

Early Psychosis in Nova Scotia.

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Recent research findings indicate that the early detection and treatment of individuals with a first episode of psychosis (FEP) will improve the long term clinical outcomes of psychotic disorders, reducing overall health care costs as well as the burden of illness to individuals. However, specialized assessment and treatment is required. The authors are involved in initiatives to make early assessment and intervention more accessible in Nova Scotia. As part of these efforts, a survey was sent to all psychiatrists in Nova Scotia with the aim of better understanding how FEP is currently managed in this province. The survey results indicate: 1. Based on Canadian averages, the expected number of new cases of psychosis in Nova Scotia would range from 83 to 139 new cases annually. We found that less than half of these appear to be cared for by psychiatrists in our province; 2. The demographics of these individuals are consistent with the literature in that there was a higher incidence of FEP among males, and that they presented at a younger age than females; and 3. Risperidone is the antipsychotic of choice by experts in FEP and was the most frequently prescribed antipsychotic for the treatment of FEP by Nova Scotian psychiatrists. The results suggest that increasing the flow of FEP cases to psychiatrists for specialized assessment and treatment could result in significant improvement in overall outcomes for these individuals in Nova Scotia.

Mental illness is a major health problem in Nova Scotia. Serious mental disorders involving psychosis, including schizophrenia, can be particularly devastating as they begin mostly in young people and often run a chronic, life long course.

Studies conducted worldwide show that approximately one percent of the general population have a psychotic disorder (1). Nova Scotia has over 500,000 people in the age group at greatest risk (16 to 54 years) (2), translating to more than 5,000 people with psychotic illness. In addition, estimates of incidence rates in Canada range from 15 to 25 individuals per 100,000 population in the age group at risk per year (3,4). According to these figures, we can expect between 83 and 139 new cases of psychosis each year in Nova Scotia.

In the past year, under the direction of one of the authors (LCK), research and clinical service aimed at early detection of psychosis and optimizing treatment has been conducted. With colleagues in the Department of Psychiatry at Dalhousie University, the Nova Scotia Hospital, the Queen Elizabeth II Health Sciences Centre and the IWK-Grace Health Centre, we have embarked on an effort to decrease the burden of these disorders on those with the illness, their families, the health care system and society.

In this paper, we describe some of the characteristics and care of FEP individuals in Nova Scotia. The focus on early detection of psychosis arises because there is now substantial evidence that early treatment may lessen the severity of psychotic disorders (5). If this is the case, early detection of new cases will be critical. Hence, it is important to understand how new cases are identified in Nova Scotia and develop methods for making early assessment and optimal intervention possible.

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The Importance of Early Detection

In the past decade, there has been renewed interest in the early stages of psychotic illness as evidence suggests that early treatment may improve both long-term outcomes and decrease the degree of disability associated with psychotic disorders (5,6).

The early phases of psychotic disorders have been defined by McGlashan and colleagues (5,7): The *prodromal phase* begins with the first signs of illness and often manifests as a tendency to withdraw from social situations. Late in the prodromal phase, negative symptoms such as lack of interest and difficulty making decisions may appear. This phase ends with the appearance of positive psychotic symptoms (hallucinations, delusions, disorganization). The prodromal phase is followed by the *active untreated phase* during which the person is psychotic but has yet to start treatment. The active untreated phase is also termed the *period of untreated psychosis* (Figure 1).

