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Original Article

Early detection of psychosis: finding those at clinical high risk

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Abstract

Aim: In early detection work, recruiting individuals who meet the prodromal criteria is difficult. The aim of this paper was to describe the development of a research clinic for individuals who appear to be at risk of developing a psychosis and the process for educating the community and obtaining referrals.

Methods: The outcome of all referrals to the clinic over a 4-year period was examined.

Results: Following an ongoing education campaign that was over inclusive in order to aid recruitment, approximately 27% of all referrals met the criteria for being at clinical high risk of psychosis.

Conclusions: We are seeing only a small proportion of those in the community who eventually go on to develop a psychotic illness. This raises two important issues, namely how to remedy the situation, and second, the impact of this on current research in terms of sampling bias and generalizability of research findings.

Key words: early detection, help-seeking, prodrome, psychosis, recruitment.

INTRODUCTION

There has been increasing interest in the potential for early detection and intervention during the prodromal phase of a psychotic disorder, that is, the period of functional decline before the emergence of full-blown psychotic symptoms. However, one of the many challenges to conducting prospective research with at-risk individuals is recruiting an adequate sample size to increase the power of a study.[1] First, the annual incidence of new cases of psychosis is presumed to be low (i.e. no more than one case per 10 000 persons per year in the general population), and second, research centres that are involved in this type of research report difficulty in recruitment.

Most studies often cite an average annual recruitment of about 18 clinical high risk (CHR) subjects per year at a single site.[2] It should be noted that these subjects are help-seeking and are not recruited through routine screening. Collaborative multi-site projects represent one alternative to the typical single-site, single-principal investigator approach to early schizophrenia research where recruitment responsibilities are spread across multiple sites to produce larger samples of at-risk individuals over shorter periods, thereby solving the sample size/time-frame dilemma.[1] However, although this does address the issue of having adequately powered samples, it does not address the issue that despite targeted recruitment efforts directed towards these subjects, recruitment is still an elusive and challenging process that requires regular appraisal and refinement. The purpose of this paper was to review the recruitment efforts of one research-based clinic specifically designed for studying individuals at CHR of psychosis to determine its effectiveness and the results.

The Toronto Prevention through Risk Identification, Management and Education (PRIME) clinic is a research-based clinic for young individuals between the ages of 14 and 30 at CHR of developing

psychosis. PRIME is part of a comprehensive first-episode programme, the First Episode Psychosis Program (FEPP), at the Centre for Addiction and Mental Health (CAMH), a teaching hospital affiliated with the University of Toronto. Toronto has a metropolitan population of approximately 2.5 million. PRIME was developed initially as a site for the PRIME North America clinical trial led by Thomas McGlashan.[3] As a research clinic, PRIME follows well-established criteria for the putatively prodromal state and attempts to provide these young people with effective treatment as well as longitudinally studying the evolution of their symptoms and illness experience.[4] The goals of the clinical research at PRIME are to accurately identify young people who are at CHR of developing a primary psychosis, to investigate biological and social risk markers and any other causal factors that may underlie the development of psychosis (i.e. comorbid or medical factors, and the impact of illicit drug use). Family, occupational and academic stressors and daily hassles are studied as well with the aim of optimizing our clinical approaches. The long-term goal is to develop targeted, comprehensive, appropriate and effective treatments aimed at either reducing the rate of conversion to psychotic illness or delaying its onset.

The clinic is funded primarily through two major ongoing longitudinal studies. The focus of the first is to develop a model that will help prospectively to identify individuals who will go on to develop psychosis prior to the onset of a full-blown syndrome. In this study, individuals who meet the prodromal criteria are followed for a period of 3–5 years and receive a range of comprehensive assessments and monitoring at regular intervals. The second is a randomized controlled trial (RCT) to determine the effectiveness of cognitive–behavioural therapy (CBT) compared with a supportive therapy in preventing or delaying the onset of psychosis. Treatment is only offered to those who meet the prodromal criteria. Those who present at the PRIME Clinic who do not meet the criteria are referred elsewhere for services as required.

