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Monographic Article

Psychosocial interventions in early psychosis

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Abstract:

Objectives: To describe the development of early intervention services for psychosis and the evidence for psychosocial interventions in a first episode of psychosis.
Method: A descriptive review
Results: Early intervention services (EIS) for psychosis have spread widely around the globe since their early beginnings in Australia, England and North America. The rationale for these services is twofold. First that worse clinical and social functioning outcomes are associated with delays in treatment and insufficient attention to relapse prevention and second that many psychoses occur at a critical period in a young person's life causing disruptions to education, employment and relationships from which he or she may never recover. Psychosocial interventions, focused on managing distress, developing coping strategies to reduce the risk of relapse and on returning to work and education have at least as important a role in recovery as does medication. Evidence for the effectiveness of family interventions, cognitive behaviour therapy for psychosis and supported employment is reviewed. Beyond these interventions, the optimism and enthusiasm of a typical EIS play an essential part in promoting recovery.
Keywords: Early intervention in psychosis, schizophrenia, psychosocial interventions, functional recovery.

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Introduction

According to the World Health Organization (WHO, 2001) schizophrenia is the ninth leading cause of disability among all diseases worldwide.The total yearly cost of schizophrenia-spectrum psychoses in England is approximately £6.7 billion [1] (Mangalore & Knapp, 2007). The highest percentage of these costs was due to lost productivity due to unemployment, absence from work and premature mortality (£3.4 billion). The cost of treatment to the National Health Service and local authorities was £2 billion and annual costs of welfare benefits were £570 million. The costs to families of informal care and private expenditure amounted to £615 million. However, the *human cost*, namely, the suffering by individuals and their carers, that could be estimated in terms of adverse impact in Quality-Adjusted Life Years (QALY) and quantified in monetary terms, has been proposed to exceed the health, social care and output loses added together (Sainsbury Centre for Mental Health, 2003).

The belief that better outcomes and hence reduced financial and societal burden might be achieved by intervening earlier in the course of disorder goes back to the turn of the last century even before the introduction of neuroleptic medication (e.g. Sullivan 1927) but it was not until the 1990s that services began to emerge explicitly targeting young people in a first episode of psychosis (e.g. McGorry *et al*. 1998).

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Perhaps the best known service model is the Early Psychosis Prevention and Intervention Centre (EPPIC) in Melbourne Australia (McGorry *et al*. 1996) which has provided a valuable resource in terms of treatment manuals, guidelines and scientific evaluation disseminated around the world. In England, one of the earliest of these services was in Birmingham (Jackson and Farmer 1998) which under the direction of Max Birchwood and colleagues spearheaded the development of Early Intervention Services (EIS) nationally. The 1999 UK Government's decision to ensure that all young people with a first episode of psychosis would receive prompt treatment from a dedicated EIS (The National Health Services (NHS) Plan, Department of Health (DoH), 1999) was followed by the Department of Health in its Mental Health Policy Implementation Guide (DoH, 2001)which promulgated the establishment of 50 EIS teams that would see around 150 new cases of psychosis per year in young people aged 14-35 and provide specialised treatment for the first 3 years of illness. The teams were therefore expected to have case load ratios of 1:15 (staff: patient) and provide a combination of best practice pharmacological, psychological and social interventions within an assertive community treatment framework. Their philosophy is captured in 'The Early Psychosis Declaration', jointly presented by the World Health Organisation and the International Early Psychosis Association (Bertolotte & McGorry, 2005) that proposes 5 key objectives for action: improving access, engagement and treatment, raising community awareness, promoting recovery, family engagement and support and practitioner training.

In the remainder of this article we turn to an examination of the essential components an EI service with a special emphasis on psychological and social interventions.

