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**Psychosocial Interventions for people with a First Episode Psychosis:
between tradition and innovation**

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Abstract

Purpose of review

Assessing recent evidence on psychosocial interventions for people with first episode psychosis (FEP).

Recent Findings

Family interventions (FI) reduce relapse rates, whilst cognitive behavioural therapy (CBT) shows a moderate effect in improving positive psychotic symptoms. Vocational interventions (VI) appear to be worthy of implementation within early intervention for psychosis (EIP) teams, but it is still unclear what is the most cost-effective strategy for their delivery. Promising interventions, which need more careful evaluation, focus on substance misuse, physical health comorbidities, improvement of social participation, peer support and the potential of new technologies.

Summary

The first five years after the onset of psychotic symptoms are a “critical period” in which psychosocial interventions can be particularly influential in determining prognosis. Traditional EIP interventions have different effectiveness profiles, i.e. FI reduce relapse rates, CBT has a moderate effectiveness on overall and positive symptoms and VI can improve educational and employment-related functioning. Newer interventions show promise on important targets for FEP treatment but require higher-quality evaluations. Decisions on which interventions to implement within EIP teams should be informed by high-quality evidence, but difficult choices will have to be made based on costs, professionals and technologies available, and local priorities.

Keywords: Psychosocial interventions; early intervention services; first episode psychosis.

1. Introduction

The initial five years after the onset of a psychotic disorder have been identified as a 'critical period' (1), during which most of the clinical and psychosocial deterioration occurs (2, 3). Providing appropriate treatment during this critical period is more likely to achieve good outcomes, both in terms of symptoms and of prevention or reduction of disability (4, 5). In the last two decades, Early Intervention in Psychosis (EIP) teams have been established across several countries, supported by robust evidence of their clinical and cost effectiveness (6).

Established interventions provided by EIP teams include family interventions, psychoeducation, cognitive-behavioural therapy, and vocational interventions (7). This review summarises recent evidence for these 'traditional' EIP interventions along with emerging evidence on other psychosocial interventions, which might in the future become part of routine EIP care provision.

2. Established EIP interventions

Assessing individual evidence for established psychosocial interventions for the treatment of FEP has become increasingly difficult, because these interventions are routinely provided all together as part of EIP usual care. In general, and unsurprisingly, the positive effects of individual interventions, when tested in isolation, are attenuated. However, it is interesting to note that the different interventions show a distinct profile of effectiveness on specific outcomes.

2.1 Family interventions

Family interventions (FI) within EIP teams are usually based on the behavioural family therapy (BFT) model, including psychoeducation, communication skills and problem-solving modules (8). The effectiveness of FI in reducing relapse and hospitalisation rates has been supported by systematic reviews (9). This is likely mediated, at least in part, by improvement in medication adherence and engagement with services (10).

However, it was found that, to reduce relapse, FI need to have relapse reduction as an explicit objective (11).

Recent studies have tested different models of provision of FI. No differences were identified between FI including different patients and families (multifamily interventions) and FI focused on individual families (single-family interventions) (12). Interventions which only involve family members and/or significant others (also named carers), and not the patients, have shown benefits in terms of reducing carers' burden (13). In general, the role of family involvement in treatment appears to be key in improving outcomes of FEP. Notably, in cultures and countries where family involvement in treatment is more regular, more positive treatment outcomes were found and a dose-response effect between family involvement and positive outcomes was proposed (14).

2.2 Cognitive-behavioural therapy (CBT)

Several studies have shown efficacy of CBT compared with treatment as usual in reducing symptoms of FEP patients (9, 15), but not in reducing relapse (15). The effect size of symptom improvement is moderate (9, 15) for overall and positive symptoms, and low to uncertain for negative symptoms (9, 16, 17).

The heterogeneity in studies testing CBT in people with FEP was identified as high (16, 18) which might underlie a different response to CBT of different patients (19). A recent review shed some light on this, identifying that 44.5% of the patients reach a 20% (minimally improved) and 13.2% reach a 50% (much improved) reduction of overall symptoms (18).