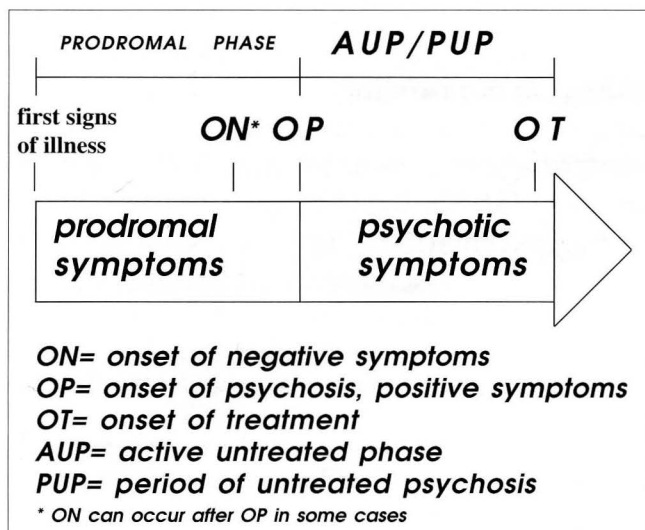


Figure 1: Early phases of psychotic disorders. Adapted from Larsen et al. (7)

Opportunity for Prevention

A number of studies (7-9) show that the period of untreated psychosis is often several years in length. Given the need for early treatment, this means that people may suffer with active psychosis for years prior to treatment. Psychosis results in disruptions in the family, social lives, work and educational pursuits of these individuals. Early treatment could not only lessen this suffering, but longer term outcomes may also be improved.

This can be understood in the context of the proposal put forth most recently by McGlashan and Johannessen (5). They postulated that the expression of psychotic symptoms results from a primary deficit or neurotoxic process occurring within the brain. This

process is most active during the early course of illness, beginning as early as the prodromal phase. Early treatment with effective medications is proposed to lessen the impact of the deficit process.

In support, studies have shown that shorter periods of untreated psychosis are associated with better clinical and psychosocial outcomes (10-12). Studies report more rapid remission of the first episode of psychosis (13) and fewer relapses when treatment is started early (14). A study evaluating the cost of care for individuals with schizophrenia during the first three years of illness found that the total cost of care was less than half for those individuals who began treatment within six months after the onset of psychosis, as compared with those who came into treatment later in their illness (15).

Documenting Early Psychosis in Nova Scotia

Given the importance of early detection and treatment of psychotic disorders, we have asked three principal questions.

1. How many of the new cases of psychotic illness in Nova Scotia can we identify?
2. What are the demographics of the people experiencing early psychosis?
3. What is the nature of treatment when it is initiated?

To begin to answer these questions, we circulated a survey to all psychiatrists in the province to determine the number and nature of early psychosis cases they have encountered in the past year.

METHODS

In June, 1996, a survey was distributed by mail to all psychiatrists in Nova Scotia who are members of the Nova Scotia Psychiatric Association, excluding one of us (LCK) who is a specialist in FEP and takes referrals from other psychiatrists (n = 121). The survey asked each psychiatrist to report the number of individuals who met the definition of FEP and whom they had seen in their practice from 1 April 1995 to 30 June 1996. FEP was defined as:

"The first time that psychotic symptoms are recognized and documented by a physician or other mental health professional, and, the psychotic symptoms are of the type described under 'Characteristic Symptoms' of Schizophrenia in DSM IV, i.e.: 1. Delusions, 2. Hallucinations, 3. Disorganized speech, 4. Grossly disorganized or catatonic behaviour, 5. Negative symptoms, i.e. affective flattening, avolition, or avolition." (16)

For each reported case, the psychiatrist was requested to provide some basic information: (i) age at the time when psychosis was first diagnosed; (ii)

whether the individual was an inpatient or outpatient at the time of diagnosis; (iii) gender; (iv) working diagnosis; (v) medications prescribed; (vi) referral source; and (vii) whether other psychiatrists were involved in the care of that individual.

Surveys were returned anonymously by mail to the Research and Community Education Group at the Nova Scotia Hospital and all data were coded and analyzed by the second author (SAC). As a large number of reported FEP individuals had been cared for by more than one psychiatrist, the raw data were reviewed for duplicate reports. No two profiles matched closely enough to suggest duplicate reporting. Inferential statistics were performed by standard methods (17).

