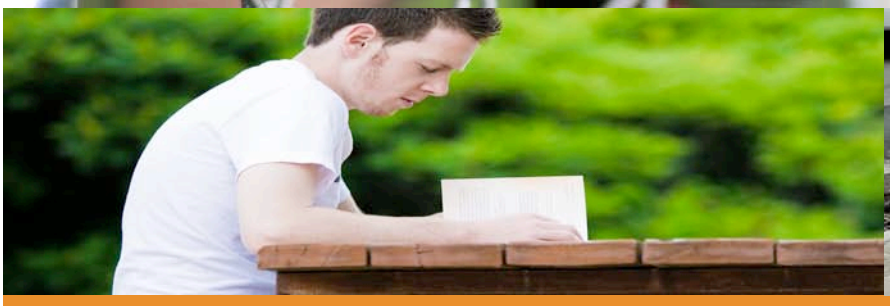

COLLABORATIVE RESEARCH GRANT INITIATIVE: MENTAL WELLNESS IN SENIORS AND PERSONS WITH DISABILITIES

Early Intervention and Prevention: Protective and Risk Factors - Persons with Disabilities

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Introduction

Throughout Alberta, access to mental health service delivery is increasingly becoming a public concern; this is also true in mental health and psychiatric research, where limited funding has impacted the number of experts in the province. As a result the Research Partnership Program contends that there is a need for evidence-based, applied research to focus on helping to enhance planning and services, and that a collaborative interplay between the academic and applied environments has the largest potential to collectively advance this area. Thus, to help with this process this background report will focus on Early Identification and Prevention: Protective and Risk Factors.

The rationale for this domain is that individuals with mental health issues may have a variety of risk factors present which, when addressed could potentially mitigate the severity of illness and/or the onset of the illness. We know that some individuals show early signs or symptoms of mental illness and one question for research and future practice will be whether efforts can be made to decrease the impact or severity of mental illness by being receptive to early signs. A second question will be whether the incidence rates of mental illness can be reduced by decreasing the risk factors and increasing protective ones.

In contrast to mainstream health care early diagnosis and intervention has come late to the field of mental health. However, interest in the “first episode of psychosis” and “early intervention”, which began almost twenty years ago, has become a rapidly expanding field that is now part of mainstream psychiatry and mental health. In reality, there was not a demand for “early intervention” but rather “on time intervention” as these young people, certainly in the case of schizophrenia, could already be diagnosed with schizophrenia or other psychotic disorders. The first stage of this “early intervention” movement which focused predominantly on psychosis was to offer a wide range of treatments, as soon as possible, that were appropriate to the stage of the illness, the age of the sufferers and that addressed psychosis in all its forms as early and as intensely as possible. More recently, work in early intervention and early psychosis has grown to include those who are at clinical high risk of developing a psychotic illness, that is, those who are presenting with attenuated psychotic symptoms who could potentially be prodromal for psychosis.

Prevention can be divided into three levels, primary, secondary and tertiary (Mrazek & Haggerty, 1994). Primary prevention involves targeting whole populations (including those with or without the risk factors for a disorder) in an effort to avoid the development of a disorder and thus reduce its incidence. Secondary prevention almost always includes treatment. It usually involves the identification of high risk individuals, followed by the provision of some kind of intervention to attempt to prevent the full onset of the disorder or at least to decrease its severity and duration. Tertiary prevention aims to reduce the impact of the disease and promote quality of life through active rehabilitation.

With respect to early detection and prevention, schizophrenia and other psychotic disorders have been given a great deal of attention in the last decade with the greatest number of studies to date. This is not surprising since schizophrenia is ranked as the ninth leading cause of disability world-wide, as measured by years of life lived with a disability (World Health Organization, 2001). Fewer studies have concentrated on anxiety and mood disorders. In studying early identification and prevention a key component is to understand both protective and risk factors. Comorbid conditions may be risk factors; alternatively little has been done to consider whether those with comorbid conditions (i.e. individuals with physical disabilities, cognitive disabilities or those who already suffer from developmental disorders) are at greater risk or have different risk factors.

Methods

FOCI OF THE REPORT

Early identification and prevention with respect to major psychiatric disorders is the focus of this background report. This includes schizophrenia and other psychotic disorders, bipolar disorder, depression and anxiety disorders. To date the focus of early intervention has been on psychotic disorders, therefore this report will review what we know about early detection and prevention with respect to psychosis. A similar format will be used to review what we know and have not yet studied with respect to early detection for mood and anxiety.

The second focus of this report will be to report briefly on the results of our literature search on what is known about the incidence of psychiatric disorders in three special groups – the physically handicapped, those with cognitive impairments and those with developmental disorders. We will then address, as far as there is data, the early identification and prevention of mental illness.

METHODS TO OBTAIN RESULTS

Literature to be reviewed was searched using the following major search programs: PsychINFO, PubMed, and MEDLINE. Four disorders were searched: psychosis, bipolar disorder, depression and anxiety. The search for psychosis was based on a previous published search (Addington, 2008). The keywords for the bipolar disorder search, in conjunction with the term “bipolar disorder” included: “early intervention”, “prodomal phase”, “prevalence”, “early detection”, “delay of treatment”, “pathways to care”, “first episode”, “early detection prodromal period”, “risk factors”, and “assessment tools early detection”. The keywords for the anxiety disorder search, in conjunction with the term “anxiety”, “PTSD”, “OCD”, “panic disorder” and “phobia” included: “early intervention”, “risk” and “prevention”. The keywords for the depression search, in conjunction with the term “depression” included: “prevalence”, “early intervention”, “comorbidity”, and “risk factors”.

Our searches also included three groups of complex cases: those with cognitive disabilities, physical disabilities, and developmental disorders. The search terms used for cognitive disabilities were “risk”, “prevention”, “early detection”, and “early onset” in conjunction with “mentally retarded” and each of the four disorders. For the physical disability the key terms used were “physical handicap”, “physical disability”, “physical impairment”, and “risk” in conjunction with each of the four disorders. The search terms used for developmental disorders included the terms “risk”, “autism”, “Asperger’s syndrome”, and “conduct disorder” in addition to each of the four disorders.

The bipolar disorder searches generated 109 articles. The anxiety searches resulted in 113 articles. The depression searches resulted in 115 articles.

For the cognitive disability complex cases, the following articles were found: 10 articles for bipolar disorder were generated, for depression 6 articles, for anxiety 8 articles, and for schizophrenia 108 articles were generated.

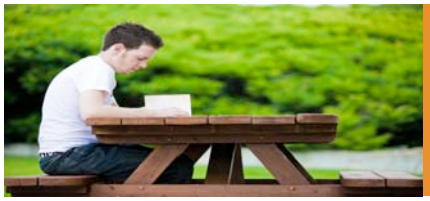
For the developmental disorders complex cases, the following articles were found: for depression 1899 articles were generated, for anxiety 3286 articles were generated, for schizophrenia 2885 articles were generated and for bipolar 8 articles were generated.

For the physical disabilities complex cases, the following numbers of articles were found: bipolar disorder 25 articles were generated, for depression 52 articles, for anxiety 48 articles were generated.

All articles searched were published in the years 2000 to 2009 and were to be written in English.

Quality Assessment of Evidence

To be included, studies had to be related to first episode, and have samples that had been diagnosed with the relevant disorders. We also wanted the research to reflect early onset of mental illness and not research that merely focused on comorbidity. This eliminated the majority of the articles for complex cases.