More recent research has tested the effect of CBT as an alternative treatment to antipsychotic medications. A triple-blind non-inferiority RCT found that intensive psychosocial intervention (cognitive-behavioural case management) without antipsychotic treatment was not inferior to the combination of antipsychotic medication

and CBT-based case management over six months (20). However, for safety reasons, participants were selected as those having low levels of suicidality and aggression, a duration of untreated psychosis (DUP) of less than 6 months, and living in stable accommodation with social support, hence the results cannot be necessarily generalised to many FEP patients (20). A similar study was carried out with adolescents with FEP, identifying a satisfactory safety of the three treatment strategies (21). The feasibility of a larger trial was, however, deemed to be unclear due to recruitment challenges.

Hence, robust evidence as to whether CBT can be used as an alternative rather than in combination with pharmacological treatment is still lacking.

2.3 Vocational Interventions

FEP is often associated with decline in education and poor employment outcomes (22, 23). Research studies reported that a high proportion of young patients with FEP want to work, but fail to gain employment (22). In this context, vocational interventions have been widely advocated to be part of EIP treatment packages (23, 24).

Several RCTs and systematic reviews have consistently established the efficacy of vocational rehabilitation programmes in improving vocational outcomes in patients with psychosis (25-29). In patients with FEP, the evidence is still limited and preliminary, although currently suggesting a good success rate for vocational interventions, in terms of both education and employment (between 29% and 83%) (22). The Individual Placement of Support (IPS) model has been indicated as a particularly promising model for people with FEP. IPS has competitive employment as its goal, and encompasses rapid job search, integration of rehabilitation and mental health, attention to consumer preferences, continuous and comprehensive assessment, and time-unlimited support (25). The promising results of IPS in small scale studies (30) have been only partially confirmed by the largest and most recent

trial (31). In this trial the IPS group achieved a very high employment rate during the six months of the intervention but the advantage of IPS over usual treatment was not maintained in the long term (at 12 and 18 months).

On balance, the evidence points towards an important role of vocational interventions within EIP. However, further research should comprehensively identify the vocational needs of young people with FEP, the important predictors and indicators of vocational success and the cost-benefit profile of IPS over less group-targeted and intensive vocational interventions.

2.4 Interventions for people at risk of psychosis

EIP treatment programmes traditionally include offering treatment, which is frequently of a psychosocial nature, to people who are deemed to be at high risk of psychosis (96). The identification of eligible people is based on family history and on the presence of brief or attenuated psychotic symptoms and social dysfunction, but the specific criteria vary among services on an international level (32-34).

Davies et. al, in large network meta-analyses of RCTs of pharmacological and/or non-pharmacological interventions for CHR-P individuals, reported no superiority of any particular intervention on outcomes such as rates of transition to psychosis, acceptability (35) or attenuated positive psychotic symptoms (96). There are still questions on the effectiveness of CBT which is probably the intervention most often provided to people deemed to be at high risk of psychosis (36). Large trials have failed to show significant effects in reducing transition (35, 37, 38) and the methodological rigour of some of the more recent trials in this area, which showed promising effects, has been thoroughly questioned (39).

In summary, whilst it is possible that some interventions could prevent development of psychosis in people at-risk, the evidence is still unclear in that regard, and there is no specific support for the use of any particular psychosocial (or pharmacological)

intervention. Some scepticism has developed in the scientific community about whether providing interventions for people at risk of psychosis should be the preferred strategy or we should rather focus on reducing substance use or other risk factors in the general population (40). A better understanding of the characteristics of people who actually are at risk of psychosis and of key predictors of transition seems to be required in order to identify and test potentially helpful interventions (41).