1 Approximately €9.8 billion in 2007

Rationale for a psychosocial approach in early psychosis

Epidemiological studies show that the onset of schizophrenia is age-related, with onset of illness typically occurring throughout adolescence and peaking in the twenties (Hafner *et al.* 1993; Kirkbride, *et al*. 2006). Thus the majority of onsets occur at a critical developmental life stage in terms of personality, social role, educational and vocational achievement (Birchwood , McGorry & Jackson, 1997; Rinaldi *et al*. 2010) and so it comes as no surprise that the first episode of psychosis (FEP) has been found to be associated with a decline in education and employment (Harris *et al*. 2005; Goulding, Chien & Compton, 2010; Jones *et al*. 1993; Kessler *et al*. 1995; Mueser, Salyers & Mueser, 2010). Often this decline will already be apparent by the time the young person comes to the attention of the health service. These young people are more likely to be single, unemployed, to have reduced family contact and to be homelessness than their healthy contemporaries with adverse social circumstances consistently worsened on second presentation through a downward spiral of negative social outcomes in the early years of psychosis (Garety & Rigg, 2001),). Thus a key rationale for early intervention in psychosis is to limit these disruptions to social and role functioning as well as reducing unnecessary suffering by achieving prompt resolution of symptoms and distress (Jackson, McGorry, & Allott, 2009).

Singh (2010) highlights two main strands of evidence in support of early intervention in psychosis: the 'critical period hypothesis' and 'the duration of untreated hypothesis'. The 'critical period' hypothesis is based on the disruptive impact of illness on key developmental attainments such as completing education or holding down employment but also on evidence that onsets earlier in life have worse longer-term symptom and disability outcomes (Harrison *et al*., 2001; Wiersma *et al*., 1998) and on the notion of a "plateau effect" whereby the most aggressive deterioration following the onset of illness happens in the first 2-3 years of illness, suggesting greater neuronal and psychosocial plasticity at an early stage (Birchwood, Todd & Jackson, 1998; McGlashan, 1984). There is strong evidence that a longer duration of untreated psychosis (DUP) is associated with poorer outcomes (Marshall *et al*., 2005) and decreased response to antipsychotic medication (Perkins *et al*. 2005). In a recent systematic review of 27 follow up studies, Marshall, Harrigan and Lewis (2009) concluded that the association between longer DUP and poorer outcome held after controlling for premobrid adjustment. Importantly, the need for specialised pathways to care in early psychosis became apparent after research from Canada and the UK revealed that most of the treatment delay occurs *after* help-seeking (by the individual or their families) and *within* generic health services (Brunet *et al*. 2007; Norman *et al*. 2004).

Intervention strategies in Early Psychosis

These notions of the importance of starting treatment early and attempting to prevent subsequent relapse and deterioration link to the three main intervention strategies in early intervention in psychosis each targeting different stages of illness (Singh, 2010). These are, the prevention of the onset of psychosis in people thought to be at particularly high risk of developing a psychotic illness, the promotion of early detection to identify cases and reduce the duration of untreated psychosis, and the improvement of outcomes in people who have experienced a first episode of psychosis by facilitating and maintaining their social and clinical recovery.

Preventing transition to psychosis

Services working with people with an 'At-Risk Mental State' (ARMS)[2] aim to prevent the transition to psychosis, but should transition occur, contact with services can also help to reduce the duration of untreated psychosis. Some studies have shown that antipsychotic medication alone (McGlashan *et al.* 2006) or in combination with psychological interventions (McGorry *et al.* 2002) reduce the likelihood in transition. However, some commentators (e.g. Warner2005) have highlighted the ethical dilemmas involved in intervening before the onset of psychosis, namely, the potential harm caused to 'false-positives' or people who are incorrectly screened as to be at risk of developing psychosis but who never develop the illness. Of particular concern are the risks of taking antipsychotic medication and erroneously adjusting one's life goals because of the perceived stigma of being labelled at -risk of developing psychosis (Goode, 1999). Therefore the international agreement (International Early Psychosis Association Writing Group, 2005) is that clients attending services for at high risk of psychosis must be help-seeking and that psychosocial interventions should be prioritized in this group. For instance, Lemos-Giráldez, Vallina-Fernández, Fernández-Iglesias *et al.* (2009) describe how in their prevention program for psychosis set in the Spanish region of Cantabria[3] all clients identified to be at ultra high risk for psychosis are offered CBT, and only those with severe attenuated symptoms of psychosis who additionally present with acute clinical or functional impairment are offered low dose antipsychotic medication.