RESULTS

Number of Psychiatrists Reporting Contact with FEP

Forty-seven of 121 psychiatrists responded to the survey (38.8%). Of these 47, 18 psychiatrists (38.3%) reported contact with one or more individuals who met the definition of FEP. Of those psychiatrists who reported contact, the majority (72.2%) reported contact with one or two individuals with FEP while five psychiatrists (27.8%) reported contact with three or more FEP individuals.

Number of Individuals with FEP Identified

The 47 Nova Scotian psychiatrists who responded to our survey reported a total of 38 individuals with

FEP between 1 April 1995 and 30 June 1996, the date by which the majority of surveys were returned.

Characteristics of FEP Individuals

Significantly more individuals with FEP reported by psychiatrists in Nova Scotia were male (73.7%) than female (binomial test, $p < 0.01$). As well, the mean age at the time of diagnosis was significantly lower in males (mean = 21.8 years, SD = 6.95) than females (mean = 36.0 years, SD = 17.85; Wilcoxon two sample rank sum test, $p < 0.05$) (Figure 2). Of those for whom location at diagnosis was reported ($n = 32$), 53.1% were outpatients. There was no significant difference in the gender distribution between diagnosis as an inpatient or an outpatient ($\chi^2 = 0.0581$, $p > 0.05$). Sixty-three percent of the individuals reported in the survey were cared for, at some point during their illness, by more than one psychiatrist. The referral sources and diagnoses assigned to the FEP individuals are reported in Tables 1 and 2 respectively.

Antipsychotic Medications Prescribed

Of all the individuals reported in the survey who were prescribed antipsychotic medication ($n = 36$), most received risperidone (52.8%) (Table 3). Some individuals received prescriptions for more than one antipsychotic during their course of illness. Of all the antipsychotic medications prescribed, more were traditional antipsychotics (57.4%) than novel agents. However, this difference was not statistically significant (bi-

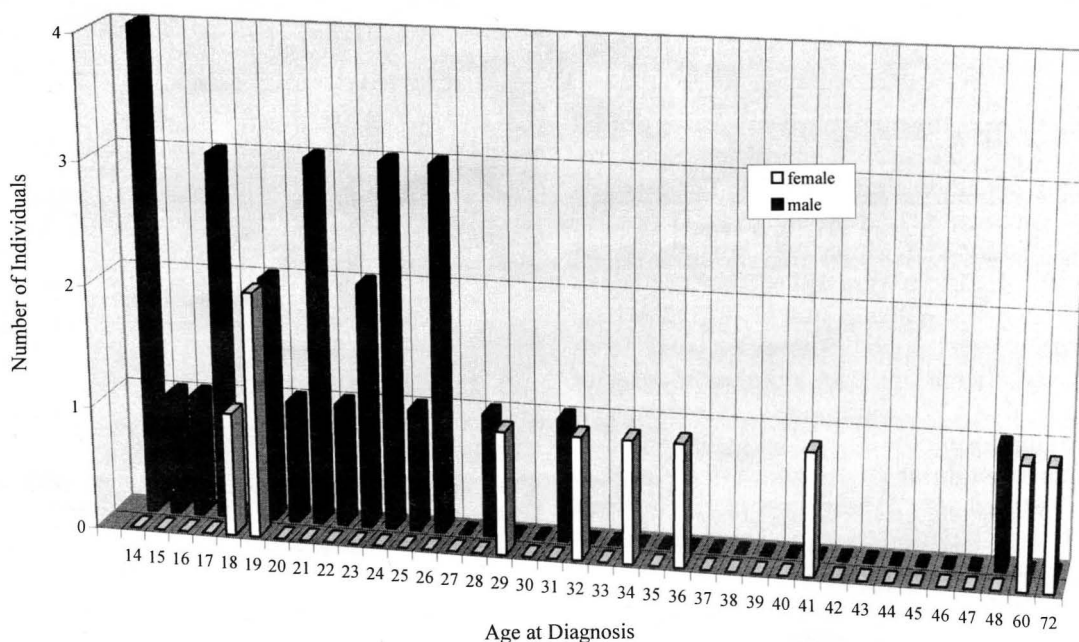


Figure 2: Age distribution by gender of individuals with FEP seen by psychiatrists in Nova Scotia between 1 April 1995 and 30 June 1996.

nomial test, $p > 0.05$).