Results

MAJOR PSYCHIATRIC DISORDERS

1. Schizophrenia and other Psychiatric Disorders

Schizophrenia spectrum disorders have a lifetime prevalence of 1%. Schizophrenia itself was ranked as the ninth leading cause of disability world-wide, as measured by years of life lived with a disability (World Health Organization, 2001). In Canada in 1996, individuals with schizophrenia used 8% of all hospital beds (Goeree et al., 1999). By 2004 they accounted for Canadian $2.02 billion in direct health care costs, between 50 and 70% were unemployed and overall productivity, morbidity and mortality loss estimates were $4.83 billion (Goeree et al., 2005). Because the onset of schizophrenia is typically early in life, disability can last a lifetime with a major impact on social, interpersonal and occupational role functioning.

Over the last decade, there has been a worldwide movement to develop specialized, comprehensive programs that target early intervention for a first episode of schizophrenia and other psychotic disorders (Edwards & McGorry, 2002). The goals of early intervention are to reduce the morbidity and mortality associated with psychosis; to reduce delay in accessing treatment and to offer optimal treatment in the early, most critical years, following the onset (Birchwood, Todd, & Jackson, 1998; McGorry, 2001). In the first year of treatment after a first episode, 75% to 90% of patients achieve remission from psychotic symptoms (Addington, Leriger, & Addington, 2003; Edwards, Maude, McGorry, Harrigan, & Cocks, 1998; Lieberman et al., 1993). However, approximately 40% of first episode patients are non-adherent to medication regimes (Coldham, Addington, & Addington, 2002; Verdoux, Lengronne, Liraud, Gonzales, & et, 2000) and more than 60% have intermittent periods of gaps of non-adherence (Mojtabai et al., 2002). Relapse rates are high with 82% of patients relapsing at least once within 5 years (Robinson, Woerner, Alvir, et al., 1999). Unfortunately, even amongst those who do achieve full remission from psychotic symptoms, functional recovery is a major challenge for First Episode (FE) patients and their families and matches that seen in patients who have a more chronic course (Addington, Young, & Addington, 2003; Robinson, Woerner, McMeniman, Mendelowitz, & Bilder, 2004; Tohen, Strakowski, Zarate, Hennen, et al., 2000)

This section will first review what we know about early intervention for the disorder and secondly will focus on early detection in the pre-psychotic period. See attached paper for more details of work and references in this section (Appendix A).

DELAY IN TREATMENT OF A FIRST EPISODE OF PSYCHOSIS

Frequently, when young people present for treatment for psychosis, they have been sick for several weeks or months and, at times, years. This period from the onset of full blown psychotic symptoms until adequate treatment is received is called the duration of untreated psychosis (DUP). DUP is an important variable, as unlike other prognostic factors, it has the potential to be reduced through changes in health service delivery. Longitudinal studies range from 1-8 years and the majority support an association between long DUP and a range of poor functional and symptomatic outcome (Addington, van Mastrigt, & Addington, 2004; Drake, Haley, Akhtar, & Lewis, 2000; Harrigan, McGorry, & Krstev, 2003; Harris et al., 2005; Larsen, Moe, Vibe-Hansen, & Johannessen, 2000; Loebel, Lieberman, Alvir, Mayerhoff, et al., 1992; Norman et al., 2007; Morgan et al., 2006). Furthermore the association of a long DUP with poor outcome occurs independently of other variables, suggesting that DUP has an independent role in determining symptomatic outcome (Addington et al., 2004; Harrigan et al., 2003). Evidence of modest associations between DUP and a broad range of outcomes is further supported by two recent meta-analyses and seems to be consistent when methodological shortcomings are taken into consideration (Norman, Lewis, & Marshall, 2005). Regardless, it must be underscored that this area of research is correlational in

nature. The only study attempting to experimentally reduce DUP was a quasi experimental methodologically sound project in Norway called the TIPS project. This prospective study compared communities with similar treatment services but in which one community received enhanced public education and outreach; the community with enhanced outreach demonstrated reductions in duration of untreated psychosis, reduced attempted suicide and reduced negative symptoms (Melle et al., 2004; Melle et al., 2006; Melle et al., 2008).

PATHWAYS TO CARE FOR TREATMENT OF PSYCHOSIS

An understanding of pathways to care (the number and type of help-seeking attempts and who is most likely to ensure appropriate treatment is obtained) is a prerequisite for early detection and effective treatment of FE psychosis (Addington, van Mastrigt, Hutchinson, & Addington, 2002; Singh & Grange, 2006; Johannessen et al., 2005). A recent systematic review (Singh et al., 2006) identifying 15 studies revealed several common themes: pathways are highly varied and diverse and that health professionals, in particular family physicians, are usually the first contact; irrespective of setting, treatment is typically delayed; some delay occurs because of failure of carers and primary care in recognizing incipient psychosis; and even the initiation of treatment for psychosis in those who are already engaged in mental health services is also delayed (Norman, Malla, Verdi, Hassall, & Fazekas, 2004; Addington & Addington, 2006). Change in premorbid functioning, suicidal ideation, and positive psychotic symptoms are all associated with help-seeking (Addington et al., 2002; Singh et al., 2006). However, measures of pathways to care are inadequate: previously utilized measures were not devised with a well-developed theoretical or conceptual framework nor have their psychometric properties been established.

OUTCOME OF EARLY TREATMENT FOR PSYCHOSIS

Psychosocial interventions for early psychosis have been considered as single-element interventions or as programs that combine multi-element approaches. Single-element interventions include family intervention, cognitive behavioural therapy (CBT), supported employment, and studies that address substance use, suicide and trauma. All of these available outcome studies have been recently reviewed in detail in Addington (2008).

MULTI-ELEMENT APPROACHES - RANDOMIZED TRIALS IN FIRST EPISODE PSYCHOSIS

The OPUS trial conducted in Copenhagen was the first large (n=547) randomized clinical trial of integrated treatment versus standard treatment for people with a FE psychosis (Peterson et al., 2005a). Treatment was for a minimum of two years with follow-ups at one, two and five years. The integrated treatment was two years of assertive community treatment that included family psychoeducation and social skills training. Those in the integrated group had better adherence to treatment. At two years, attrition from the integrated treatment was 25% compared to 40% of those in the control treatment. Dropouts had poorer prognosis. Integrated treatment at both one and two year follow-up reduced psychotic and negative symptoms more than standard treatment, and although the effect was small, it was of clinical importance. Outcome was determined by creating a measure of “any poor outcome”, e.g., symptoms, substance use or GAF rating, poor accommodation and not working or out of school. A global score, comprised of any one of these variables was calculated, based on the assumption that poor outcome in any of these variables was considered disabling. At one year, the integrated treatment group had advantages in all areas of outcome (Petersen et al., 2005b). Only 11% in the whole sample attempted suicide in the first year with a significant improvement in hopelessness for the treatment group (Nordentoft et al., 2002). Further advantages for the integrated treatment group were a perceived reduction in family burden (Jeppesen et al., 2005). Limitations of the study included the absence of blind raters and differential attrition. A recent publication reported on the five year follow-up of this two year treatment program (Bertelsen et al. 2008). Fifty-seven percent of patients were followed at 5 years. Although the early-intervention program demonstrated improved clinical outcome after two years, these effects were not sustained up to five years later.

The second RCT was the Lambeth Early Onset (LEO) trial conducted in the UK. (Craig et al., 2004) LEO was an RCT of 144 young people ages 16-40 years to determine the effectiveness of a service for early psychosis with evidence based biopsychosocial intervention compared to standard care delivered by community mental health teams. Compared to standard care, those in the specialized care group were less likely to relapse, were readmitted fewer times and were less likely to drop out of the study. When rates were adjusted for sex, previous psychotic episode, and ethnicity, the difference in relapse was no longer significant and only readmissions and dropout rates remained significant (Craig et al., 2004). For both groups there was an effect of the intervention for negative symptoms, treatment adherence, self rated quality of life and service user satisfaction. Further analysis demonstrated that other benefits of this specialist service were in regaining or establishing social relationships, time spent in vocational activity and medication adherence based on case notes (Garety et al., 2006).