3. Interventions with emerging evidence and novel interventions

3.1 Interventions to reduce substance misuse

Substance misuse is common among patients with FEP (42, 43) and a negative prognostic factor for engagement and for the long-term outcome of psychosis (44, 45). And yet, only few studies have evaluated the effectiveness of psychosocial interventions in reducing substance misuse in people with FEP. The Danish OPUS trial, which tested a comprehensive EIP treatment package without specific interventions for substance misuse, reported a reduction in substance misuse in the experimental group (46). Specialised psychosocial interventions to reduce substance misuse within EIP services have been based on a mix of motivational interviewing and CBT principles and techniques and focused particularly on cannabis misuse. However, all the RCTs carried out so far reported a lack of effectiveness of specialised interventions for substance misuse (47-49). The NAVIGATE programme, which integrated a substance misuse treatment component with EIP regular provision of care did not find that the experimental programme of treatment was superior to standard care in reducing substance abuse (50). A low take-up (<25%) of interventions to reduce substance misuse, as found in this trial, may be one of the causes for the lack of success of these interventions so far (50).

3.2 Interventions to reduce physical health comorbidities and lifestyle interventions

People with psychotic disorders have a 15- to 20-year shorter life expectancy (51) due to physical health comorbidities, particularly cardiovascular disease (CVD) (52). The reasons for this are multifactorial. People with psychotic disorders have poor physical activity levels (53) (54), increased prevalence of tobacco use (55), limited access to physical health monitoring, care and intervention (56, 57). This is in addition to the adverse cardiometabolic side effects of antipsychotics (58).

In a recent large meta-review of meta-analyses (27 meta-analyses, representing 128 trials; N=47,231), individual lifestyle counselling showed large effect on reducing body weight; dietary interventions reported medium effect on body weight, small effect on diastolic blood pressure and glycaemic indices; exercise had large effect on reducing body weight and functional exercise capacity; individualized lifestyle interventions were superior to group-based approaches; and CBT focused on weight loss and psychoeducation only had small-to-medium effects on weight reduction (59). A more recent systematic review and meta-analysis (60) of RCTs testing interventions to improve diet and physical activity in people with non-affective psychosis, including first-episode psychosis, identified fifty-nine studies. A larger improvement in physical health parameters was found for interventions including active exercise, especially moderate/vigorous aerobic exercise, but engagement over time was greater for interventions which privileged a psychotherapeutic component.

In summary, whilst the data on psychosocial intervention to promote physical health in people with FEP is not yet adequate to suggest any far-reaching changes to clinical guidelines and procedures, it provides important directions. Strategies to increase physical exercise and dietary interventions are promising and they should be informed by psychotherapeutic principles to foster engagement of patients with FEP.

3.3 Interventions to increase social integration and functioning

People with FEP show poor social functioning and are particularly vulnerable to social isolation (61, 62). Evidence from systematic reviews and meta-analyses have reported a significant positive correlation of social isolation with both severity of psychotic symptoms and treatment outcomes (63, 64).

Social skills training (SST) was part of the EIP treatment programme in the OPUS study (50). Whilst it could be reasonably expected that SST contributed to the effectiveness of the treatment programme in improving global functioning, it is uncertain what the specific added value of social skills training was (50). Other trials of SST have focused on the larger population of all people with psychotic disorders (65-67). A recent review found positive effects of SST on positive and negative symptoms, but was inconclusive on the effect of SST on “social performance/competence” (68).

Addressing cognitive impairments through cognitive training and remediation is seen as a promising avenue to increase social functioning, although so far trials have identified stronger effects in improving measures of cognitive functioning rather than real-life social participation (17, 68, 69).

A more recent development is social recovery therapy, which in a single RCT in EIP services was found to be useful in improving the extent to which people with FEP engaged in social activities (70).

Further areas for development in this area include: a) strategies to ensure that social isolation is consistently assessed in EIP services, as this has been identified as a practice gap (63); b) the development of interventions to increase not only social activities, but also social contacts and networks to achieve a more profound effect on reducing loneliness and improving social participation and functioning.

3.4 Peer support programmes

Peer support harnesses the experiential knowledge of service users and carers to enable emotional and practical support (71). There is a high interest in integrating peer support programmes in EIP services, both for service users and their family members (72-74). Recent meta-analyses of peer support (one-to-one) intervention for individuals using mental health services found evidence of improvement in self-recovery and empowerment perceptions, but not in standard clinical outcomes (75, 76). The evidence on clinical outcomes is, however, still scarce and mostly includes low-quality studies (75, 76). On the other hand, people with FEP appear to highly value peer support programmes (77) and there are questions as to whether standard RCTs are the most indicated methods to capture the benefits of peer support (71).

