Scalable mental health interventions to support adolescents not in receipt of services

A NARRATIVE REVIEW ON BEHALF OF
THE CHILDHOOD DEVELOPMENT INITIATIVE

GILLIAN WALSH, 2020

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Responding to Needs, Driving Change
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Executive Summary

Adolescents are a particularly vulnerable group with mental health needs that often go untreated. In the Tallaght region a cohort of up to 1500 12-18 year olds has been identified with unmet mental health needs. In many cases this unmet need is due to insufficient capacity within services. In some cases, it is due to youths not meeting access criteria or having more than one modality of mental health need and therefore an unclear referral path. The purpose of this review is to identify potential scalable solutions to support this cohort while not in receipt of services and to provide a high-level comparison of solutions.

A selective narrative review methodology was applied. A total of 30 papers were included in the final review describing the following 5 delivery mechanisms: 1) Digitally delivered therapy, 2) Telephone helpline counselling, 3) Parent training to support youth, 4) Brief interventions through youth-focused service hubs, 5) Teen-focused secondary school interventions.

Exemplar programmes within each delivery mechanism category identified include Australia's *BRAVE online* youth-focused, therapist-assisted CBT programme, Canada's professionally delivered, youth-focused 24/7 telecounselling and webchat service *'Kids Help Phone'*, Ireland's *Parent Plus* adolescent training programme for parents including the complementary Working Things Out programme for teens, *Jigsaw's goals-orientated, Brief Intervention programme* and *FRIENDS for life youth*, a school-based CBT programme for adolescents and their parents, developed in Australia.

While all interventions identified are youth focused and can be offered at scale, each have different strengths and limitations. Extension of Jigsaw's brief intervention services may present the most general and holistic solution, addressing the broadest range of adolescent problems. Parents Plus Adolescent represents the intervention with the largest emphasis on modifying parental behaviours and associated family environment. A telecounselling and webchat service arguably presents the least barriers to entry from the youth's perspective. With respect to efficacy, Parents Plus Adolescent and FRIENDS for life Youth have the most robust evidence of effectiveness and Parents Plus Adolescent and BRAVE Online appear to work out as the least costly.

This review provides an overview and comparison of the different delivery mechanism options that currently exist for the delivery of general, scalable, youth-focused psychological support to adolescents. The information presented in this review, along with consideration of key characteristics of the target group (e.g. nature and prevalences of adolescent problems and disorders, extent of contributing family factors) and available funding and resources represents a sound basis for the selection of an intervention for adolescents in Tallaght who are struggling with mental health or emotional and behavioural issues and not in receipt of services.

Introduction

Despite progress in the development of evidence-based interventions for youth mental health, international evidence suggests that up to 75% of youths with mental health needs never receive services[1]. Ireland's Children's Mental Health Coalition published a review in 2014[2], which identified that shortages in Child and Adolescent Mental Health Services (CAMHS) resourcing that existed in 2006's Vision for Change policy review[3] persisted in 2014. Even with the welcome establishment of Jigsaw's youth-focused, integrated mental health hubs, the treatment gap persists. A recent study[4] conducted by Trinity College Dublin(TCD) on behalf of the Childhood Development Initiative(CDI) has identified a cohort of up to 1500 12-18 year olds with unmet mental health needs in the Tallaght region.

In many cases this unmet need is due to insufficient capacity within services4. In some it is due to youths not meeting access criteria or having more than one modality of mental health need and therefore an unclear referral path[4].

A general, scalable intervention which is available on an ongoing basis is needed for all youths who cannot access services to help them to manage symptoms and where possible to prevent symptoms from worsening until such time as they are taken into services or recover. The purpose of this review is to inform the selection of such an intervention in the Tallaght region.

Specifically the aim of this narrative review is to identify and compare potential interventions to manage or alleviate moderate symptoms of mental health disorder and/or behavioural and emotional disorder including internalising and externalising behaviours in 12-18 year olds while they are waiting to be assigned to an appropriate treatment service or who do not meet the criteria for access to services. In differentiating between interventions the emphasis is on differences in delivery mechanism.