Yung and colleagues in Melbourne Australia advocated five steps in setting up a clinic in the community for this high risk population: (i) establish a clinical infrastructure; (ii) detect the target group and promote access to services; (iii) engage young people to interact with the service; (iv) develop and deliver effective interventions to reduce distress; and (v) effective discharge planning.[5] We will first describe the development of the clinic and how the service is currently operating.

THE SERVICE

The PRIME Clinic offers research-based interventions for those seeking help for early signs suggestive of a psychotic prodrome; subjects who present with diagnosable psychotic disorders are rapidly referred to the FEPP. The clinic is in a Victorian house situated on a block with a number of small shops, restaurants and university buildings. It does not resemble a typical psychiatric facility or hospital. It has no obvious visual identification on the door or suggestions of connections to the adjacent CAMH building. The clinic provides a service to those who do not fit into mainstream services for those with pre-existing psychotic illness, yet it has close clinical connections with the FEPP in terms of staff and physician overlap. This allows for seamless transfer for those who do go on to develop psychosis. As prepsychosis intervention is not yet mandated or part of the health policy strategy in Canada, the majority of the financial support for PRIME comes from research grants.

Intake screening is completed by an experienced clinician who is able to adequately screen and selectively admit only appropriate referrals. The intake coordinator attempts to educate our referral sources as well. We developed the process to be over- rather than under-inclusive to facilitate referrals. All sources of referral were encouraged to call to discuss any young person about whom they may have had concerns about with respect to impending psychosis. In fact, this reflects the subtle nature of the diagnostic criteria associated with the prodromal syndrome and that it is often difficult to make valid clinical decisions through phone screening alone.

Potentially suitable clients were offered an initial screening appointment within 2 weeks of referral for a face-to-face comprehensive clinical/psychiatric consultation. Two psychiatrists (an adult and an adolescent psychiatrist) and a psychologist, all of whom are experienced working with this young population, were responsible for the consultations. During those assessments, an extensive psychiatric and functional history was completed and a comprehensive screening of prodromal criteria were applied. Collateral information was sought as well from the original referring source, any community or school-based caseworker or from any family member who may have accompanied the young person to the initial interview. At times, it may require more than one assessment to determine if the young person is suitable for the clinic. Once individuals were deemed suitable, they were invited to participate in one of the ongoing research projects. Those who were not suitable were either

immediately referred to the FEPP if they were psychotic or were returned to the referral source having received a psychiatric consultation.

Essentially, clients could participate in an RCT of CBT versus supportive therapy or a follow-along study that includes intensive periodic monitoring. Of the clients who did not want to participate, approximately 90% did not want to participate in the clinic regardless of whether participation was to be through research. They declined help at this time. They were thus returned to the care of the referring sources with recommendations for support. The 10% who did not want to be in the research but wanted help from the clinic were able to see the clinic psychiatrist for follow-up.

All participating clients remained under the care of one of the psychiatrists whom they could access as necessary, for any medical or psychiatric concerns. These concerns could include the development of new onset or coexisting anxiety or mood symptoms. Case managers from FEPP are available for the client who has issues that may require case management or for relieving the distress of the client who appeared to be on the cusp of developing a psychotic illness. Staff were hired as needed by the research studies and included experienced therapists, and either experienced clinical raters or raters who were under direct supervision. All staff were regularly trained to be familiar with the prodromal criteria.

At the time of recruitment and throughout the study period, all subjects were regularly informed that they received comprehensive assessments and psychological intervention by participating in one of the trials. All treatments including study treatment were provided at no charge to clients, and they were compensated for their participation in the study assessments. Comprehensive treatment focuses not only on addressing the attenuated positive symptoms but on any presenting concerns such as features of depression, social or generalized anxiety, and conflicts or difficulties with relationships or other areas of functioning (i.e. work and school).