Early detection

People with FEP in generic mental health services have poor outcome (Singh *et al*., 2000), with data suggesting that

2 An individual can meet ARMS criteria in one or more of three ways: (1) a recent decline in functioning coupled with either schizotypal personality disorder or a first-degree relative with psychosis; (2) 'attenuated ' positive psychotic symptoms; and (3) a brief psychotic episode of less than 1 week's duration that resolves without antipsychotic medication (Yung et al. 1998).
3 Website: www.p3-info.es

there are long delays in the start of treatment of people with early psychosis in routine mental health services in a range of countries (Norman & Malla, 2001; Farooq *et al.* 2009). Some of these delays are due to a lack of general public awareness of the symptoms of psychosis and the importance of early treatment. The Scandinavian Treatment and Intervention in Psychosis (TIPS) study has specifically looked at the benefits of an early detection strategy, which included rapid access to specialist early detection teams and a massive public information campaign targeting teachers, general practitioners and young people with information about the early signs of psychosis and the importance of prompt treatment. This early detection programme was associated with shorter DUP, reduced suicidal ideation, milder symptoms at baseline as well as a lower likelihood of experiencing negative symptoms and a trend towards improved functional and social outcomes over the two year follow up (Larsen *et al.* 2006; Melle *et al.* 2004; Melle *et al.* 2008).

Interestingly, the ongoing massive information campaign aimed to raise awareness about recognising the symptoms of psychosis seems to be a necessary concurrent component of early detection as Joa *et al.* (2008), in a study using a historical cohort design pre and post the TIPS programme, found that once the campaign stopped , help seeking reduced, with DUP and symptom severity at presentation regressing to the pre campaign stage.

There have been some attempts to increase early detection of psychosis by training primary care physicians but such approaches have achieved only a modest impact, partly because of the relative rarity of incident psychosis in relation to common mental disorders in these settings but also because further even longer delays to confirmed diagnosis occur in the specialist mental health services (Power *et al.* 2007).

Promoting and maintaining recovery

Although the great majority of people with FEP (up to 96%) achieve complete clinical remission within 12 months (Robinson *et al.* 1999; Robinson *et al.* 2005; Rummel *et al.* 2003), relapse among those managed by generic mental health services occurs in 20-35 % at 1 year, 50-65% at 2 years and 80% at 5 years (Robinson *et al.* 1999). Two large randomised controlled trials – the Lambeth Early Onset (LEO) in the UK (Craig *et al.*, 2004; Garety *et al.* 2006) and the early detection and assertive community treatment in Denmark (OPUS; Petersen *et al.* 2005), confirmed earlier impressions of superior clinical, social and vocational outcomes as well as reduced readmissions to hospital. Recent meta-analyses concluded that EI services significantly reduce the risk of a relapse, with the number needed to treat of 8 to prevent one relapse (Alvarez-Jimenez *et al.*, 2009). These studies share common features of employing a multidisciplinary team sufficiently skilled to deliver a number of evidence-based interventions, a 'youth focus' and an assertive outreach model of engagement and monitoring across the critical period of 2 to 3 years post-onset.

Key to these successful outcomes is the ability of EI teams to develop and maintain therapeutic alliances with the people they treat and studies convincingly demonstrate better engagement with EI services than with generic mental health teams (Craig *et al.* 2004; Lester *et al.*, 2009) reflected in an increased number of appointments offered by the EI service and attended by the service user, a higher likelihood of being offered psychological interventions and having greater adherence to prescribed medication (Craig *et al.* 2004; Garety *et al.* 2006) and overall higher satisfaction with the care provided (e.g. Garety *et al.*, 2006; Lester *et al.*, 2009).

Psychosocial interventions

There is clear evidence in favor of beneficial effects of medication in terms of suppressing positive symptoms of psychosis and in preventing a relapse (Robinson *et al.*, 1999) but medication is on the whole, less effective in terms of impact on the cognitive deficits and negative symptoms of psychosis (Keefe *et al.* 2007; Swartz *et al.* 2007) that tend to be more closely linked to poor social functioning (Wykes, 2010). Furthermore, the subjective impact of medication is often reported to be unpleasant, in part due to adverse side effects . Not surprisingly, non-concordance with medication is high, with approximately 50% of clients with first episode psychosis discontinuing treatment within a year from discharge from hospital (Mojtabai *et al.* 2003; Verdoux *et al.* 2000).

