

## Research Article

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## Outcome of First Episode Psychosis in Bangladesh-Report from A Pioneer Tertiary Referral Service

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### ABSTRACT

Limited research exists looking at outcome data in First Episode Psychosis in low income countries. This prospective analytical study looks at remission rates in psychotic symptoms on Positive and Negative Symptom Score (PANSS) following first contact with a pioneer Early Intervention Service based at a tertiary referral center in Dhaka, Bangladesh (DEIS). The study found that the remission rate at 6 months was 62% on PANSS. The study also found that a shorter Duration of Untreated Psychosis (DUP) was positively correlated with improved remission rates at 3- and 6-months follow-up. As a secondary finding, the study established that 62% of individuals attending the service had attempted to access spiritual or traditional healers prior to entering into mental health services.

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### Background

Global research into outcomes in first episode psychosis, and the role of Early Intervention services in influencing outcomes continues to expand. A PubMed search for 'first+episode+psychosis' demonstrates 4315 potential papers (Data from ncbi.nlm.nih.gov), with a year on year increase in the number of published materials since the late 1990s (Data from ncbi.nlm.nih.gov). Despite this, limited information on outcomes in first episode psychosis exists in low-income countries. The authors are aware of only one published study looking at outcome data in first episode psychosis in the South Asia Subcontinent and no current body of research exists in Bangladesh [1]. Bangladesh is defined as a low-income country as per World Health Organization (WHO) guidance, with a GDP per capital of \$1532, placing it 149th out of 187 countries according to IMF annual report. There is limited specialist mental health input in rural Bangladesh, with health care being provided by

a network of Upazilla health centers staffed by primary care physicians or medical assistants with limited mental health training [2]. Several public sector tertiary referral centers based in larger cities provide medical outpatient and inpatient mental health services. The tertiary referral centers receive referrals from the Upazilla health centers, from other medical specialties, or through self-referral. Service set-up at these tertiary referral centers is primarily clinic based, with limited community interventions or support [2]. It is known that many individuals in Bangladesh seek health care from traditional or spiritual healers little is known about contact with such alternative therapists in the First Episode Psychosis period [3].

In Bangladesh, and consistent with a large number of low-income countries, it is not possible or realistic to establish a community based Early Intervention Service model on which the majority of

the existing body of research is based [1,4]. The reasons for this include the financial implications of such a community service, existing staff provision and training, and geographical issues. The Dhaka Early Intervention Service (DEIS) is a pioneer service in South Asia. The service is a clinic based tertiary referral service, established in 2018, based at the Uttara Adhunik Medical College Hospital (UAMCH). The DEIS aim was to replicate interventions of a community service, where possible, within the clinic-based setting in Outpatient department of Psychiatry.

This study focuses on the period surrounding the First Episode of Psychosis. Diagnostic uncertainty, the impact of early treatment, the educational importance for the patient and their carers, and the potential to integrate biological, psychological and social treatments are highlighted as of key significance in this period. Research has demonstrated that early treatment can reduce harm caused by social disruption and critical incidents, such as suicide attempts [5]. There is consistent evidence that earlier intervention can improve outcome over the first few years of the disorder [1-6]. This study attempts to be the first to look at the period of First Episode Psychosis in Bangladesh.

### Objective

The primary outcome measure of the study was to establish remission rates in First Episode Psychosis (FEP) at six months following first contact with the Dhaka Early Intervention Service (DEIS) as defined on Positive and Negative Symptom Score (PANSS). Secondary outcome measures included; to establish the duration of untreated psychosis (DUP) of individuals entering into the service, and to establish whether there was any link between DUP and outcome at six months. This study also looked at the pathway into the DEIS, including establishing if individuals had contacted a traditional or spiritual healer prior to accessing more mainstream services.

### Methods

The study design was a prospective analytical study conducted at the DEIS service at the Uttara Adhunik Medical College Hospital, Dhaka. Ethical approval was granted by the UAMCH Ethics Committee on November 2020 to April 2021. The study aimed to capture real-life clinic attendance, and treatment as usual, hence all patients attending the DEIS between these periods were considered as a potential recruit. Patients were approached by the researcher at clinic and assessed for interest in the study, and against the inclusion and exclusion criteria. The inclusion criteria included age 14-70, with a clinical diagnosis of first episode psychosis (FEP). The definition of FEP was taken as 'a score of 4 or higher on one of the positive items in PANSS at baseline, with manifestation of psychotic symptoms. In addition, these symptoms must have lasted throughout the day for several days or several times a week, not being limited to a few brief moments' [6]. Total positive and negative PANSS scores were also identified. In terms of exclusion criteria, individuals who were unable to provide informed consent were excluded. Individuals who presented with severe cognitive impairment (identified as a MMSE of less than 25/30) or psychosis secondary to a clear physical cause were excluded. Individuals with a previous episode of psychosis were excluded. Substance misuse was not an exclusion criterion, in order that this study replicated real-life findings.