MULTI-ELEMENT APPROACHES – OPEN OR QUASI EXPERIMENTAL STUDIES

Although many FE programs are beginning to report outcome data, there are a few well-described and well-established FE programs that have reported a wide range of outcomes. Studies that are reviewed in this area are well conducted and methodologically sound (Addington, 2008). The majority of the literature in this area comes from four programs. First, a quasi experimental, phase-specific approach in Australia, the Early Psychosis Prevention and Intervention Centre (EPPIC) long-term follow-up study, reports on a large (N=723) and epidemiologically representative FE psychosis cohort that has been followed up over a median of 7.4 years (Henry et al., 2007). Secondly, the TIPS program in Norway has a long term follow-up of over 300 subjects. Finally, the Calgary Early Psychosis Program and the Prevention and Early Intervention Program (PEPP) in London, Ontario are two Canadian community-oriented treatment programs of phase-specific medical and psychosocial treatments integrated within an intensive case management model for patients with FE psychosis, each within a geographically defined population. Both of these programs have a range of well described clinical components with quality and reliable assessment procedures.

Overall, results from these programs suggest that after one year there is a significant improvement in positive and negative symptoms, depression, insight and in functional outcome, as well as reduction in self-harm and aggressive behavior, and fewer hospitalizations. Overall, community functioning tends to be influenced by a combination of other factors, such as premorbid functioning, residual symptoms and cognition. An important observation is that within specialized FE programs lower rates of suicide are being reported. Finally, a prior meta-analysis of the schizophrenia literature demonstrated that only 40.2% of patients improved after follow-up, averaging 5.6 years (Hegarty, Baldessarini, Tohen, Waternaux, & Oepen, 1994). However, a recent meta-analysis examined 37 studies that represented 4100 FE subjects with a mean follow-up of 35 (+/– 6) months (Menezes, Arenovich, & Zipursky, 2006). Good outcomes were reported in 42.2% of the cases and poor outcomes were reported in 27.1% of cases, suggesting that good and intermediate outcomes were more common than previous studies have reported. Importantly, predictors of good outcome included a combination of pharmacotherapy and psychosocial treatment. The authors rightly point out the limitations in conducting a meta-analysis with such a relatively small and recent body of literature. This meta-analysis draws out the inconsistencies in the literature and emphasizes the importance of having consistent definitions and measures that will permit the future collaboration of smaller studies.

SINGLE-ELEMENT INTERVENTIONS FOR A FIRST EPISODE OF PSYCHOSIS

Family: Only two family studies have been reported. An open three year study in Calgary demonstrated both effectiveness in terms of family well being and mental health and that such a program was acceptable (Addington, McCleery, & Addington, 2005). The second study was a randomized controlled trial (RCT) that demonstrated that a 12 month family intervention led to

reduced relapse rates but once patients were referred to other agencies after the end of the treatment, the relapse rate could not be retained, with a total of 64% relapsing during the follow-up period. However, at five years, those who had received the family treatment spent on average 10 months less time in hospital.

Cognitive Behavior Therapy: Despite advocating cognitive behavior therapy (CBT) as a valuable treatment in FE psychosis (Addington & Gleeson 2005), there are only two published RCTs of CBT with a FE sample. The first was the SoCRATES trial in the UK (Tarrier et al., 2004) and the second was the ACE trial in Australia (Jackson et al., 2007), The SoCRATES trial was a multi-site methodologically rigorous trial with a very large representative sample. At 70 days there were trends toward faster improvement of positive symptoms in the CBT group compared to supportive therapy (ST) group and the routine care (RC) group. By 18 months, both the CBT and ST groups demonstrated significant advantages over RC, but there were no significant differences between the impact of CBT and ST on symptoms, relapse, or rehospitalization. The Australian study reported similar results in that both groups improved in symptoms and the CBT group had greater improvement in functioning at 3 months but not by 12 months. These studies suggest that recovery may occur sooner with CBT but they are not sustained. However, both trials were offered in the acute phase of the psychotic illness when a high recovery rate under RC is to be expected. Further the number of sessions may have been inadequate.

Supported Employment: Three randomized trials have reported on the effectiveness of supported employment. Significant results were that unemployment dropped, competitive employment rose, improved level of employment, increase in money earned, longevity of employment and reduced reliance on welfare benefits.

Substance Use: The abuse of alcohol and drugs is an important and clinically challenging aspect of FE psychosis with prevalence rates that are significantly higher than in the general population (Addington & Addington, 2007). Several studies have reported a significant decline in substance use for FE patients who participated in a specialized treatment service where substance use is addressed throughout all components of the program. Two randomized controlled studies have been reported with FE samples in Australia. Kavanagh et al. (2004) compared a motivational interviewing program to treatment as usual and reported improved substance use outcomes at six months for the motivational interviewing treatment group. The second RCT compared a 10 session cannabis-focused intervention with 10 sessions of psychoeducation (Edwards et al., 2006). In the entire sample, cannabis use decreased significantly at the end of treatment, which was sustained at the 6-month follow-up, but the specialized intervention was no more effective than the provision of regular FE psychosis education.

Risk of suicide: There is one RCT of a cognitive-behavior therapy plus standard care versus standard care for those FE patients who were considered to be at high risk of suicide. Although the treatment group had a decrease in suicide ideation, this outcome was not significantly different. However, those receiving the therapy demonstrated greater improvements in hopelessness, an important correlate of depression and a strong risk factor for suicide.

Trauma: To date, only one methodologically sound CBT intervention has focused on the reduction of PTSD and trauma in people with psychosis, the majority of whom had already experienced several episodes of psychosis (Mueser et al. 2008). In this intention-to-treat analysis, those randomized to CBT improved significantly in PTSD symptoms at all follow-ups compared to the treatment as usual group. However, it is difficult to ascertain whether this approach would be effective with FE patients.

EARLY DETECTION IN THE PRE-PSYCHOTIC PERIOD

Early intervention in psychosis has become a well established area of research and clinical practice. More recently, the early intervention field has considered the possibilities of intervening with those at high-risk of psychosis, that is those who may be putatively prodromal for psychosis. The major strategy for identifying young people who may be at risk for later developing a psychotic illness has been the detection of attenuated or subthreshold psychotic symptoms, which are suggestive of imminent psychosis. Yung and McGorry (1996) have defined criteria for three groups that appear to identify those at clinical high-risk for developing a psychotic disorder in the near future. The criteria are a mix of recent-onset functional decline plus genetic risk, recent-onset subthreshold or brief-threshold psychotic symptoms. Typically risk for psychosis was addressed only in those who were at genetic high risk, i.e. those with a family member with psychosis. However using these new criteria, the risk of converting to psychosis increases from 5% to 20% in the genetic high-risk group to approximately 25 to 50% by one year, as reported in several studies (Miller et al., 2002; Yung et al., 2003). The reliability of these criteria has been excellent, and studies using these criteria support the view that prodromal persons are symptomatic and at high and imminent risk for psychosis (Cannon et al., 2008). We call this risk group "clinical high risk" as they are seen to be at risk because of clinical syndromes.