While pharmacological interventions remain the first line treatment it is clear that psychological and social interventions are needed at the very least to help the sufferer get their life back on track – to complete education, develop a career and establish meaningful relationships. These non-pharmacological approaches also have a direct role to play in improving outcome and preventing relapse given that the social environment plays a key role in triggering onset and relapse as shown by the increased likelihood of relapse of psychotic illness in people with psychosis who live in family environments characterised by high levels expressed emotion (high criticism, hostility and over-involvement) (Butzlaff & Hooley, 1998; Kavanagh, 1992; Pourmand, Kavanagh & Vaughan, 2005; Vaughn &Leff, 1976) and reports of increased reactivity to daily stressors reported in studies using experience sampling methods (Myin- Germey *et al.* 2003).

What is the evidence for the use of psychosocial intervention in EP?

Family Intervention

Families tend to be the main source of social support for service users given their reduced social networks (Berry *et*

al. 2007; Stanghellini & Ballerini, 2007). In early psychosis, they often play a crucial role in accessing mental health services (Morgan, *et al.* 2006) and in improving treatment adherence (Ramirez- Garcia *et al.* 2006).

Caregivers of people experiencing a first episode of illness face unique challenges and therefore have different needs from families who have been in the caring role for a long time (Fadden & Smith, 2009). High levels of distress have been reported in first episode families (Kuipers & Bebbington, 2005; Martnens & Addington, 2001) as the onset of mental health difficulties is often experienced as a traumatic event, with at least 30% of carers meeting criteria for post traumatic stress disorder (Barton & Jackson, 2008; Loughland *et al.* 2009). The 'unexpected 'extension' of the parental role is associated with burden of care, feelings of shame, guilt, grief and loss (Addington *et al.* 2005; Sin *et al.* 2007), with families having to cope with diagnostic uncertainty and unclear prognosis (Gleeson *et al.* 1999).

There is a substantial literature on the efficacy of family interventions (FI) in psychosis, largely but not exclusively derived from studies of patients with long established disorders. A Cochrane literature review and various meta-analyses (Pharoah, Mari & Streiner, 2003; Pharaoh *et al.* 2006; Pilling *et al.*, 2002; Pitschel-Walsz *et al.* 2001) have concluded that FI reduces relapse rates (up to 40% compared to control groups) and hospital readmission rates. It appears that families who benefit from EI show improvements in the patient's medication adherence and a reduction in the level of expressed emotion (EE) (Bustillo *et al.* 2001; Dixon *et al.* 2000; Haddock & Lewis, 2005; Pilling *et al.* 2002).

The evidence for efficacy of FI at a first episode is rather less well established (Askey, Gamble & Gray, 2007; Gleeson *et al.* 1999; Pilling *et al.* 2002; Bird *et al.* 2010; Alvarez-Jimenez *et al.* 2009). Studies in FEP populations show that the approach is effective in enhancing knowledge using psycho-educational approaches about the condition but rather more equivocal than in more chronic populations in terms of an impact on relapse and readmission to hospital (Linszen *et al.* 1996). Although a recent meta-analysis of family intervention in early psychosis by Bird *et al.* (2010) concluded that FI including both psycho-education and problem-solving reduced the likelihood of relapse and hospital admission rates combined, it is of note that only three methodologically robust trials (n=288) were included by the authors (Goldstein *et al.* 1978; Leavey *et al.* 2004; Zhang *et al.* 1994) and their method of delivery varied between trials (e.g. individual FI or multi-family intervention). Moreover, iatrogenic harm had been reported in two trials in which families with low EE became worse after the FI intervention (Jeppesen *et al.* 2005; Linszen *et al.* 1996).

However, targeting high EE families is not the straightforward solution as research shows that high EE in families during the first two years of illness is not necessarily a strong predictor or relapse (Bachmann *et al.* 2002; Heikkila *et al.* 2002; Huguelet *et al.* 1995; Patterson, Birchwood & Cochrane, 2000). A hierarchy of needs and interventions offered to families has accordingly been proposed (Mottaghipour & Bickerton, 2005; Pearson *et al.* 2007) with only a minority of families requiring formal family intervention. Additionally, family interventions for first episode psychosis should be guided by a stage model (Addington *et al.* 2005; Gleeson *et al.* 2010; Linszen *et al.* 1996) with a focus on both the impact of the family environment in the course of psychosis and on the impact of psychosis on caregiver wellbeing (Burbach, Fadden & Smith, 2010). Practical and emotional support provided to enable carers' coping ability to manage crisis, facilitate and sustain recovery (Addington *et al.* 2005).