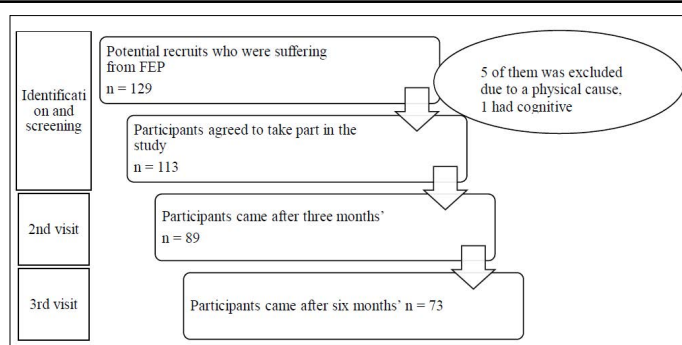


Figure 1: demonstrates the flow through the study

Baseline demographic data was taken, including; sex, age, marital status, occupational status, medication, physical health diagnoses, and family history of a diagnosed mental disorder. Participants were asked to provide information on their pathway into services, to include had they ever seen a traditional or spiritual healer prior to seeking mainstream medical intervention. Duration of Untreated Psychosis (DUP) was assessed at baseline and was defined as the time interval between onset of psychotic symptoms and initiation of medical treatment [7]. Adequate treatment was defined as giving an antipsychotic drug for sufficient time and amount so that it would lead to clinical response in the average non-chronic patient with a diagnosis of Schizophrenia [8]. In addition to the PANSS score at baseline, the researchers completed a SCID-CV (Structured clinical interview for DSM-IV Axis-I disorders – Clinician Version) and diagnosis assigned as per Diagnostic and Statistical Manual of Mental Disorder (DSM-IV) and Global Assessment of Functioning (GAF) scale. All researchers had received training in the PANSS, SCID-CV and GAF.

All participants were subject to treatment as usual under the DEIS and were invited back to the DEIS at 3 and 6 months from baseline. A repeat PANSS (including positive and negative symptom subscores), SCID-CV and GAF scale were applied. For those participants who had not had DUP established at baseline, this was calculated. The PANSS score was used to establish the progression of psychosis, and participants were graded at 6 months as a) not in remission (ongoing psychotic symptoms), b) relapsing remitting, or c) in remission. Remission was defined on PANSS as no score higher than 3 on any item for at least two months. Data analysis was performed by Statistical package for social science, version-17 for Windows [8].

### Results

One hundred and twenty-nine potential participants were identified at the DEIS. Of these, 113 participants met the eligibility criteria at baseline, with 5 potential participants being excluded due to a physical etiology behind their psychosis, and 1 potential recruit was excluded with a MMSE score of <25. A further 10 potential recruits were unable to provide written consent at this stage. A total of 89 recruits attended at 3 months, and 73 at 6 months, with total drop-out rate of 35% after 6 months.

In terms of baseline data, 57.5% of recruits were male, with a mean age of 26.12 years (S.D. 9.81). 57.5% patients were single. The most common occupation among respondents was homemaker (27.4%) followed by student (24.7%). 31 (70%) of participants had attempted to access help from other sources prior to attending the DEIS. Out of these, 51 (70%) of participants responded by stating that they had accessed a spiritual or traditional healer prior to accessing mainstream mental health services. 20.5% of participants had a family history of mental disorder. Amongst the

participants, Schizophreniform disorder was most common diagnosis on baseline SCID- CV (49.3%); Psychotic disorder Not Otherwise Specified was 26% of patients, with but on subsequent follow ups it went down to 19.2% after 6 months. 12.7% of participants had received a diagnosis of Brief psychotic disorder on SCID-CV by 6 months. In terms of positive and negative subscales, positive symptoms (22.93± 7.47) were higher at baseline compared to negative subscale (15.26± 5.95). So, positive symptoms were more prominent at baseline than negative symptoms. Positive subscale improvement in subsequent follow ups were better than negative subscale scores (Table 3). The findings were similar to [1-10].

**Table 1: Comparison of positive & negative symptoms outcome in FEP patients**

		Mean 3 month follow up improvement (%)	Mean 6 month follow up improvement (%)
Positive subscale	From Baseline	44%	59%
Negative subscale		27%	40%
General psychopathology subscale		33%	45%
PANSS total		35%	48%
GAF scale		2.5 times (34%)	4 times (56%)

In terms of primary outcome measure, at 6 months, a total of 41 participants (56.2%) were in remission on PANSS score. (Table 1). In terms of symptoms of psychosis, the most frequent duration of untreated psychosis was between 1-6 months (67%).

Table 2 looks at remission rates at 6 months in those that presented with DUPs of <1 month, 1-6 months and >6 months. In the group with DUP of <1 month, 78.6% had achieved remission on PANSS at 6 months. Of those with DUP of > 6 months, only 1 participant (10%) was in remission at 6 months.