IDENTIFYING INDIVIDUALS AT HIGH RISK OF PSYCHOSIS

Identifying individuals at clinical high risk of psychosis has proven very difficult as reported by most researchers in the area. A recent publication (Addington et al., 2008) demonstrated that despite a comprehensive ongoing education campaign in Toronto over a four year period 146 clinical high risk individuals were identified out of 654 referrals. Only 98 were willing to engage in the clinic. Relative to those presenting in the same institution for a first episode of psychosis one should expect to see many more with prepsychotic symptoms.

TREATMENT RESEARCH IN CLINICAL HIGH RISK

There are only a few published studies to date addressing intervention in this clinical high risk population. This is a relatively new area of research and such individuals are hard to identify which makes obtaining adequate samples a difficult process. The first treatment study was completed by McGorry and colleagues in Melbourne (McGorry et al., 2002). Here they randomized 59 "ultra-high-risk" subjects to six months of active treatment (risperidone 1-3 mg/day plus a modified CBT) or to a needs-based intervention. By the end of treatment significantly fewer individuals in the active treatment group had progressed to a first-episode of psychosis (9.7% vs 36%). No significant differences were noted six months post-treatment, as more of the active treatment group converted to psychosis (19% vs 36%). Those who had been more compliant with medication in the treatment phase were less likely to relapse. Despite some of the limitations this was undoubtedly a landmark study.

The second trial was a more rigorous randomized, double-blinded, parallel study of 60 help-seeking prodromal subjects comparing the efficacy of a low-dose antipsychotic (olanzapine) vs placebo in preventing or delaying the onset of psychosis (McGlashan et al., 2003; Miller et al., 2003). At one-year follow-up, 16% of olanzapine-treated subjects converted to psychosis compared with 35% of placebo-treated subjects, plus olanzapine was associated with significantly greater symptomatic improvement in prodromal symptoms than the placebo (McGlashan et al., 2006). Although not statistically significant, interpretation of the findings is likely limited by the small sample size.
The third published trial was the Early Detection and Intervention Evaluation (EDIE), a single-blinded, randomized trial of CBT with individuals at high-risk for psychosis (Morrison et al., 2004). Fifty-eight participants were randomized to either CBT for the first six months, or to monitoring alone. All received monthly monitoring for 12 months. CBT significantly reduced the likelihood of progression to psychosis as defined by ratings on the Positive and Negative Syndrome Scale (PANSS) (Kay, Fiszbein, & Opler, 1987) over 12 months, the likelihood of antipsychotic medication use, and of meeting criteria for a DSM-IV diagnosis of a psychotic disorder. CBT also improved

positive symptoms in the sample. One important aspect of this CBT trial is that 95% of subjects consented to participate in this trial, suggesting an interest in and willingness to engage in a psychological therapy.

RISK FACTORS FOR THE DISORDER

The presence of certain biological and psychosocial risk factors (i.e., urban upbringing, (Krabbendam & van Os, 2005b) adverse childhood development (Janssen et al., 2004) and migration (Fearon & Morgan, 2006; Cantor-Graae & Selten, 2005)) at certain points in the lifespan have been linked to the later development of psychosis (Cannon & Clarke, 2005). First, a series of Danish cohort studies demonstrated evidence of a dose response relationship between urbanicity during upbringing and risk of schizophrenia risk. Furthermore, the risk of schizophrenia increased when individuals moved to a higher degree of urbanization during upbringing. (Pedersen & Mortensen, 2001; Pedersen & Mortensen, 2006). A recent meta-analysis (Krabbendam et al., 2005b) suggested that approximately one third of all schizophrenia incidents may be related to unknown but likely unconfounded environmental factors operating in the urban environment that may have an impact on developing children and adolescents to increase the later expression of psychosis-like symptoms, “at-risk-mental states” as well as overt psychosis. This is not perceived to be phenotypically silent, because the rate of “at risk mental states” characterized by subtle psychosis-like phenomenon is also higher in urban areas (van Os, Pedersen, & Mortensen, 2004).

Secondly, several lines of evidence suggest a possible association between trauma in childhood and psychosis (Shevlin, Dorahy, & Adamson, 2006; Read, van, Morrison, & Ross, 2005; Janssen et al., 2005; Bak et al., 2005; Spauwen, Krabbendam, Lieb, Wittchen, & van, 2006; Janssen et al., 2004) although much of the evidence is controversial and contestable (Morgan & Fisher, 2006) and exposure to early trauma may operate in interaction with many other factors, e.g. genetics.

Thirdly, a recent meta analysis of a wealth of studies on migration (Cantor-Graae, Zolkowska, & McNeil, 2005; Karlsen, Nazroo, McKenzie, Bhui, & Weich, 2005; King et al., 2005; Selten et al., 2005) demonstrated that a personal or family history of migration is an important risk factor for schizophrenia with greater effect sizes for those from developing versus developed countries and for second versus first generation immigrants (Cantor-Graae et al., 2005). Further studies have suggested up to a fourfold increase in risk when migration history acts synergistically with other variables such as family dysfunction (Patino et al., 2005). Interestingly, additional evidence suggests that it is perceived discrimination regardless of ethnic group and not necessarily actual discrimination that is associated with psychotic illness, in that perceived discrimination may induce delusional ideation and contribute to high observed rates of psychotic disorder in exposed minority populations (Janssen et al., 2003). Additionally, low IQ, also demonstrated as a risk for later schizophrenia (Reichenberg et al., 2005; Reichenberg et al., 2006b; Reichenberg et al., 2006a), may put people at a social disadvantage.

In order to find a common mechanism for these findings, Selten (Cantor-Graae et al., 2005) suggested that social defeat may be the unifying factor in linking these various social risk factors to psychosis. In addition, the experience of social defeat may lead to more frequent use of illicit drugs. Of course social defeat does not inevitably lead to psychiatric illness but experiencing social adversity can influence the development of the schizophrenia phenotype in terms of a gene-environment interaction (Krabbendam et al., 2005b). In fact with respect to drug use, there is evidence to suggest that the early use of cannabis may impact the later development of psychosis (Cannon et al., 2005) possibly due to an interaction with genes such as the COMT valine 158 allele (Caspi et al., 2005).

Both biological and cognitive mechanisms have been suggested linking social adversity and defeat with psychosis. Chronic and long-term experience of social defeat may lead to sensitization of the mesolimbic system (and/or to increased baseline activity of this system) and thus increase the risk

for schizophrenia (Cantor-Graae et al., 2005). When exposure to stress persists and heightened stress-induced glucorticoid release is chronic, permanent dysregulation of the hypothalamic-pituitary adrenal (HPA) axis may occur which in turn might underlie the dopaminergic abnormalities that are generally thought to be involved in psychosis or even from a direct effect on dopamine (Hall, Wilkinson, Humby, & Robbins, 1999). Cognitive models suggest that beliefs and appraisal processes are crucially important in the onset and persistence of psychosis. Current hypotheses of psychological mechanisms of psychosis have emphasized that the response to psychotic like experiences is cognitively mediated by self-beliefs, maladaptive self-schema or appraisals (Bak et al., 2005). Thus the experience of a voice does not necessarily lead to full-blown psychotic symptoms; only when an individual appraises this voice as coming from an external malevolent source and starts worrying about the experience does a psychotic symptom develop. Although the development of maladaptive schema in people with psychois has not been systematically examined as it has in those with depression (Beck & Rector, 2000), recently, it has been demonstrated that low self-esteem, neuroticism or depression may increase the risk for developing clinical psychosis (Krabbendam et al., 2002; Krabbendam et al., 2005a; Krabbendam & van Os, 2005a). The mechanism of risk is a cognitive style associated with external appraisal errors, alterations in schema relating to self and world, bias in attentional focus, beliefs about the uncontrollability of certain events or experiences, appraisals of anomalous experiences or attributional style. Further, the emotive component of psychosis liability may involve genetic transmission (Jacobs, Myin-Germeys, Derom, Vlietinck, & van Os, 2005). Thus, a possible mechanism between social defeat (a proxy for social risk factors) and the onset of psychosis is the presence of negative/maladaptive schema and self beliefs (Garety, Kuipers, Fowler, Freeman, & Bebbington, 2001)

ASSESSMENT TOOLS FOR EARLY IDENTIFICATION

There are some tools currently under development to identify early signs. These mainly focus on early signs and symptoms and detecting attenuated psychotic symptoms.