REFERRAL CAMPAIGN 2004–2007

To effectively operate such a research clinic, we needed to ensure that young people meeting the criteria are appropriately referred to the service for assessment and treatment. A key challenge to obtaining referrals is the education of potential referrers about the clinical services offered and aims of PRIME. The clinic provided education as well about the current biological understanding and need for early detection of psychotic disorders in general and the rationale behind early intervention strategies. Through continued liaison with potential referral sources, it is hoped that mental health literacy in general and specifically about psychosis can be enhanced. Those working in and contributing to the community education component had experience in marketing and health promotion as well as clinical and research experience to effectively distribute information and successfully communicate about the service. Our strategies were based on the current state of the art in the literature and our earlier experiences at the clinic but were limited by the availability of funds. Our funds covered the equivalent of one full time staff and about $10 000 annually for all educational materials.

1 Potential referral sources and educational material mail-outs: our first targets were family physicians, adult and child psychiatrists and pediatricians in the community. By using data provided by professional organizations, we were able to mail our PRIME Clinic brochures, posters, referral information and a letter inviting calls for further information about the nature of the clinic. This was followed up by a similar mail-out to all other non-medical mental health and allied professionals via their professional organizations. This was repeated every 18 months. Next, we developed a database of all appropriate sources of referral through every community, mental health or counselling agency in both Metropolitan Toronto and the Greater Toronto Area (GTA) that potentially could see individuals who may be at risk of psychosis. This consisted of 520 agencies. All these agencies were personally phoned on an individual basis and details about the PRIME Clinic were explained to them. If appropriate, we offered to send a comprehensive information package and/or to deliver a presentation to their clinical staff. Each agency was rated as potentially suitable on a scale of likelihood for referring. Follow-up calls occurred at 3, 6 or 12 monthly intervals depending on the likelihood of referring to our service.
2 Presentations: presentations were done at the request of community agencies, hospitals and organizations. We completed a total of 126 presentations over a 3-year period. We set up information kiosks or booths as well at any relevant mental health or youth conference or other public mental health forum, campaigns or fairs. We conducted several public forums to educate

about the importance of the early diagnosis and treatment of psychosis and collaborated on a National Mental Health Awareness Week/Youth Week initiative entitled '5 Days to Fight Stigma'.

3 Training: for potential referral sources, we conducted annual daylong workshops on early detection for the community. These workshops focused on teaching referral sources about early psychosis, prodromal syndromes and referrals to the PRIME Clinic.

4 Advertising: because of limited funds and previous experience both in our own earlier studies and by other clinics,[5] we chose not to advertise in local newspapers and on television. It is typically prohibitively expensive, does not accurately target individuals who may need our services, is not a cost-effective means because of the low incidence and often leads to less appropriate types of self-referrals. We did advertise through posters highlighting signs of early psychosis on three separate occasions (each for a 2-month period). The ads appeared in transit vehicles – specifically on Toronto subway cars because we were offered a lower cost non-profit community rate. We also advertised for a 2-month period on a local small cinema pre-show advertisement time, again at a non-profit community rate. This was supplemented by the display of brochure materials in the cinema lobby.

5 Publications: brief articles were written about PRIME and early detection for the newsletters of community and mental health organizations.

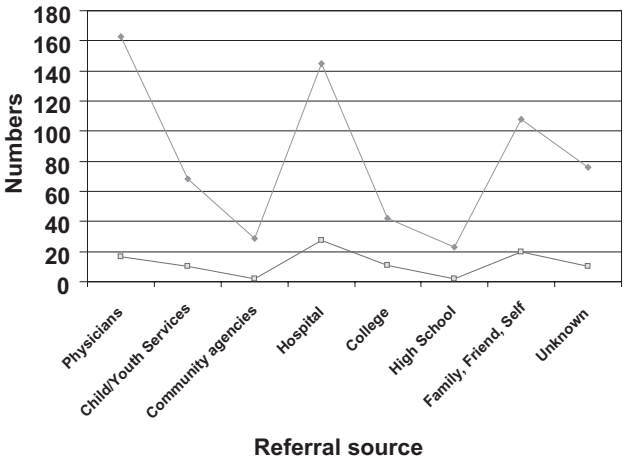
6 Schools and colleges: counselling and psychiatric services at the secondary education level were approached as described in #1. We were able to discuss the clinic with several members of the local school boards and provided high school social workers, guidance counselors and psychologists with educational materials and seminars about the PRIME Clinic.