**Table 2: Distribution of duration of present psychiatric illness within in remission and not in remission**

Duration of present psychiatric illness (in month)	In remission	Not in remission	p value*
<1	11 (78.6%)	3 (21.4%)	0.004
1-6	29 (59.2%)	20 (40.8%)	
>6	1 (10%)	9 (90%)	
Mean ± SD	1.95 ± 1.82	4.93 ± 4.44	
Median	1.5	3.0	

\*Mann-Whitney U test was done to measure the level of significant

Pearson’s correlation test was done at baseline, 3 months and 6 months, to find out whether there was any relation with duration of untreated psychosis and Global Assessment of Functioning (Table 2) and with total PANSS score, and with Positive and Negative sub-scores on PANSS. At baseline and at 3 months’ follow-up, positive correlation was found between total PANSS score and duration of untreated psychosis and negative co-relation was found in between duration of untreated psychosis and GAF score.

### Discussion

At the end of six months, the total dropout rate was 35%. Other similar duration FEP follow up studies have shown dropout rates of 20% in India [1]. And between 16.5% to 31% in Western studies [11, 12]. The authors consider that a higher dropout rate in this study was to be expected, given that a larger proportion (60.3%) of the recruits were from a rural area, being geographically removed from the DEIS, with potential financial, time and transport implications. The outcome of psychotic symptoms is not known in those lost to follow-up. It could be presumed that some individuals may have recovered from illness, or may have sought mental health care elsewhere.

Baseline demographic data can be compared to existing international studies. [9-13]. who also found a slight male predominance (54% and 65% respectively), although the other South Asia Subcontinent Early Intervention study [1]. Reported a female predominance of 70%. Other studies have demonstrated

a mean age of onset of psychotic symptoms of between 22.9-32.8 years [9-13]. Found a mean age group of 29.7 years among no affective first episode psychosis subjects in India. The 57% of participants that were single compares to (51% respondents) with similar levels of employment [1]. Some western studies have found higher rates of being single and Singh et al found 87% and 67% in Canada and Britain respectively. Unemployment was 88% in the latter study [12].

Although it is known that individuals in Bangladesh do access spiritual or religious healers prior to entering into mainstream services, the authors believe that this is the first time that such figures have been established in the First Episode Psychosis Population in Bangladesh, or other low- income country.

Duration of untreated psychosis (DUP) was an important factor in the study and the most frequent DUP we found was between 1-6 months (67%) [14]. also found a DUP of less than 6 months in 67% patients. In another study, median DUP was 20 weeks [15]. Significant correlation (Pearson) was found in 1st and 2nd follow up of FEP subjects. In 1st follow- up positive correlation was found in between PANSS score and DUP and negative co-relation was found in between DUP and GAF. It suggested that as PANSS total was high in those who had long DUP whereas GAF scale was high in case of short DUP. It was established that good improvement can be seen early in treatment and the plateauing of psychopathology after 6 months found mean DUP

of 11.4 months for the remission group and 56.4 months for the non-remission group [1]. In a one-year follow up study, found mean DUP of 114 weeks, median DUP was 26 weeks [11]. Among the subjects, 56% were in remission after one year. Also, DUP was 3 times longer (180 weeks) in no remissive subjects and it had significant relationship to several outcome variables: 1year remittance, level of positive PANSS symptoms, general PANSS symptoms and GAF. These results are similar to our study though we found a much higher rate of remissive patients with shorter DUP found median DUP of 31 days and there was no recovery in patients with DUP of six months or longer [11].

In our study, positive subscale ( $22.93 \pm 7.47$ ) was higher at baseline compared to negative subscale ( $15.26 \pm 5.95$ ) and positive subscale improvement in subsequent follow ups were better than negative subscale scores (On 1st follow up: 44% vs 27% and on 2nd follow up: 59% vs 40%). These finding is similar to who found positive symptoms to remit earlier and the reduction was less for negative subscale [1]. Most first-episode studies have found an association between longer DUP and more severe positive symptoms but results are inconsistent regarding any relationship with negative symptoms Among the 73 patients, at the end of six months, 67.1% patients were diagnosed as having Schizophrenia and other psychotic disorders [16]. Though during the course of study, there were variation of diagnosis from time to time during follow ups. At baseline, Schizophreniform disorder was most common (49.3%); but on subsequent follow-ups it went down to 19.2% after 6 months [1]. found paranaoid schizophrenia to be most common (36%) whereas schizophreniform disorder was found to be relatively low (23%).also found schizophrenia to be more prevalent than no affective psychosis and other psychotic disorder [9]. In a study found Schizophrenia among 45.6% and other no affective psychosis among 54.4% [11].

### Conclusion

This is the first study looking at outcomes in First Episode Psychosis in Bangladesh, and follows the establishment of the Dhaka Early Intervention Service. The authors believe that this is one of few studies looking at First Episode in Psychosis in a low-income country, where it is often not possible to establish Early Intervention services which replicate those in the West, where the majority of the existing evidence base originates. Although an Early Intervention Service in a low-income country can provide specialist diagnostic and treatment input, the mainstay of therapies remains as medication, and brief psychoeducation available in clinic, with limited formal talking and social therapies, and limited community input. Despite this, this study has demonstrated comparable, and in some cases higher, rates of remission when compared to Early Intervention Services in the West. It is clear that as EIS services develop globally, larger and longer-term follow up studies are needed to establish efficacy in low-income countries [17].

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### Conflict of Interest

The authors declare no conflict of interest. The study was funded locally. No external grants were received.

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