2. Bipolar Disorder

With a lifetime prevalence of 1.2%, bipolar disorder is one of the most common psychiatric conditions in the world today (Berk & Hallam, 2007). Between 30 and 60% of individuals afflicted with bipolar disorder experience onset in the childhood or adolescence (Post & Luckenbaugh, 2008). The initial episode in bipolar is usually depression, as the majority of the morbidity is association with this phase of the disorder. Berk and Hallam (2007) state that in bipolar I the ratio of depressive to manic episodes is 3:1. Bipolar disorder is a lifelong illness that causes dramatic mood swings, which can be difficult to deal with on a day-to-day basis. It is also considered one of most lethal psychiatric conditions, as estimates show that those afflicted with bipolar disorder, in the 25-34 year old age group, have up to a 19% suicide risk (Berk & Hallam, 2007). Data from the National Comorbidity Survey also determined that the odds-ratio for a lifetime history of suicide attempts was higher in bipolar disorder than in any other psychiatric disorder (McIntyre & Konarski, 2008). Research has suggested that those afflicted with bipolar disorder suffer through many negative effects as the result of the illness. Many individuals showed problems in social and occupational functioning, as well as increased social morbidity, such as halting education, financial and marital concerns (Goossens & Knoppert-van der Klein, 2007) and psychosocial disability (Salvadore & Drevets, 2008).

TREATMENT DELAY

Treatment delay has been studied much less in this area when compared to psychosis research. However, there are a few possible consequences of the delay of treatment. A study by Berk and Hallam (2007) found that Lithium has been shown to be less effective if not started early on in the course of the treatment. Delayed treatment has also been correlated with poor social adjustment, increased number of hospitalizations, increased risk of suicide, comorbidities (i.e., substance abuse) and impairment in specific developmental tasks (Berk & Hallam, 2007). Research has also

suggested that multiple episodes lead to permanent changes at the level of gene expression, making episodic relapse a much greater possibility (Berk & Malhi, 2008).

Pathways to Care

A comprehensive review by Bhurga (2005) found that despite available treatments, the disorder is often left untreated due to individual medical, financial, legal/governmental and cultural barriers. Limitations of the study were that it focused on UK and USA experiences only. It also must be kept in mind that pathways to care vary greatly, as they are influenced by local economic and political factors (Bhurga).

Early Treatment at the First Episode

There has been a move towards early intervention in regards to treatment for bipolar disorder. However, often treatment for early bipolar disorder is encompassed within early psychosis programs. Typically early psychosis programs focus on non-affective psychosis but several well–established programs in the literature, such as the EPPIC program in Melbourne, do include affective psychosis.

The Systematic Treatment Optimization Program for Early Mania (STOP-EM) project was an open, multi-element treatment program with 53 subjects focusing on those in the early stage of bipolar. Those in the program received maintenance treatment from clinicians with expertise working with mood disorders. Patients also received supportive therapy and psychoeducation. The study found that within 3 months of onset of the first manic episode, most of the patients in the sample achieved symptomatic but not functional recovery, i.e although they were symptom free they were not functioning at a premorbid level. The functioning appeared to improve with a longer follow-up of 6 months (Kauer-Sant'Anna & Bond, 2009). The EPPIC study (Conus & Cotton, 2006) was an open, multi-elemental treatment that found while 90% of first episode patients achieved recovery at 6 and 12 months, 40% did not recover symptomatically and were still showing anxiety or depression. Unfortunately, few studies have focused on the early phase and treatment of bipolar disorder. Specific studies did not focus exclusively on first-episode bipolar disorder, but merged the bipolar patients with a larger affective psychosis group (Tohen, 1992 ; Strakowski, 2000). This makes it difficult to know a lot of definitive information on a first episode of bipolar disorder (Conus & Cotton, 2006).

Early Detection in the Prodromal Period

In 2007 Berk and Conus found that possible patterns of prodromal bipolarity included the onset of sub-threshold symptoms such as dysthymia and cyclothymia, mood fluctuations, family history, substance abuse, conduct problems, suicidal ideation, a major depressive episode with predictors of bipolarity. It has been problematic to specifically determine a prodromal bipolar profile that would lead to specific treatment interventions. Berk and Conus also suggested that the lack of specificity of the symptoms can also be an issue, as mild mood fluctuations in young adults are common, but are only the precursor to true mental illness in a small percentage (Berk & Conus, 2007). The index episode in bipolar disorder tends to be depression (Berk & Hallam, 2007) as it is the majority of the morbidity in the disorder. This means it is possible to mistake an individual with bipolar disorder as having unipolar depression. A study by Scott and Meyer (2007) indicates that clinicians need to be more sensitive to the possibility of the likelihood of bipolar disorder in patients presenting with depressive symptoms. In an open study done by Huntley and Jones (2005) twenty-five children of bipolar parents were matched with 22 age and sex-matched healthy controls. The subjects were assessed using the Schedule for Affective Disorders and Schizophrenia-Lifetime version (SADS-L) and completed self report measures on dysfunctional attitudes, behavioural inhibition/activitation, social rhythms, coping styles and subjective experience of sleep. Children also recorded a 7-day diary that recorded and measured self-esteem, positive and negative affect and reactions to events. Fifty six percent of the children of bipolar parents reported mood symptoms, compared to the nine percent of the control children who reported such symptoms.

According to research done by Correll (2007) early detection should utilize genetic, endophenotypic (i.e., neurocognitive and neurochemical) and clinical methods. Most of the research that currently exists focuses on genetic or endophenotypic risk markers for bipolar disorder. While still emerging, work in the clinical high risk area (which focuses on diagnosing through prodromal symptoms) is promising. A retrospective study (Egeland & Hostetter, 2000) using 58 Amish youths who went on to develop bipolar disorder found mania and depression related symptoms prior to onset of bipolar. In another study (Fergus & Miller, 2003) parents of children diagnosed with bipolar disorder responded to a mail-out survey by describing the presence and severity of a list of specific symptoms during each year of their child's life. While no exact prevalence rates were reported, the authors found that symptoms in the irritability group were the earliest symptoms that could separate those children with bipolar disorder from those who did not have it. Once the children reached ages 7-9, depressive and manic symptoms would separate the groups even further. The final group of psychosis and suicidal behaviors was the last to distinguish bipolar from non-bipolar children, at age 9. Despite these encouraging results, the clinical method has not been used heavily to identify the individuals at risk for the disorder. This may be due to the fact that classification systems such as DSM use mania as the defining mood episode which has variations, like mixed mania or hypomania as well as the fact that the symptoms tend to develop very quickly (Correll 2007).