Ideally interventions should be of a nature that can be made available on a continuous basis until the young person is in appropriate care (greater than 8 weeks if necessary) or no longer requires treatment. Interventions should be scalable to accommodate the approximately 1500 young people in need.

Method

A selective narrative review methodology was applied. In this method a selective sample of papers was gathered using a systematic approach to answer the research question in a way that provides an overview of the current intervention options as well as a detailed look at relevant examples. It was necessarily deductive. The main component of the review is to identify and describe potentially suitable interventions.

A secondary component of the review is to provide a high-level comparison of interventions identified in terms of suitability and feasibility. The following evaluation criteria will be considered:

1) **Evidence:** to what degree has the intervention been shown to have a positive, causal impact on relevant outcomes? Early Intervention Foundation (EIF) evidence standards rating[5] will be included where available. Where an official EIF rating is not available, an approximate rating will be conducted according to the EIF evidence standards rating system.
2) **Cost:** what are the estimated direct costs of setting up the intervention and what are the estimated direct costs of running the intervention for the number of young people in need? EIF cost rating[6] will be provided where available. Where unavailable an estimated direct cost based on resources required will be calculated if feasible.
3) **Irish setting:** has the intervention been made available elsewhere in Ireland?

Definitions

For the purposes of this review the following definitions will apply.

An Intervention is defined as any facility, service or activity which aims to manage or alleviate moderate mental health disorder and/or behavioural and emotional disorder in 12-18 year olds.

Moderate mental health disorder is defined as the presence of abnormalities of behaviour, emotions or relationships of sufficient severity to require professional intervention which may not be a psychiatrist and includes anxiety, depression, conduct disorder and emotional and behavioural disorder.

Externalising behaviours are defined as maladaptive, disruptive behaviors directed toward an individual's environment, which cause impairment or interference in life functioning and can include aggressiveness, verbal abuse and threats of violence.

Internalising behaviours are defined as maladaptive ways in which individuals keep their problems to themselves, internalising them and can include withdrawal, isolation, school refusal and loneliness.

Search strategy

The following two sources of material were investigated.

1. Peer-reviewed publications, published in English from MEDLINE, Embase, Psychinfo, Cinahl, ProQuest, Sociological abstracts, Family and Society Plus, Meditext, and all Evidence Based Medicine (EBM) Reviews. Dublin City University Library was used to search multiple databases simultaneously with the exception of The Campbell Collaboration and the Cochrane library, which were searched directly. Journals were searched from earliest issues available on DCU database (usually first issues) to January 2020.
2. Independent evaluations published by relevant organisations working in Ireland and other high-income countries in the field of youth mental health. The list of relevant organisations was gathered through the CDI Advisory Group.

The following list of inclusion and exclusion criteria were applied.

Inclusion criteria

- Interventions aimed at treating youth mental health
- Interventions aimed at treating youth emotional and behavioural problems
- Interventions aimed at treating youth anxiety and/or depression
- Interventions aimed at 12-18 year olds
- Interventions designed for youths who do not meet the criteria for CAHMS or other services
- Interventions designed to support youths waiting to access CAHMS or other services

Exclusion criteria

- Interventions aimed at promoting better mental health of young people
- Interventions aimed at preventing the development of ill mental health
- Interventions aimed at improving existing services
- Interventions aimed at improving referral pathways
- Interventions aimed at improving communication on service options
- Large scale models of mental health service delivery
- Interventions targeting under 12s or over 18s
- Interventions developed for low- and middle-income countries
- Interventions specifically targeting youth mental health related problems other than anxiety and depression e.g. eating disorders, substance abuse, Autism Spectrum Disorder

Searching and shortlisting

A preliminary search of the literature using the following terms to describe our cohort: *waiting on services, interim solution, treatment gap, waiting lists, does not meet criteria for CAHMS, do not qualify for CAHMS,* in different combinations of the following terms: *youth, adolescent,12-18 years, intervention, mental health, emotional problems/disorders, behavioural problems disorders*, yielded only one study which was explicitly concerned with adolescents with mental health needs on waiting lists and yielded no studies which explicitly aimed to treat adolescents who did not meet entrance criteria for CAHMS. From this preliminary search, focusing the review on our specific cohort of interest was not be helpful.