7 Media: media materials introducing and describing the clinic were authored in collaboration with CAMH's public affairs department and distributed to local, municipal and provincial media organizations. Material distribution was followed up with telephone calls and resulted in a few instances of print and television coverage of interviews with PRIME clinical staff and client spokespersons.

8 Community collaboration: in addition to connecting with specific mental health and health-related agencies, we made an effort to reach out to other community partners. These initiatives included posting PRIME posters at all local libraries, community centres and recreation centres in the GTA, as well as sending out referral information to police officers, local church groups and any other community members that had youth-oriented programmes.

9 Other: these included open houses at our clinic, open to members of community organizations and allied health professionals. We attempted to be seen as youth-oriented by developing a comprehensive youth-friendly web site and by participating in presentations on a youth-focused community radio station. We regularly updated potential referral sources as well about changes at the clinic through regular mailing of brochures and other promotional materials such as posters and cards broadly outlining PRIME intake criteria.

FIGURE 1. Referral sources. (◆) actual referrals; (□) meeting criteria.



In summary, the bulk of the community education involved linking with professionals in the front-lines in the fields of education, health and welfare services and by conducting professional development or in-service training. Our experience was that this has to be an ongoing process because there is a natural process of changes in workers' portfolios and changes in the mandates and jurisdictions of community and mental health agencies.

RESULTS

Over a 4-year period, we had a total of 654 individuals who were referred. Referral sources are presented in Figure 1. The most frequent source of referrals was community-based physicians, with 86% coming from family physicians and followed by those affiliated with hospital-based programmes,

FIGURE 2. Outcome of the referrals.

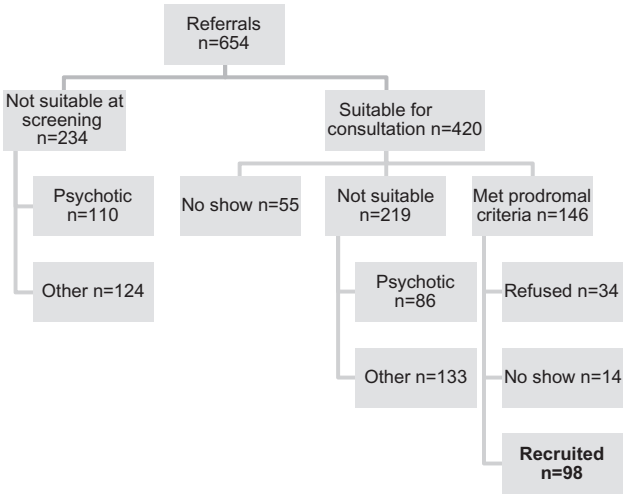


FIGURE 3. Number of referrals. (□) referrals; (■) assessed; (■) suitable; (□) consented.