RISK FACTORS

Risk factors for bipolar disorder include disturbances in mood regulation, a family history of mood disorders, negative stressful life events and a cognitive style that emphasizes autonomy and is critical of the self (Bauer & Juckel, 2008). Certain neurological abnormalities are also considered risk factors, such as volume changes to the ventricles, white matter, caudate, putamen, amygdala and hippocampus (Hajek & Carrey 2005). As well, the more episodes an individual incurs, the higher the risk of relapse. All these elements provide a strong case for intervening in bipolar disorder as soon as possible (Berk & Malhi, 2008). One study by Blechert and Meyer (2007) found that individuals with hypomanic temperaments are at risk of developing symptoms of bipolar disorder. A family oriented study (Jones & Tai, 2005) found that children of bipolar parents exhibited more rumination and risk taking as rumative thinking styles were reportedly correlated to hypomanic personality traits in adults. There also seemed to be greater instability in self-esteem and higher levels of negative affect than in control subjects. Lewinsohn and Seeley (2003) reported that first-degree relatives of adolescents with bipolar disorder exhibited significantly higher rates of major depressive disorder and subsyndromal bipolar disorder than first-degree relatives of adolescents with no history of mental disorder. A large population based study in Denmark (Mortensen & Pedersen, 2003) examined risk factors for bipolar disorder among 2.1 million individuals. They found that the risk of bipolar affective disorder was associated with a history of bipolar disorder as well as schizophrenia and schizoaffective disorder. The only other consistent associations found were early maternal loss. Children who lost their mother before their fifth birthday had a 4.05 increased risk of bipolar disorder.

Research by Scott and Meyer (2007) noted that family background is important to keep in mind (more than 3 first-degree relatives with bipolar disorder, or more than 3 relatives of a single generation having an affected relative may increase chances of developing bipolar disorder). What is still unknown is if these indicators are individual or cumulative risk factors and how much the disorder would be altered if treatment at this stage was targeted at bipolar disorder instead of major depressive disorder (Scott & Meyer).

TREATMENT RESEARCH IN EARLY DETECTION

As the attempt to identify the prodromal phase of bipolar disorders only recently began, there is little to no evidence for any effective treatment options for these early phases (Correll, 2008). The options with the least impact that will still meet the needs of the risk profile should be suggested (Correll). Very few pharmacological trials have been attempted with at-risk subjects. All of the trials involved offspring of bipolar parents who were already diagnosed with another psychiatric disorder, mostly ADHD or mood disorders that were not bipolar disorder. The two studies that did not involve a

placebo showed significant improvements with valproate or quetiapine (Chang, 2003; Dellbello, 2007) although the placebo trial (Findling, 2007) failed to show a difference between valproate and the placebo. Both groups in the placebo trial showed mood improvement along with better psychosocial function (Correll, 2008).

ASSESSMENT TOOLS FOR EARLY DETECTION

For psychosis, a variety of established interviews and scales such as the Scale of Prodromal Syndromes (SOPS) have allowed reliable identification of prodromal subjects. There is currently no validated rating instrument for attenuated bipolar symptoms that can assess attenuated manic symptoms and categorize prodromal groups (Correll, 2008). Several rating scales have shown stronger associations with bipolar disorder patients compared to control subjects (Tillman & Gellar, 2005; Youngstrom, 2004), but there has yet to be an established assessment tool.

3. Major Depression

PREVALENCE

The prevalence of depression in adolescents under the age of 19 has been reported to range from 20% - 24% (Allen et al., 2007; Merry et al., 2007). Some researchers have stated that most adult disorders should be thought of as an extension of juvenile disorders (Kim-Choen et al., 2003), as a first episode of depression substantially increases the risk for subsequent episodes. Aside from the emotional changes associated with depression, depression can also lead to social withdrawal, educational and occupational disability, and interpersonal turmoil if left untreated (Ingram, 2004). As a result, recognizing the first episode of depression and its symptoms is important not only in preventing the onset of that episode of depression but also subsequent episodes.

DELAY IN TREATMENT

There are a number of factors that can influence a delay in the treatment of major depression. Some of these delays include difficulties in defining, recognizing, and assessing early depression. How adolescents view depression and possible treatment options has also been documented as a potential barrier to treatment. Hickie et al., (2007) surveyed adolescents regarding their thoughts about depression and treatment. Sixty-four percent of adolescents stated they would seek help from their family and friends, whereas only 16.5% stated they would seek assistance from a doctor, and 7% did not know where they would seek help. Without adolescents being familiar with or feeling comfortable in seeking assistance from a wide range of health care professionals there is likely to be a delay in treatment.

PATHWAYS TO CARE

The majority of adolescents experiencing a first episode of depression are most likely to be seen by a health care professional at the prompting of a significant adult in their life, such as a parent or teacher (Essau, 2004). As a result, teachers and primary health care professionals are likely to be the first point of contact in terms of seeking care. Therefore, parents, teachers, and primary health care professionals need to be trained to recognize the early signs of depression (Allen et al., 2007).

OUTCOME OF EARLY TREATMENT

Traditionally, the treatment of depression has primarily focused on cognitive behavioural therapy (CBT) and antidepressant medication. The findings regarding these two options of treatment have been mixed, but overall there is good outcome for tertiary prevention. There has been an increasing consensus that antidepressant medication may not be the best treatment option for children and adolescents who are experiencing depressive symptoms for the first time. Currently, there are no studies that focus specifically on treatment at the first episode of depression. The samples used in intervention studies often include both people who are depressed for the first time as well as those who have had previous episodes, and so samples tend to be mixed.

There has been a recent focus in the literature on primary and secondary prevention for depression. Primary prevention for depression focuses on increasing awareness and developing strategies to combat depressive symptoms in all children. Secondary prevention programs are specific in that they target individuals who have been identified as being at an increased risk for major depression (Merry et al., 2007).

The results from research focusing on primary prevention have been mixed. In a review article written by Merry and Spence (2007) 9 studies were mentioned that focused on universal prevention. Of the 9 studies mentioned 4 were randomized control studies. One example of the work being done with primary prevention programs was conducted by Clarke et al., (1993) where they examined the impact of a school-based primary prevention program focusing on adolescent depressive symptomatology. The program consisted of psychoeducation about depression with training in scheduling pleasant events and problem-solving skills, and was targeted towards grade 9 and 10 students who were enrolled in a mandatory health class at two suburban high schools. Students were randomly assigned to partake in the prevention program during health class or the control condition which was the regular health class. Results from the study did not show any significant differences between the intervention group and control group on the Centre for Epidemiological Studies Depression Scale (CES-D), which is a self report form measuring the frequency of 20 depressive symptoms over the past week, either immediately after the intervention or at a 12-week follow-up.

There have been mixed results reported from studies focusing on primary interventions. These mixed results are thought to be due to a number of factors. Spence and Shortt (2007) noted that many of the primary intervention studies have had serious methodological difficulties. One methodological concern is the use of intervention facilitators who may not have a comprehensive understanding of the theoretical underpinnings used to develop the intervention, in addition to not being thoroughly trained in the techniques they have been asked to implement.

The results from secondary interventions have proven to be more consistent and promising compared to the studies focusing on primary prevention. For example, a study conducted by Yu and Seligman (2002) examined the effectiveness of the Penn Optimism Program in children considered to be at a high risk for depression because of elevated depression scores and perceived family difficulties. Though these children were thought to be at a high risk, none of them met the criteria for clinical depression. The children were randomly assigned to the intervention group, where they took part in the program, or the control group, in which the children simply did not partake in the program. It was found that those who demonstrated symptoms of depression experienced a significant reduction in their symptoms immediately after the intervention and these results remained present at the time of a 6-month follow-up. To summarize, a number of studies focusing on targeted interventions have reported positive results after the intervention and at follow-up. However, replication in the area of targeted interventions is encouraged.