Table 1: Referral source for individuals seen by psychiatrists in Nova Scotia between 1 April 1995 and 30 June 1996. (Percentages do not sum to 100 as some individuals were referred by more than one source.)

Referral Source	Number (%) of individuals referred by source
General practice physician	10 (26.3%)
Another psychiatrist	10 (26.3%)
Patient's family	9 (23.7%)
Other mental health professional	4 (10.5%)
Self referral	3 (7.9%)
Other:	
police	1 (2.6%)
orthopedic physician	1 (2.6%)
friends	1 (2.6%)
employer	1 (2.6%)
adult protection officer	1 (2.6%)
emergency department	1 (2.6%)

DISCUSSION

The main findings of this study are outlined related to the original questions posed.

1. How many of the new cases of psychotic illness in Nova Scotia can we identify?

Our estimate of the number of new cases of FEP annually in Nova Scotia is based on incidence rates reported by other Canadian studies of 15 to 25 new cases per 100,000 population at risk per year (3,4). The population at risk includes individuals who are between 16 and 54 years of age. There were 554,685 individuals in this age range in Nova Scotia in July of 1995 (2) which translates to an expected 83 to 139 new cases of psychosis annually. By interpolating the number of cases of FEP diagnosed over a 12 month period in our survey, assuming that individuals with FEP were diagnosed at equal intervals throughout the 15 month study period, our survey identified only 26 new cases of FEP in Nova Scotia for a 12 month period therein. This estimate excludes those cases which did not fall into the population at risk age range.

What happened to the remainder of the FEP population? Several sources exist to explain the discrepancy. It is possible that psychiatrists who had con-

tact with FEP individuals in the past year did not respond to our survey. Alternatively, if they did respond, they may not have reported all FEP cases. However, it is most likely that many FEP individuals did not reach psychiatric care and were cared for by general practice physicians. Finally, other individuals with a first episode of psychosis may not have come to medical attention at all.

Individuals with psychosis often present with a mixed and confusing picture (14). Depending on the predominant symptoms and stage of presentation, it is sometimes difficult to distinguish psychosis from other psychiatric disorders or even, in some cases, from the emotional turmoil of adolescence. Those who will eventually receive a diagnosis of a schizophrenia-like illness often initially receive other diagnoses until their illness unfolds completely (18,19). Thus, it is also possible that people who are experiencing a first episode of psychosis in Nova Scotia are not recognized as such and go undetected.

The vast majority of cases reported by psychiatrists in this survey were labelled with a diagnosis of schizophrenia or schizophreniform disorder. Our survey restricted the reported cases of FEP to those with a schizophrenia-like psychosis. It is possible, then, that our survey did not capture those individuals who were recognized as psychotic but had a significant mood component and did not meet our criteria.

Table 2: Diagnoses assigned to individuals with FEP seen by psychiatrists in Nova Scotia between 1 April 1995 and 30 June 1996.

Diagnosis	Number (%) of individuals with diagnosis
Schizophrenia:	
all types	25 (65.8%)
paranoid type	8 (21.0%)
undifferentiated type	2 (5.3%)
disorganized type	2 (5.3%)
type not specified	13 (34.2%)
Schizophreniform disorder	6 (15.8%)
Schizoaffective disorder	1 (2.6%)
Delusional disorder	2 (5.3%)
Psychotic disorder NOS	2 (5.3%)
Substance-induced psychotic disorder	1 (2.6%)
Brief reactive psychosis	1 (2.6%)