Caregiving process in early psychosis need to be further understood, with caregiver criticism and carers' attributions of blame and responsibility to patients appearing to be constructs requiring further attention in the development of testable hypotheses about mechanisms of change in family interventions (Álvarez-Jiménez *et al.* 2010; Barrowclough & Hooley 2003; Bentsen *et al.* 1998; Kuipers, Onwumere & Bebbington, 2010; Lobban *et al.* 2005).

Cognitive behaviour therapy (CBT)

CBT for psychosis primarily aims to reduce distress associated with psychotic experiences and improve functioning. The intervention focuses on re-evaluating perceptions, beliefs, thinking styles and unhelpful behaviours related to distressing psychotic experiences and emotional problems (Chadwick, Birchwood & Trower, 1996; Fowler, Garety & Kuipers, 1995; Morrison *et al.*, 2004).

The recently updated National Institute for Health and Clinical Excellence (NICE; 2009) clinical guideline for schizophrenia for England and Wales recommends offering CBT to all people with this disorder and FI to all families of people with schizophrenia living with or in close contact with the service user. As is the case with FI, although it well established that CBT is effective in reducing the severity of positive and negative symptoms of psychosis in people with more chronic or treatment resistant presentations (Gould *et al.*, 2001; Pilling *et al.*, 2002; Wykes *et al.*, 2008), the evidence base for CBT in early psychosis is still in its infancy. Overall, the picture emerging is that CBT is effective in ameliorating positive and negative symptoms of psychosis in FEP but not in reducing relapse (Álvarez-Jiménez *et al.*, 2009; Bird *et al.*, 2010; Haddock & Lewis, 2005).

CBT significantly reduces the likelihood of making progression to psychosis in people with ultra-high risk of developing psychosis when compared to monitoring alone (Morrison *et al.* 2002), accelerates remission from acute symptoms in

comparison to routine care and appears to be superior to supportive counseling in improving in auditory hallucinations (SoCRATES trial; Lewis *et al*., 2002;Tarrier *et al.* 2004).

Emotional dysfunction in psychosis (Birchwood, 2003) and more recently the processes of emotional recovery have been highlighted has potential targets for CBT (Gumley & Schwannauer, 2007). Appraisals of loss, entrapment and feelings of shame are common following an episode of psychosis (Birchwood *et al.* 2006; Rooke & Birchwood, 1998). Indeed individuals in the early phase of psychosis report social anxiety (Birchwood *et al.* 2007; Michail & Birchwood, 2009), post-traumatic stress disorder (PTSD) (Jackson *et al.* 2004; Morrison *et al*. 2003), depression and suicidal thinking (Birchwood *et al.* 2000; Iqbal *et al.* 2000; Westemeyer, Harrow & Marengo, 1991). CBT interventions targeting these problems are starting to be investigated in the context of early psychosis, with encouraging results in relation to PTSD (Jackson *et al.* 2009; Mueser & Rosenberg, 2003), reductions of hopelessness, and suicidal ideation (Power *et al.* 2003). Lastly, in line with the current trend for third wave CBT approaches, the potential value of Acceptance Commitment Therapy (ACT) in helping people with early psychosis to connect with their values when making daily life choices and to develop mindfulness and acceptance skills to deal with distressing symptoms of psychosis is currently being investigated (Morris & Oliver, 2009).

An area that requires further attention is substance misuse, particularly of cannabis, as it has been identified as a risk factor for developing psychosis (Arsenault *et al.* 2004; Henquet *et al*., 2005) and an increased likelihood of relapse (Linszen *et al.* 1994). Psychological interventions specifically targeting substance misuse have mainly used motivational intervention (MI) techniques, brief psycho-education and CBT techniques (e.g. setting clearly defined behavioural goals, identifying triggers, challenging cognitions). Although there is little evidence that MI and CBT for people with chronic psychosis and substance misuse reduce relapse of psychotic symptoms (Barrowclough, Haddock, Wykes, *et al*. 2011), there is some evidence of reductions in substance use and improved functioning (Baker *et al.* 2006; Barrowclough, Haddock, Tarrier *et al*. 2001; Barrowclough *et al.* 2011; Drake et al. 2004; Haddock, Barrowclough, Tarrier *et al*. 2003;). In FEP, there is some promising evidence that MI plus CBT might be useful in reducing cannabis use (Edwards *et al.* 2006).