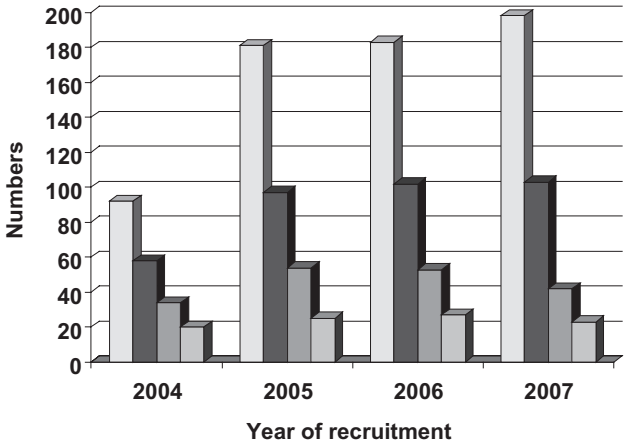
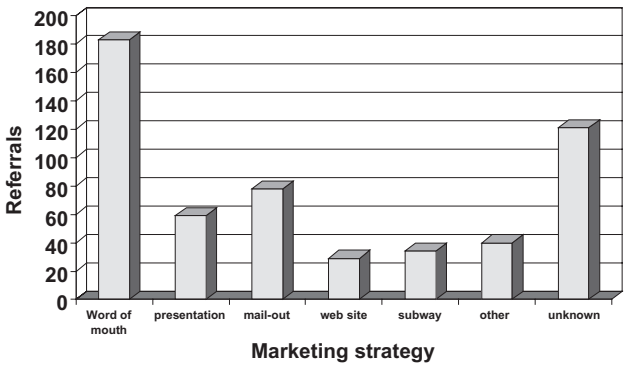


FIGURE 4. Marketing.



including outpatient programmes, addiction services and first-episode programmes. Only 10% of the referrals in this hospital-based group came directly from emergency services. Figure 1 also presents the distribution of the referrals sources that made referrals who met the prodromal criteria. Here we can see that 26% referred from college services met the criteria, 19% from self and families, 19% from hospital settings met 15% from child and youth services, 11% from physicians, 9% from high schools and 7% from community agencies.

Figure 2 presents the outcome of the referrals over a 4-year period. There were 654 referrals to the clinic in the 4-year period. Following the initial phone call screen for all of the 654 referrals, a total of 234 (36%) were deemed as unsuitable and about 17% of referred individuals were already psychotic. Four hundred twenty were invited to participate in an initial consultation. Of the 420, 13% failed to show, 52% were found to be not appropriate because they failed to meet the prodromal criteria (this included 20% who were already psychotic at the time of consultation) and 35% appropriately met the criteria for prodromal psychosis. Of those meeting the prodromal criteria, 67% agreed to participate in the research clinic, 23% refused and 9% appeared interested but did not come back to complete the consenting process. This means that of all individuals who completed the initial consultation, 27% met the criteria and were willing to participate in PRIME and of the total referrals, only 15% met the criteria and agreed to participate. Interestingly, at least 30% of our referrals were already psychotic, which suggests that community awareness of the availability of this type of prodromal clinic is another means of detection and a pathway to care for those already psychotic.[6] These numbers are presented in Figure 2. We examined those referral numbers on an annual basis. Figure 3 gives an annual breakdown of these numbers. Here, it is evident that the number of referral increased each year, particularly after the first year. There was an increase in the number assessed after year 1 but that changed minimally in the subsequent years. There was little change in the number suitable and the number consenting after year 1.

Figure 4 presents the distribution of referrals by the marketing strategy.

DISCUSSION

This paper has described an educational effort to recruit individuals who are help-seeking and may be putatively prodromal for the development of psychosis. The clinic is a research-based clinic and has dedicated funding for the recruitment and education that is beyond the means of most community-

based clinics. Clearly, many more referrals are received from community sources and screened at various stages than actually go on to meet the prodromal criteria. This is expected, as our approach of over inclusion has been to encourage potential referral sources to refer young people to PRIME when there is any suggestion of behavioural, personality, mood or anxiety changes that may be evidence of increased risk of psychosis. Accurate diagnosis utilizing the prodromal criteria requires specific training and clinical expertise, the need to be individualized for each subject and difficult to apply if one is not experienced in the area and using them on a regular basis. Although a low threshold was used for assessing potential PRIME patients, when we gave clinical feedback and advice to the referral source for those who did not meet the intake criteria, we tried to be informative and supportive. On the other hand, even after screening on the phone and the offer of a comprehensive assessment, less than 25% of those invited for a comprehensive consultation end up participating in the PRIME Clinic. Thus, finding, identifying and engaging these young individuals, who are potentially at risk for psychosis, is still a difficult, labor-intensive and time-consuming process. This was despite the fact that albeit a therapy trial, we were offering a psychological therapy. This was only available for three of the 4 years of recruitment and although 60% would choose a therapy trial over a monitoring trial, this did not increase our numbers.