2. What are the demographics of the people experiencing early psychosis?

The characteristics of the FEP individuals reported by psychiatrists in Nova Scotia are consistent with the literature, in that males have a higher incidence of FEP (3,4,20-23) and have a younger age of onset of psychotic illness than females (7,8,20,22,24,25). Some studies have suggested that the lower incidence of FEP in females may relate to diagnostic stringency: differences in gender-specific incidence rates occur when individuals are classified according to different diagnostic criteria (20). Several studies have found that FEP females have higher premorbid functioning as compared with males (20,26,27). These females may then be more likely to receive a diagnosis of schizotypal or other personality disorders, major depression, bipolar disorder or schizoaffective disorder.

Table 3: Antipsychotic medication prescribed for individuals with FEP seen by psychiatrists in Nova Scotia between 1 April 1995 and 30 June 1996. (Percentages do not sum to 100 because some individuals received more than one antipsychotic medication. Two individuals were not prescribed antipsychotic medication.)

Antipsychotic	Number (%) of individuals on antipsychotic medication
Risperidone	19 (52.8%)
Loxapine	5 (13.9%)
Trifluoperazine	5 (13.9%)
Flupenthixol	4 (11.1%)
Perphenazine	4 (11.1%)
Haloperidol	4 (11.1%)
Fluphenazine	3 (8.3%)
Clozapine	1 (2.8%)
Chlorpromazine	1 (2.8%)
Pimozide	1 (2.8%)

3. What is the nature of treatment when it is initiated?

We were impressed to find that the present recommendations for treatment of FEP in the literature has reached many clinical practices in Nova Scotia in that risperidone was prescribed for slightly more than half of the reported FEP individuals in our survey. Risperidone has been found to be overall more effective than traditional antipsychotics, especially in treating negative symptoms, with a lower incidence of

extrapyramidal side effects (EPSE) and a presumed lower risk of tardive dyskinesia in both chronic (28,29) and antipsychotic-naïve first episode (9) psychotic individuals. It may be unethical to subject individuals with psychosis to the higher potential risk of tardive dyskinesia with typical antipsychotics when alternative treatments are available. Additionally, risperidone produces more improvement in cognitive symptoms than traditional antipsychotics (30) which is even more significant in FEP individuals than in those with chronic psychosis (9). This has important consequences for the rehabilitation of FEP individuals who are facing a potentially life-long illness. Randolf and colleagues reported that more effective psychosocial rehabilitation is possible when cognitive functioning is less compromised (31). More effective rehabilitation and fewer adverse effects of medication could result in a better quality of life for these FEP individuals. As well, the use of risperidone is associated with a significant reduction in hospital days resulting in lower health care costs (32). Thus, the greater expense of this novel agent is less of an issue when the broader long-term health care and personal costs of typical antipsychotic treatment are considered.

CONCLUSIONS

Recent research findings strongly suggest that early and effective treatment of psychosis can result in better long term clinical outcomes.

In Nova Scotia, there exists an exceptional opportunity to improve the clinical outcomes for persons early in the course of psychotic illness. The key to this improvement rests in early detection and treatment. In turn, early detection and treatment depends upon the ability of family, friends, and medical professionals to recognize early psychosis and provide access to specialized assessment and treatment services.

Results indicate that the care of persons with early psychosis in the province, as indicated in our results, currently rests with a relatively small group of psychiatrists. In the coming year, we plan to work closely with this group to provide them with the latest information regarding early detection and treatment.

Our survey results show that referrals currently come from family members, physicians in family practice and from other psychiatrists. Therefore, enhanced educational opportunities for people in all these categories are high priorities.

The results reported suggest that many of the new cases of psychosis occurring each year in Nova Scotia are eluding the attention of psychiatrists who are needed to provide the early specialized assessment and treatment. Therefore, efforts to increase the flow of referrals of new cases of psychosis could result in significant improvement in overall outcomes within the province.

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