Vocational interventions

When asked, young people experiencing a first episode of psychosis, like their healthy peers say their ambition is to lead an ordinary life in which they have a meaningful job to do, to live in a nice house with a partner and to have a family (Parker, 2001). And yet almost half of those presenting in a first episode will have already dropped out of college or employment (Fisher *et al.* 2008), and as a result will have a much narrower circle of acquaintances, less disposable income and a less structure to their day. Many young people after an onset of psychosis also lose the active support of their family that is so key to finding and holding on to employment. There may even be active discouragement, including from mental health professionals who fear that the stress of work may precipitate a relapse. In practice such fears are largely unfounded. Diagnosis, severity of symptoms, poverty of social skills and even overall disability have repeatedly been shown to have only a modest impact on rates of employment and can be mitigated by appropriate ongoing support (Bond & Drake,2008; Bond *et al*. 2001; Burke-Miller *et al*. 2006; Catty *et al*. 2008; Tsang, Lam, Ng, & Leung, 2000;Wewiorski & Fabian, 2004). Two features of psychosis do, however play a more significant role. First is depression which is associated with poorer quality of life, greater unemployment, suicidality, relapse and rehospitalisation (e.g. Sim *et al*. 2004). Second are cognitive impairments that while they may not affect the chances of job finding, do impair work performance and job retention (Dickerson *et al*. 2008). There have been recent attempts to address the cognitive impairments in FEP through cognitive remediation therapy (CRT) (Wykes *et al.* 2010), with some suggestions that CRT can result in improvements in cognitive flexibility and social functioning, mimicking CRT research with people with longstanding schizophrenia that report benefits in a range of cognitive domains, including problem-solving ability and everyday tasks (McGurk *et al.* 2007; Wykes, 2010).

However the strongest overall predictors of occupational outcome are a good employment history and a current motivation to work (Bond *et al.* 2001; MacDonald-Wilson *et al.* 2001). External influences including the state of the wider economy and so availability of work opportunities, 'benefit traps' whereby a young person is better off financially on a long-term health benefit than he would be in an entry level job and the pervasive problems of stigma also clearly play an important part in limiting employment (Warner, 1994).

The vocational intervention with the strongest evidence base is Individual Placement and Support (IPS). There are now over 16 randomised controlled showing IPS is more effective in terms of employment rate and job retention than traditional approaches based on lengthy pre-vocational training (see Crowther *et al*. 2001; Twamley *et al*. 2003 and Rinaldi *et al*. 2010 for recent reviews). The IPS approach has competitive open employment as the goal, provides rapid job search according to the patient's preference for type of work and provides ongoing support according to the patient's needs. Job finding is direct, immediate and individualised, with no pre vocational screening to determine 'work readiness' and does not exclude people because of diagnosis or a history of substance abuse. IPS appears to be equally effective following a first episode of psychosis . For example, Killacky *et al.* (2008) randomised 41 people with a FEP to either IPS or a

treatment as usual condition (comprising employment advice including giving the address of a local employment agency) and found the intervention group to have significantly better outcomes in terms of obtaining open (i.e. competitive) employment, working more weeks over the 6 month follow up period and earned more money than did participants in the TAU condition.

Conclusions and future challenges

Early Intervention services have been developed worldwide. Many, such as the models in Australia, the UK, Canada and Denmark reviewed by Harris *et al.* (2009), offer evidence based interventions and have developed their services on the basis of effectiveness research. Nevertheless there are still challenges to be addressed.

Are we delivering early intervention to the right people?

There is a tension between delivering unnecessary treatments or even possibly causing iatrogenic harm by offering interventions to people who do not need them (e.g. false positives when preventing transition to psychosis; FI with families with low EE) and not reaching out to people who have a need for a psychosocial approach. In a paper presented in the Third International Early Psychosis Conference in Copenhagen in 2005, Richard Warner challenged the evidence for the association between reductions in DUP and improved outcomes and instead argued that that these apparent gains ought to be interpreted as possibly resulting from selection bias, whereby samples with shorter DUP identified by early detection programs were more likely to be characterized by people with benign forms of illness, who might have recovered naturally from their psychotic symptoms (25-50% according to the World Health Organization, 1975).

