with complexities – with different studies using different methodologies, different criteria, and different characteristics of the study populations.

In our study, gender did not prolong DUP. This is contrary to the reports by Loebel and others,<sup>1</sup> de Haan and others,<sup>9</sup> and Boldero and Fallon<sup>10</sup> where gender differences were associated with varying DUP. However, Craig and others<sup>11</sup> suggest that there was inconsistent evidence with regard to the relationship of DUP with gender.

A Japanese study did not find DUP to be associated with the living situation<sup>7</sup> and the authors postulated that DUP was still mainly dependent upon patients’ own efforts and attitudes to seek treatment, and hence the influence of relatives on patients seeking treatment might play a minor

role. A somewhat contrary view was expressed by de Haan and others<sup>9</sup> who suggest that if an individual's own effort in seeking treatment failed, the role of relatives was subsequently vital. In our study, we found that living alone was not associated with a longer DUP but being married was associated with a shorter DUP. That the majority of the patients were staying with relatives is consistent with Burnett et al's (Asians in England)<sup>12</sup> and Philips' (Chinese in China) findings.<sup>13</sup> As only 13 (3.9%) of the patients were staying on their own, this small sample size could have led to a type 2 error. We also found that not only did those who were brought in by the police have longer DUP, the majority were staying with relatives, suggesting that families would try to manage the patient's illness until their condition become too severe or difficult and whereupon they would resort to calling the police.

In addition to being married, we also found that being employed was associated with a shorter DUP. A limitation of our study is that we did not assess the pre-morbid functioning; although marital status and work history are pre-morbid characteristics. These characteristics would have also contributed to the overall functioning which we found – as assessed by the GAF – to be significantly associated with DUP. Patients with better functioning capabilities have also been found to be more aware of their illness<sup>14</sup> and this would likely lead them to seek help earlier. Another limitation is the lack of the use of a structured instrument to establish the DUP and we also did not assess the premorbid adjustment of the patients which is a potential confounding factor of the DUP. As this study was done among patients seeking help, our findings may be generalisable to other patients with first-episode psychosis in other settings.

In our study, we found that those patients with schizophrenia had a significantly longer DUP. Norman and Malla<sup>15</sup> reported that patients with schizophrenia have a longer DUP, which is associated with social withdrawal, poor functioning and prominent negative symptoms. Moreover, patients diagnosed with schizophrenia have poorer insight into their illness<sup>16</sup> which in turn could have resulted in a delay in help seeking and thus prolonged DUP.

## Conclusion

Longer DUP in our patients does not seem to result from the severity of psychopathology but rather from the type of psychotic disorder. The presence of certain socio-

demographic features like marital status and employment status, as well as overall functioning and level of insight also influence the DUP. Any early intervention initiative should therefore take these factors into consideration.

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