EARLY DETECTION

Early detection for major depression is a complicated process. In regards to the emergence of prodromal depression Fava et al., (2007) described 4 symptom patterns including: (a) sudden onset depression, which is associated with melancholic features and bipolar disorder; (b) gradual onset depression, where mood disorders may take months to emerge and is often associated with common stressful life events; (c) neurotic onset depression, which is commonly preceded by anxiety disorders, and (d) fluctuating onset depression, in which symptoms fluctuate in addition to their severity. Additional signs of prodromal depression have been documented as including impaired work and motivation, fatigue, insomnia, in addition to several others.

RISK AND PROTECTIVE FACTORS FOR THE DISORDER

There have been a number of risk factors that have been identified as possible triggers for major depression. Lewinsohn et al., (1994) found that major life events were stronger predictors of individuals experiencing a first episode of major depressive disorder compared to recurrent episodes. Some other risk factors that have been identified for major depression include: parental psychopathology, female gender, parent-child interaction, personal psychopathology, and cognitive style. It is important to note that these risk factors are not exclusive to major depression, but they may also be risk factors for other psychiatric disorders (Essau et al., 2004).

Just as important as knowing the risk factors for depression, is knowing the protective factors for the disorder. Factors that have been found to increase individuals' resiliency to depression include: high intelligence or problem solving skills, strong interests outside the family, the presence of a confiding adult outside the family, a warm and supportive relationship with at least one parent, effective parenting skills, and a secure attachment history. This is not an exhaustive list of protective factors, but it does mention some factors that have been found to help prevent the development of depressive symptoms.

ASSESSMENT TOOLS FOR EARLY IDENTIFICATION

Little has been done with regards to the development of assessment tools for early detection of major depression. Prodromal depressive symptoms are typically milder than those featured in clinical depression and are often closer to the 'normal' range of the spectrum than the clinical end. As a result, assessment measures need to possess a level of sensitivity that is able to pick up the milder forms of the depression criteria.

4. Anxiety Disorders

INCIDENCE AND IMPACT

Estimated lifetime prevalence rates for having one or more anxiety disorders are between 10-20% (Ollendick & March, 2004). Despite this rather large approximation, anxiety disorders still appear to be one of the most common forms of psychological distress reported by both children and adolescents (Connolly et al, 2007; Andrews & Wilkinson, 2002). If left untreated, anxiety disorders can have a chronic progression into adulthood, ultimately causing a large cost to the community (Barrett & Turner, 2001). Murray & Lopez (1996) calculated that panic disorder and OCD alone account for 1.9% of the total burden of disease in developed countries. Anxiety disorders also effect the individual's personal and social functioning. Rapee et al. (2005) described those with an anxiety disorder as having reduced career choices, secondary substance use problems and increased medical use. Given that most individuals with an anxiety disorder will not seek treatment well into adulthood the cost to the community becomes greater as the prognosis for alleviating the anxiety worsens with age and severity of symptoms (Connolly et al., 2007).

EARLY INTERVENTION

Although there is very little research in the area of prevention and early detection for anxiety disorders to date, recognition of the importance of this type of research appears to be growing. For example there have been a number of preventative programs developed and used in the past that have helped reduce anxiety indirectly. For instance, most prevention programs in this area have been directed at improving coping skills, reducing stress, or preventing depression; all of which appear to be beneficial to reducing anxiety, however, none, or very few attempt to target the prevention of anxiety itself (Connolly et al, 2007). The main prevention programs for anxiety disorders are focused on tertiary prevention, meaning more attention is placed on treating those already affected in order to maintain and improve prognosis, as opposed to reducing the incidence of anxiety disorders altogether. Rapee et al. (2005) believe that this is due to the successful secondary treatment options both pharmacological and psychological which are currently available.

The current opportunities which do exist for secondary prevention mainly focus around psychoeducational programs, both school and media based. There are also some community screening self report measures which aim to target mild to moderate anxiety disorders in order to improve long term functioning. Cognitive Behavioral Therapy (CBT) interventions have shown to have some promising effects. Dadds et al. (1997) evaluated the effectiveness of CBT on a sample of youths prescreened for having anxiety problems. Both the control and treatment groups showed significant improvements after therapy, however, this improvement was only maintained by the treatment group at a 6 month follow up. Other studies have shown similar results (Barret & Turner 2001) suggesting that CBT interventions are quite beneficial. Given these findings, it has been recommended (Connolly et al., 2007) that clinicians should encourage to refer patients to this type of treatment even when symptoms of anxiety are quite minimal.

RISK FACTORS

There have been a few possible risk factors suggested in the literature. Some of these include temperamental style of behavioral inhibition, parental anxiety disorder (modeling fear, reinforcing anxious coping behavior), overprotective, and overly critical parenting. Problem focused coping has been shown to be a protective factor (Dadds & Roth, 2001; Rapee, 1997; Spence, 2001 as cited in Connolly et al., 2007).

COMPLEX CASES

1. Physical Handicap

A review of the literature demonstrates that early detection of mental illness has not been addressed in this population. A first step would be a review of the different aspects of the area. Literature in this area is very mixed. The focus is usually on the risk of developing psychiatric problems with respect to a specific illness or specific event, for example the risk of developing depression following a gunshot wound. Several illnesses and physical problems such as cancer, stroke, multiple sclerosis, spinal cord injury, spinal pain, back injury, obesity, migraines, thyroid disease, respiratory conditions (including lung transplantation), gastrointestinal disease, arthritis, allergic conditions, vascular condition, neurological conditions, metabolic or autoimmune conditions, bone and joint conditions, and stroke are studied in the context of the risk of comorbid psychiatric problems most likely arising as some kind of sequelae to the illness.

With respect to individuals who have physical handicaps the issue of their risk of developing psychiatric problems over and above those discussed in the general population has never been addressed in the literature.

2. Cognitive Impairment

MENTAL RETARDATION

Adequate epidemiological data regarding persons with both mental illness and mental retardation has yet to be gathered; however, clinical experience has shown that the full range of psychiatric disorders may be found among individuals with mental retardation. This includes co-occurrence with schizophrenia, affective disorders, obsessive-compulsive disorder, anxiety disorders, and behavior disturbances with injurious and aggressive behavior directed towards self, others, or objects. Proper identification and effective treatment of these mental disorders are especially important for people with mental retardation. In fact, while it is usually not possible to correct and reverse the underlying cognitive deficits, treatment of the behavioral and emotional problems that can be associated with mental retardation can significantly improve functioning and quality of life.
Prevalence estimates of mental and emotional disturbance among persons with mental retardation in community and institutional settings vary widely depending on how the data was collected. The

most often quoted figures indicate that mental disorders occur substantially more often in persons with mental retardation than they do in populations without mental retardation. Among the reasons for difficulty in estimating these prevalence rates are sampling bias due to self-selection and difficulty in making reliable and valid psychiatric diagnoses. Research designs that can remedy these problems are needed. Inherent in efforts to improve our knowledge of the epidemiology of emotional disturbance among persons with mental retardation is the development of better diagnostic criteria.

One of the most important elements in prevention of mental disorders among individuals with mental retardation is early identification. There is a current lack in the literature regarding the precursors of developing a behavioral or emotional disorder in children who are mentally retarded, or at risk for developing mental retardation. Early identification and diagnosis of co-existing mental and emotional disorders in those with mental retardation may provide an opportunity for early intervention and mitigation of psychopathology. Since many individuals with mental retardation are already receiving treatment and support services, the development of effective regimens for treatment of behavioral and emotional dysfunction is of high priority. Clinically we know that many individuals with mental retardation are receiving psychotropic medication. Careful analysis of both positive and negative effects of such drugs, including the effects on learning and adaptive behaviors and/or tardive dyskinesia is especially needed.