Merely searching for interventions for adolescent mental health and emotional and behavioural problems using the following terms: *adolescent, youth, mental health, treatment intervention, alleviate symptoms, manage symptoms, emotional, behavioural problems, issues, evaluation, alleviate, manage, psychological distress*. This yielded a large number of results (>100,000). Results were sorted by relevance and a read of titles was conducted.

From title reads, excluding evaluation studies which focus on evaluating clinical psychotherapies based on their theoretical underpinnings e.g. cognitive, non-cognitive and focusing rather on delivery mechanisms e.g. parent training, digital therapy, 93 papers were identified. Many more studies than this existed but once the same delivery mechanism appeared several times and no new delivery mechanisms were appearing in the search results, the search was stopped. At this stage results were grouped into categories as follows:

Table 1: First grouping of search results

	Category
1	Face to face therapy
2	Recreational therapies e.g. art, music, sport
3	Digital, telehealth, self-administered therapy
4	Family therapy
5	Parent training to support youth
6	Group therapy
7	Rapid-access, youth-focused, service hubs
8	School based interventions
9	Single session interventions
10	Community interventions

Following a reading of abstracts and consultation with the second reader, categories 1: Face to face therapy, 2: Recreational therapy, 6: Group therapy and 10: Community interventions were removed. The reason categories 1: face to face therapy and 6: group therapy were removed is because the categories are too broad and do not provide sufficient value in terms of describing a useful, scalable delivery mechanism for this cohort. The reason category 2: recreational therapies was removed is because these interventions represented types of psychotherapy as opposed to types of delivery mechanism. The reason category 10: community interventions was removed is because all of the community interventions identified could be reorganised into one of the other categories e.g. recreational therapies or school-based interventions. Category 3: digital, telehealth, self-administered therapy was split out into two categories as follows: digitally delivered therapy and telephone helpline counselling. Self-administered therapy is explored as part of the digitally delivered therapy category. This left us with the following seven delivery mechanism categories and 62 papers.

Table 2: Delivery mechanism categories after shortlisting based on abstract read

	Delivery Mechanism
1	Digitally delivered therapy
2	Telephone helpline counselling
3	Family therapy
4	Parent training to support youth
5	Teen focused, secondary school interventions
6	Rapid-access, youth-focused, service hubs
7	Single session interventions

Following a full read of papers category 3: Family therapy and category 7: Single session interventions(SSIs) were removed. Category 3: Family therapy was removed because this intervention type represents an intensive, resource heavy solution where specialist family therapists conduct a number of group and individual sessions with multiple family members. These types of solutions, while effective[7] are not considered easily scalable. SSIs aim to provide the most effective 'dose' of therapy/treatment possible in a single session by focusing in on the specific concern, teaching growth mindset and self-management techniques, reducing demand for costly lengthier treatment programmes and recognising that many youths drop out after only a few sessions[8]. Category 7: SSIs was removed as the nature of this type of intervention cannot provide continuous support to the young person. This left us with the following five delivery mechanisms and 52 papers.

Table 3: Delivery mechanism categories after shortlisting based on full paper read

	Delivery Mechanism
1	Digitally delivered therapy
2	Telephone helpline counselling
3	Parent training to support youth
4	Teen focused, secondary school interventions
5	Brief interventions through youth-focused, service hubs

In order to further focus and structure the review, it was decided to include only the most recent, high quality reviews (systematic review, where available) for each delivery mechanism and one key paper describing an example intervention for that delivery mechanism, e.g. for the 'Parent training to support youths' category the example intervention Parents Plus was included. To ensure all relevant review papers were included, a second selective search of the literature was conducted at this point using variations of the delivery mechanism category with the terms *review, systematic review, meta-analysis, descriptive review, narrative review*. Example interventions were selected for inclusion if they were shown in the systematic review to be superior to others within the category or if they had been applied in an Irish setting in cases where no 'best in class' intervention had been identified. If more than one recent, high quality review was found for a delivery mechanism, all were included. This yielded 30 papers for the final selection. A detailed review was conducted of the final selection. The final selection represents the studies with the best contribution relative to the research question. The papers in the final selection are summarised in two tables in the appendices of this report.