3.5 Digital and technology-based interventions

Major advances in digital and technology-based interventions offer opportunities to enhance engagement of service users with EIP services and to provide innovative and attractive interventions (78, 79). In particular, the rates of use of online social media of people with psychosis for social participation is high and similar to general population use (80, 81), which is promising, as usually people with psychosis tend to experience higher level of difficulties in 'offline' social interactions (61, 62).

Mobile-based interventions, either as a combination of mobile app and face-to-face components or traditional face-to-face therapy facilitated through mobile apps are increasingly being developed.

Studies on mobile-based interventions for FEP have mainly been small scale pilot trials so far, but have consistently shown feasibility, acceptability and beneficial effects in terms of symptoms and social connectedness in people with FEP (82-84) and in people deemed to be at risk of psychosis (85).

A particularly interesting development are Virtual-Reality based therapies and among them, the "Avatar therapy". These therapies focus on helping people to manage

distressing persecutory delusions and hallucinations. The preliminary evidence is promising but still mixed with regard to effectiveness, and biases of available studies were identified (86, 87).

In summary, so far there is encouraging evidence on acceptability, feasibility and promise of digital and technology-based interventions for people with FEP. However, validation of clinical effectiveness and of other benefits in larger-scale studies is required.

4. Discussion

Different psychosocial interventions have an established or emerging evidence of benefit for people with FEP. Decisions on which interventions to include within the EIP treatment packages will need to be informed not only by the available evidence, but also consider available funding and professional expertise, as well as contextual variables, i.e. local users' preferences and priorities and geographical areas. Mobile-based interventions, for example, might be particularly helpful in areas where geographical distance from EIP facilities are higher (88).

When considering the available evidence, one needs to be aware that EIP teams offer clusters of interventions rather than isolated individual psychosocial interventions (89).

This is positive and beneficial as different interventions might augment the effect of each other. However, it makes it difficult to evaluate the contribution to clinical benefits of individual interventions and orient decisions as to whether interventions should be retained or replaced with other interventions. Indeed, some of the heterogeneity found in meta-analyses may result from differences in the overall care packages offered (34,44). Factorial trial designs might offer a way into understanding the complex interactions of different interventions (90). Implementation studies will allow a better understanding of whether and how are the different psychosocial interventions put into practice, which is known to be highly variable (7).

Another problem with evaluating effectiveness of psychosocial interventions is that engagement with care of people with FEP is a major challenge (70, 91). Some potentially effective interventions may simply have to improve in the acceptability and engagement strategies to fully display their clinical benefit. Strategies to foster engagement should consider in particular groups at risk of disengagement such as people from minority ethnic groups, migrants, people with low educational and socio-demographic background and people who use substances (92).

The prevention “function” of EIP services is a particularly fascinating, yet controversial one. There is currently a debate as to whether prevention should focus on risk factors in the general population (40) or focus, as EIP services are currently doing, on people who are deemed to be at high risk of developing a psychotic disorder (36). Given the high personal and societal cost of psychotic disorders (93), it is hard to argue against either strategy. The value of prevention strategies within EIP teams is, however, likely to be increased by more conceptually refined and consistent target at-risk groups and more tailored interventions (41).

Key Points

- Psychosocial interventions for people with first episode psychosis (FEP) are usually provided in the context of early intervention for psychosis (EIP) teams
- 'Traditional' and established interventions can have benefits on different outcomes, i.e. family interventions reduce relapses, and cognitive behavioural therapy has shown a moderate effect size towards improvement of some psychotic symptoms.
- Vocational interventions can be effective, although the best and most cost-effective way to deliver these interventions is still unclear.
- A number of innovative interventions focusing on substance use, physical health comorbidities, social functioning and participation, peer support and on the possibilities offered by new technologies are currently being tested for wider use.

- Decisions on which interventions to implement within EIP care packages will need to be informed by evidence, but give also consideration to costs, professionals and technologies available, and to setting-specific variables.

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Conflicts of Interest

The authors declare that they have no conflict of interest in relation to this paper.

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