On the other hand, Green *et al.* (2011) recently called for a more assertive approach to assessing people who are at risk of developing psychosis after finding that 70% of 430 people referred to an 'at risk service' who did not engage went on to present to mental health services during the follow up period of up to 7 years, a quarter of whom developed psychosis.

Sustaining gains in the long term

Two recent studies suggest that the early advantages of EI services may not be sustained in the longer term (Bertelsen *et al.* 2008; Gafoor *et al.* 2010). However in both studies the EI service was only provided for the first 2 years following onset, after which future care was transferred to generic mental health services. It remains an open question therefore, how long intensive early intervention should be provided for and whether all clients should be provided the same fixed input (Harris *et al.* 2009; Singh, 2010). In particular, the length to which clients who have achieved full recovery should be followed up.

However, as there is yet no clear evidence to the optimal duration of treatment it is not possible to develop best practice protocols that could be instrumental in negotiating funding to extend early psychosis care beyond the 'critical period' (Harris *et al.* 2009)

Further long term prospective research is needed to investigate the pathways post discharge from EI services.

Understanding the mechanisms of effectiveness

Sustaining gains achieved by early intervention requires the identification of active ingredients that can be successfully extended to continuing care (Singh, 2010). Hypothesised mediating factors in the biological (e.g. medication adherence, cannabis use), psychological (hope, positive sense of self), cognitive (e.g. problem solving, flexibility) and social (meaningful vocational and affiliative roles, low EE and family warm) domains could be investigated.

Adherence and competency in the delivery of psychosocial interventions are also crucial if we are to develop and understand how effective treatments work. Challenges for implementation such interventions (e.g. family intervention) include the need for managers to understand the current evidence base to provide managerial and professional support; commission training and support ongoing supervision, develop expertise within early intervention services (Smith & Velleman, 2002).

Funding by national health services: the economic argument

The current economic climate, with predicted cuts in funding to the national health services is likely to result in tensions between meeting funding linked targets (e.g. caseload) and maintaining adherence to EI principles, resulting in challenges to the sustainability of a quality service (Lester *et al.*, 2009). This can only but revive the longstanding debate about the potentially wasteful allocation of scarce public resources to early intervention in psychosis (Bosanac, Patton & Castle, 2009; Pelosi & Birchwood, 2009; Singh, 2010). It is therefore encouraging that newly published research has shown that EI is cost-effective in the short term (McCrone, Craig, Power & Garety, 2010; Valmaggia *et al.* 2009).

The increased community care costs of EI services are offset by the reduction in inpatient cost and in some cases results in cost savings (Dodgson *et al.* 2008; Goldberg *et al.* 2006; McCrone *et al.* 2010; Mihalopoulos , McGorry & Carter, 1999) with the data suggesting that cost savings might be more ap-

parent in the longer term (Phillips *et al.* 2009), particularly in the case of EI intervention for people with an at risk mental state (Valmaggia *et al.* 2009) and when vocational functioning and quality of life outcomes are taken into account (Graig *et al.* 2004; Garety *et al.* 2006; McCrone *et al.* 2010).

Further economic research on EI should include cost-utility analyses (Huda, 2010; McCrone *et al.* 2010). In England, the National Institute of Clinical Excellence (NICE, 2008) recommends the use of quality-of life adjusted years (QALYS) and there is ongoing research evaluating if measures used to calculate QALYS (e.g. EQ-5D) are sensitive enough to capture change in mental wellbeing in people with psychosis (Barton *et al.* 2009; Knapp *et al.* 2008).

Defining recovery, challenging stigma

Communicating hope and countering pessimistic views of the outcome of psychosis is essential. It is a truism that has emerged most powerfully in the 'recovery' paradigm, championed by service users many of whom had suffered for many years before finding new purpose and meaning in life. For them, recovery is not a narrow medical construct defined in terms of reductions in symptoms but rather one of having regained one's life through work, in personal relationships or even through political action or advocacy on behalf of others. Linked to this is a growing interest in becoming more involved in decision making and contributing to defining the outcomes and measures of these for future research.

EI services on the whole embrace this philosophy, involving young people and their families as active participants on steering groups, as peer support workers, advocates and as part of wider educational programmes outreaching to schools and colleges.

To conclude, the gold standard EI service delivers evidence-based interventions in a service structure aimed at timely and sustained delivery across onset and during initial recovery in order to minimise relapse, wrapping the whole in a recovery-orientated, hopeful and collaborative approach.

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