Analysis

In the analysis of papers selected for the final review the following information was extracted for each delivery mechanism: overview including key characteristics, data on effectiveness, strengths, weaknesses and a description of the chosen example intervention.

Limitations

- This review does not include a critical appraisal of papers included.
- This review does not include a review of all possible individual interventions. However, all relevant delivery mechanisms are captured to the best of our knowledge.
- Some specific aspects of interest where not easily searchable e.g. youths who do not qualify for CAHMS. Perhaps this cohort is targeted in the literature but described in varying language. Currently there do not appear to be any standard definitions, naming conventions or profile description of this cohort.

Discussion

This review sought to identify general, scalable interventions which could be offered to adolescents in Tallaght who are struggling with mental health or emotional and behavioural issues and not in receipt of services. The different types of delivery mechanisms identified are digitally delivered therapy, telephone helpline counselling, parent training to support youth, teen-focused secondary school interventions and brief interventions through youth-focused service hubs. All interventions identified are youth-focused, accessible and scalable. They vary in the outcomes they target with some targeting more than one outcome. They vary in the resources required to implement and in the extent to which they target modifiable family factors. A high-level comparison of interventions is included in the following discussion.

Digitally delivered therapy

Overview

Digitally delivered therapy or digital health interventions (DHIs) including computer assisted therapy, smartphone apps and wearable technologies are becoming more and more widely used, particularly to treat youths[9]. Results from a number of recent reviews[9-13] indicate there is evidence to support the clinical benefit of DHIs particularly computerised cognitive behavioural therapy (cCBT) for depression and anxiety in adolescents with effect size largest for anxiety (consistent with non- digital CBT[14]). cCBT mimics face to face CBT and provides discrete modules that users complete sequentially over time. Some interventions have shown comparable results between therapist-led (remote) CBT and face to face CBT. Evidence is less strong for DHIs effectiveness in treating ADHD, autism, psychosis and eating disorders. Effect sizes are larger for therapist-guided support versus self-guided intervention. National Institute for Health and Clinical Excellence (NICE) currently recommend the use of cCBT for anxiety and depression as part of a stepped-care approach[15 16]. Adolescents themselves have qualitatively reported that cCBT gives them control over their treatment but whether they are more likely to access DHIs than face to face therapy is not clear. Similarly, the cost-effectiveness of DHI's remains to be proven in the literature.

Strengths

- cCBT has been proven to be effective for the treatment of anxiety and depression in adolescents
- It can be accessed 24/7 so can potentially offer some support at the exact time of need
- It is assumed to be more scalable than conventional methods
- It avoids stigma associated with physical trips to mental health clinics

Weaknesses

- DHIs are collectively less effective than face to face therapies although some interventions show comparable results between therapist led (remote) CBT and face to face CBT
- Absence of physical cues and body language in face to face therapy
- Not effective for autism, ADHD, eating disorders or psychosis
- While efficacy is proven for mild to moderate symptoms, the evidence is unclear for youths who present with more severe symptomology
- No evidence yet that it yields improved uptake
- No evidence yet of superior cost-effectiveness and scalability over other delivery mechanisms

Example Digitally delivered therapy – Teen Strong Australia

Australia's BRAVE-Online program emerges as the best in class DHI[11 13]. It is a youth-focused, therapist-assisted, online CBT program and has shown results comparable to face to face therapy. However, it targets anxiety only and it is not currently available outside of Australia.

An Irish example of cCBT is a program developed by the HSE called MINDWISE[17]. The program is geared towards adults and its first RCT showed mixed results concluding that further development is needed. A youth-focused, Irish version of cCBT is the Pesky Gnats computer game application developed in UCD[18], it is designed more as a tool to support face to face therapy than a stand-alone treatment. According to Jigsaw's 2018 evaluation report, Primary Care Psychology are planning the roll-out of both Mindwise and Pesky Gnats through newly appointed assistant psychologists to meet low level mental health need and support anyone waiting on an appointment[19]. Jigsaw is also in the process of developing its own online resources and supports.