Persons with mental retardation who also exhibit emotional problems may present great difficulties to their families, whether they live at home or elsewhere. Research on family structure, process, and interaction may illuminate ways in which family-focused treatment and intervention programs might be devised. One of the most difficult problems faced by persons with mental retardation and emotional disturbance is their relationship with the service delivery systems. Since many local jurisdictions have separate service systems for mental retardation and mental illness, the extent of coordination between these systems is an important area for study.

INTELLECTUAL DISABILITY AND PSYCHIATRIC PROBLEMS SOME SPECIFIC STUDIES

Several studies have described prevalence rates of psychiatric illness amongst adults with intellectual disability. Figures vary from 10 to 39% . Typically figures are around (5% forschizophrenia, 1% forbipolar disorder, and 2.5% for depression and approximately 5% for anxiety disorders (Deb et al., 2008) Deficits in intellectual ability have shown to be risk factors for schizophrenia in prior research (Reichenberg, et al., , 2007). In a comprehensive review, cognitive problems in a few areas, such as verbal memory and learning, spatial working memory, attention, speed of information processing, performance IQ and motor skills are also a characteristic of schizophrenia (Reichenberg, Weiser, 2005) and are often present prior to the onset of psychotic symptoms (Heinrichs, Zakzanis, 1998). Recent findings specify that a genetic condition, 22q11 deletion syndrome, is also associated with higher risks for schizophrenia (Bassett & Chow 1999). Other recent research has identified a genetic basis for a subtype of schizophrenia that is characterized by cognitive deficits. This research suggests a common etiology for cognitive deficits and psychosis in a portion of schizophrenia cases (Morgan & Leonard, 2008).

The amount of literature on cognitive impairment and the risk of developing bipolar disorder is considerably less than that in schizophrenia (Pradhan, 2008). Changes in vital functions, like appetite or insomnia have been characterized as early signs of mood disorders in mentally retarded adolescents (Masi, 1998). Studies have shown that bipolar disorder can be diagnosed among those who are mentally retarded using a modified version of the DSM-IV criteria, to emphasize mood episodes observable by others, if the patient is not able to explain them him or herself (Kurita, 2008).

Cases of depression can also be diagnosed by similarly modified DSM-IV criteria (focusing on other peoples' observations of the patient) such as is done with bipolar disorder (Janowsky, 2005). A study by McGillivray and McCabe (2006) found that people with intellectual disabilities who were at risk for depression reported symptoms such as tiredness, agitation, self-criticism, altered sleeping patterns,

loss of energy, sadness, crying, agitation and concentration difficulties. Similar symptoms were reported in those who were already depressed, but occurred less frequently in those at risk. The exception to this was that of guilty feelings, which was a much more common symptom in the at risk group. Feelings of worthlessness and suicidal ideation were less common in the at risk group (McGillivray and McCabe, 2006).

Anxiety disorders are not frequently reported in those with mental disabilities, but it is possible this is due to problems in diagnosis (Vitie11o & Behar, 1992). As a result, little research has been done on risk factors for anxiety disorders. One study by Mas (1998) looked at anxiety disorders in mentally retarded adolescents. The study characterized the disorder in the mentally impaired by aggressiveness, anger, flight or crying. Unfortunately, no diagnosis could be made unless the individual had a high enough level of verbal functioning that he could explain his or her state of anxiety. Without verbal communication, the presence of an anxiety disorder can only be assumed (Masi, 1998).

3. Developmental Disorders

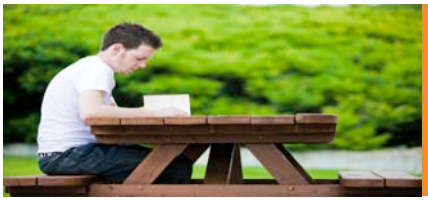
There is well described literature in terms of psychiatric disorders that focus on the range of developmental disorders. Clinically, it is known that many young people with developmental disorders do later develop a psychiatric problem. However, published reports in this area tend to be focused from the other direction. In the schizophrenia literature for example, one will hear about the proportion of people who develop schizophrenia that may have had an earlier diagnosis of a developmental disorder. Similarly there is literature describing that ADHD may be a risk factor for bipolar disorder. Thus, improved data on prevalence would be valuable. Secondly, there is a lack of services for those with complex neuropsychiatric disorders as outlined in a recent Alberta report for Calgary Health Region. Only through improved diagnosis, identification and treatment in this area will detection of psychiatric disorders be improved. Early detection of the development of further comorbid psychiatric disorders should be built into the improvement of services for this already vulnerable group.

Discussion

This review has focused on early detection and intervention for mental illness. The work done in schizophrenia has provided a model for examining other psychiatric conditions such as bipolar disorder, depression and anxiety. Work ongoing in early psychosis is one of the most exciting in the mental health area today, as for the first time progress is being made to try and prevent or at least reduce the impact of one of the most devastating psychiatric illnesses. However, although well underway, work in this area has a long way to go.

Similarly, work is advancing in early detection and intervention for bipolar disorder and depression but it is in the very early stages of study. Early approaches for anxiety seem to be taking a different although equally valid direction. Clearly, early methods for different disorders should not all follow the same path as they are different disorders with different precursors and sequelae. However, what is similar is that work in early intervention should be a focus for mental illness in general regardless of the different formats for early intervention and detection.

In summary, the research focus for those with physical handicaps is on the risk of developing psychiatric problems as a sequela to physical illness or physical disability. The risks and impact of developing a psychiatric illness over and above those in the general population does not seem to have been addressed. Approximately 1/3 of those with cognitive disabilities have a psychiatric illness but the literature tends to focus on the disorder and that those with the disorder tend to have a higher risk of poor cognition rather than the other way around. Adequate epidemiological data is clearly lacking and knowledge tends to be based on clinical experience. Prospective studies appear to be non-existent and this group is usually excluded from early intervention programs. Finally, there is a wide range of developmental disorders and the focus is usually on the psychiatric disorder to determine the risk. Often services and continuity of care for this group are poor and as such this severely limits the additional care of early detection for other disorders. It is not surprising when we review the state of affairs for those individuals who may be considered complex cases, i.e. those with preexisting physical and mental handicaps and those with psychiatric developmental disorders who also suffer from psychiatric problems, that early detection in this area is almost non-existent. As we move forward in different directions promoting early detection we need to include some complex cases and not leave them as an after thought.



Recommendations

Early Intervention for Psychosis

1. Proper implementation of programs and the development of performance measures; i.e., proper standards for early intervention
2. Understand the impact of complex interventions
3. Reduce the duration of untreated psychosis
4. Improve the pathways to care
5. Improve engagement in and compliance with treatment
6. Determine not just whether treatment effective but for whom
7. Determine how long treatment should last
8. Determine the focus of continuity of care post specialized programs

Early Intervention for other disorders

1. Issues for bipolar disorder may be similar to psychosis and the area needs to catch up
2. For depression and anxiety there may be a need for a different focus of early intervention
3. Depression and anxiety may be more responsive to early education

Detection and Intervention in the prodromal phases of illness

1. Improve prediction algorithms relative to treatment risk
2. Determine the mechanisms that account for the onset of various disorders
3. Determine whether there are alternatives to traditional treatments of psychiatric disorders in the early phases
4. Keep pre-illness treatment in the realm of research until we have more knowledge

Complex Cases

1. Obtain much more epidemiological data
2. Identify precursors of emotional disorders
3. Better understand current treatment practices
4. Ensure that early detection of mental illness is an integral part of the treatment

Early Intervention for Youth

As described in this review, the current focus is on early detection and intervention across the different disorders. Rather, we need to develop a global plan for early detection of all mental disorders and focus on a wide range of early signs and symptoms in youth. Not only may this aid early detection but may help with the stigma of the more serious disorders.

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