Typically, constraints on financial resources may have limited the depth and breath of the recruitment campaign. However, our resources were more than reasonable for a clinical service. Additional focus on advertising could have potentially increased our numbers but may also have increased the number of inappropriate/unsuitable referrals. As our numbers of referrals increased, we did not see a concomitant increase in recruitment into studies. A second limitation is that our focus was specifically on individuals identified as being 'help seekers'. We did not use any widespread screening procedures such as screening in schools.[7] Recruitment was limited to help seekers because of the highly non-specific nature of the criteria. Although screening populations may increase the numbers recruited, it would be expected that the conversion rate would become much lower if one recruited by screening young people who were not help-seeking. In fact, recent data suggest that the yield of screening relatives, that is, children and siblings of current patients with a diagnosis of psychosis or schizophrenia, might be in the order of 19 per 10 000 relative screened.[8]

A third limitation is that the fact that PRIME is a research-based clinic where clients receive the care they need through various projects may have acted as a barrier to referrals. This may have meant that some referral sources would choose not to refer individuals or individuals were not willing to be referred because of pre-conceived ideas about research or concerns that treatment may be compromised. However, with two exceptions, our 'refusers' refused not just participation in a research study but any type of support or intervention or help. Finally, it was difficult to determine the best recruitment strategy as the most common response when surveyed, was 'word of mouth' and it is thus not known what marketing strategy best led sources to 'spread the word'.

Furthermore, as this is a relatively new area, it is not clear if there are aspects of recruitment into prodromal services that may be uniquely Canadian. Canada has a quality national healthcare system and thus participation in a no charge research clinic is less of an advantage than in countries where people pay for health care. Second, we have a wide network of early intervention programmes that may be less likely to refer young people that come their way to a specialized CHR programme.

If the goal of early detection is to attempt to engage and help these young people before the onset of the development of a full-blown psychotic disorder, we need to seriously reconsider our attempts to offer help early. Conversion rates reported in recently published studies range from 35 to 11% for those demonstrating signs of prodromal psychosis.[9,10] Assuming that the majority of first-episode patients experience a period of prodromal features, this would mean that typically, for every hundred patients who develop a first episode and are admitted to a first-episode programme, there should be between 285 and 900 putatively prodromal subjects if the conversion rates being reported are accurate. Typically, the FEPP at CAMH sees in excess of 250 new cases of psychosis per year, yet in PRIME, which has potentially a larger catchment area, we were able to annually screen and identify 36 and recruit about 25 on average. Clearly, we still see only a small proportion of those in the community who eventually go on to develop a psychotic illness, which raises two important issues, namely how to remedy the situation, and second, the impact of this on current research.

It may be that an even larger-scale expensive public health marketing strategy may be required yet we feel that we have made a reasonable attempt at educating and recruiting despite the fact that the number of help-seeking clients was very low.

Possibly consolidating our limited resources more intensively over a smaller catchment area may have helped our recruitment efforts. However, it is difficult to determine how to more effectively increase referrals to what may be closer to actual incidence rates.

The second issue is that of sampling bias and generalizability of research findings given the small percent of subjects who are identified for current studies. There are major challenges that need to be acknowledged in initiating research on this important population of individuals. These issues require further study as they will ultimately have an impact on the feasibility of this kind of research and on how such research may be translated into clinical practice.

We need to understand more fully the changes experienced during the prodromal phase of the illness and the nature of help-seeking. We need to address as well the reasons why these young people either do not seek help or are not being appropriately referred for help when they clearly are experiencing psychosocial distress, prepsychotic symptoms and increasing functional difficulties. Stigma may play a role but it needs further exploration. Only then can we be seen to be intervening early and change the course on young lives. Hopefully, the knowledge gained will reduce the long-term course of compromise and challenges faced by individuals suffering significant distress.

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