There are a number of other good candidates, e.g. Project Catch-IT[20] in the US, but they do not appear to be currently available outside their home country. Australia's Teen Strong[21] is a cCBT program available internationally with prescription from a GP and parental or guardian supervision. It has not yet been independently evaluated but it is part of a suite of other cCBT programmes which have been well researched[22-25] and shown to be effective. It is designed for 12-17year olds with clinical and non-clinical levels of anxiety and depression or non-clinical emotional issues. The program is self-paced, but is designed to be completed within 90 days, at most. There are 6 lessons altogether and it is best to complete one lesson every week. The course includes modules for both the parent and their teen. The parent element is only psychoeducational with parallel lessons about what the child is learning and how best to support them. Parental behaviours are not targeted outcomes of the intervention. It is very much a skills-based program and lessons are in comic format. The referring clinician supervises the teens' progress. It is free worldwide with a prescription.

On demand, telephone helpline counselling

There is broad agreement that telephone helplines play an important role in adolescent mental health services. The extent of that role varies from active listening and signposting (referral to and advice on available services) to counselling support from skilled professionals[26 27] depending on the service. Typically, 24/7 services, phone helplines are viewed as essential strands of crisis management and suicide prevention. However, some helpline services, such as Youthline[26] in New Zealand and Kids Help Phone[28] in Canada are operating in a different way. They offer professional counselling, specifically tailored to teen callers for all levels of psychological distress as well as young people in high-risk situations. They also offer web counselling services (synchronous or asynchronous counselling through webchat, email or text messaging with a counsellor) which was shown in 2015 by kids help phone to be 22% more likely to be used for contact in a crisis than the phone[28]. Kids Help Phone was the first port of call for 40% of users (i.e. they had not engaged with any other services), used by teens waiting on services (13%) and in-between appointments (20%)[28]. It would seem that this service in Canada is being used by youths who fall into our target cohort. It is also worth noting that although these services offer single-session treatment, callers are likely to call back thereby receiving somewhat continuous treatment albeit not with the same therapist. Adolescents build a relationship with the service, 40% of Kids Help Phone users reported using the service for more than 13 months, 22% four to 12 months and the remaining 48% four months or less28.

Evaluations of these types of phone and web counselling services are limited to pre and post call assessment. Historically, crisis management services assess measures related to suicidal ideation and intention[29] however newer services like Kids Help Phone measure less severe outcomes and have been shown to be effective in reducing psychological distress immediately post call[26 28].

Strengths

- Phone helpline counselling services are very convenient for the caller, they don't need to make an appointment or travel
- They are generally available 24/7
- They can provide relief from psychological distress in the moment the distress is occurring
- The caller can maintain is a certain level of anonymity while accessing the service

Weaknesses

- Phone counselling services are not typically designed for continuity of care. In the case where a youth calls back, they are unlikely to receive the same therapist.
- Physical cues ad body language which bring an extra dimension of communication in face to face therapy are absent
- There is currently no data available on long-term outcomes

Example On demand telephone helpline counselling – Kids Help Phone Canada

Ireland's Turn 2 Me[30] offers web counselling for over 18s and the ISPCC's Teenline[31] offers an active listening service specifically for adolescents but there is currently no adolescent-specific service offering on demand telecounselling or web counselling for teenagers in Ireland.

While there is no study comparing international youth helpline services, Kids Help Phone Canada appears to be the most rigorously evaluated and will be taken as the example intervention for this delivery mechanism.

Kids Help Phone is a 24/7[28], professionally delivered, youth-focused telecounselling service with webcounselling service options. Counselling processes are based on developmental-systemic theory which takes into account multiple determinants of adolescent problems. As well as counselling they offer referral information regarding appropriate follow on services. Evaluations have shown improvements in distress, perceived difficulty of the problem, self-efficacy and hope immediately post call[28].

Parent training to support youth

Overview

The family, particularly parents, is a key setting for tackling youth depression and anxiety disorders. Young people see their family, especially their parents, as important in their lives, especially when it comes to their mental health[32]. Studies have found that parents are the most commonly mentioned source of help young people would turn to if and when they have mental health difficulties[33]. Parents are motivated to take action for their child's well-being and as most adolescents still live with their parents, this proximity affords opportunities to notice significant changes in their child's mental health and behavior.

Several modifiable family factors have been found to contribute to adolescent anxiety and depression[14] and accordingly parents are often included in their adolescent's therapy, either through separate or joint therapy sessions or through psychoeducation in parallel with their child's therapy. Generally, it is assumed by treating clinicians that parents' involvement in their children's treatment is beneficial for therapy outcome. There is, however, a lack of consensus on this with studies finding efficacy results for and against parent involvement[34]. In cases of anxiety it has been argued that because parental behaviours such as over-involvement, over-control and negativity or dysfunctional family environments can contribute to a child's anxiety and because these behaviours are not targeted in the parental component of the intervention, the behaviours continue and serve to maintain the anxious behaviours in the child[34].

For this reason, only interventions which treat parent behavior and/or train parents to support the youth in need, as opposed to interventions in which parents participate in their child's therapy were considered for this delivery mechanism category.

Parent training interventions targeting outcomes in adolescents appear to be most common for conduct disorder[35]. However, a number of programmes addressing other outcomes including anxiety and depression were identified in this review. No systematic review of parenting programmes targeting adolescent mental health outcomes was uncovered. However, a rapid review of depression and anxiety programmes for children and young people, commissioned by Australia's beyond blue initiative and published in 2018, uncovered a small number of parent programmes targeting adolescent mental health, namely Tuning into Teens[36] and Triple P[37]. Two further programmes Parents Plus[38] and TOPS Partners in Parenting[39] were identified in this review. All four programmes aim to modify parent behaviours and emotional responses, improve parent-child relationship and train parents in how to support their teen. Some programmes also teach parents how to identify early signs of relapse. A drawback of parent training interventions is that uptake and engagement from parents can be low particularly in low socioeconomic populations[40].

Strengths

- Family factors contributing to adolescent symptoms are targeted
- Proximity of parents can provide timely identification of relapse with prior training
- Support for youth can extend long after intervention

Weaknesses

- No direct therapist support for adolescent
- Lack of uptake and engagement particularly in low-socio economic groups

Example Parent Training to support youth - Parents Plus Adolescents Program

Teen Triple P[41] and Tuning into teens[36] have an emphasis on prevention of adolescent emotional and behavioual problems and are geared towards young teens (12-14 year olds). TOPS Partners in Parenting[39] specifically targets anxiety and depression in older teens, 12-18 year olds. TOPS is a newly developed, therapist-assisted program delivered online that has shown promising early results[39] and presents the most scalable, parent training solution identified in this review. However, it is still very new and has not yet been tested in an RCT for effectiveness.

Parents Plus Adolescents Program[38] is a well-tested (4 evaluation studies, including 2 controlled trials and a meta-analysis[42]) effective parent program for families of adolescents aged 11-16 years with emotional

and behavioural disorder, developed and implemented in Ireland. Adolescent outcomes collected are behavioural difficulties as measured using the Strengths and Difficulties Questionnaire (SDQ)[43] total difficulties scale and peer and conduct subscales[38]. It is an 8 week, systemic, solution-focused, group-based intervention delivered through schools. Teaching is grounded in social learning theory but also incorporates ideas from conflict management, negotiation models and discipline strategies from Parent Effectiveness Training[38]. The footage and materials use Irish families and examples. A key, relevant feature of this program is the optional, complementary arm which can be delivered in parallel to the teens themselves called Working Things out (WTO). The WTO component promotes positive mental health and supports adolescents to overcome specific problems[44]. The WTO component is also delivered over 8 weeks. It is skills orientated and draws on CBT principles to highlight the connection between thoughts, feelings and actions. Adolescent participants of the WTO arm have shown significant improvement in global function (measured by children's global assessment scale) and adaptive coping behaviours (measured by the adolescent coping scale) on course completion and sustained at follow up[42].

Rapid access, integrated, youth service hubs

Overview

In response to the inappropriateness of traditional services for the unique needs of adolescents[45], rapid-access youth service hubs have recently emerged in a number of high-income countries. These delivery models share a number of core characteristics. They offer life support and early intervention therapy. They aim for improved access with multiple entry pathways, rapid response (between 72Hrs and two weeks from first contact depending on the model), youth-friendly settings and services and partnership with other social agencies e.g. employment agencies[46].

Research on youth mental health outcomes from youth service hubs is very limited. Evaluations are broad and descriptive in nature, report on short-term effects and do not include comparison groups. There have been no RCTs conducted on any youth service hub services to date. The first one will be conducted on the ACCESS Open Minds program in Canada this year[47] and will assess psychological distress using a control arm. It will also include data on help-seeking, access and cost-effectiveness compared to usual care and will provide the most rigorous evidence for evaluating this delivery mechanism. The best currently available data indicate that many young people who may not have otherwise sought help are accessing these mental health services[48] and, taking pre and post evaluations into account, positive outcomes, particularly in psychological distress and psychosocial functioning have been found[46 48]. Some young people, such as those with more severe symptoms and those who attend fewer treatment sessions fail to benefit[48]. Limited service availability and workforce shortages are challenges identified for this delivery mechanism[46].

Strengths

- Rapid access
- No entry criteria
- Multiple routes in, including self-referral
- Youth friendly setting and youth focused interventions
- Improvements in psychological distress and psychosocial functioning for mild to moderate symptoms

Weaknesses

- No controlled trials yet
- Not suitable for youths with severe symptoms
- Limited service availability may hamper rapid access goals and limit duration of treatments

Example Rapid access, integrated youth service hub – Jigsaw's Brief interventions

Exemplar interventions include Headspace in Australia[49], Forward thinking Birmingham in the UK[45], Youth One Stop Shops in New Zealand[50], Open Access in Canada[47] and Jigsaw in Ireland[19]. None of the published reviews of the models compare efficacy of interventions from the different centres. In this case, the brief interventions program of the Irish initiative Jigsaw was selected as the example for this delivery mechanism.

Jigsaw is focused on prevention and early intervention services aimed at young people with mild to moderate mental health symptoms. Based on ecological systems theory, the model considers the young person's whole social environment including family, friends, school, the neighbourhood and services that surround the young person[51]. Jigsaw aim to intergrate supports and services for young people and provide holistic care. Jigsaw's brief interventions program includes a mental health assessment and up to 6 therapeutic sessions. Trained professionals support young people over the 6 sessions to work through issues and arrive at goal plans. The most common focus of goal plans is on emotional, cognitive and behavioural self-regulation and CBT is usually provided within the sessions. Goal plans focused on family issues, peer relationships, living skills and physical health show good goal attainment results. Lower levels of goal attainment are seen in areas such as housing, employment, problem solving and conflict management. Multiple referral sources including self-referral are accepted and no clinical diagnosis is required[52]. Considerable improvements in psychological distress have been measured after Jigsaw's brief intervention programme using the Young Person (YP) - Clinical Outcomes in Routine Evaluation(CORE) psychometric scoring system[19]. No controlled trial of the intervention was found in this review. At the end of the six sessions almost 70% of young people are not referred on to other services as their needs have been met. 30% are still in need and referred on, mostly to primary care and CAHMS[19].

As jigsaw is an existing service with a presence in the Tallaght area, the recommendation in this case would be to partner with Jigsaw to extend services to cover unmet needs of youths identified in the inbetweeners report as opposed to implementing or establishing a new facility.

Teen-focused, secondary school group interventions

Overview

Teens spend considerable time in school, a complex system involving multiple and varied social interactions. Socially and academically challenging, and occurring at time of transition and physical change, the secondary school years can contribute to the development or exacerbation of mental health problems for adolescents. There is considerable evidence to suggest that targeted, group-based interventions and cognitive behavioral therapy yield a small but significant effect on depressive symptoms and a small to medium effect on anxiety symptoms[53 54] though results may be short term[54].

Most of the programmes shown to be effective were based on cognitive behavioral therapy (CBT) and delivered by a mental health professional over 8–12 sessions, with programmes of ten or more sessions

being more effective than shorter programmes[54]. Interventions have been shown to be more effective and longer lasting for young people of middle to high income socioeconomic status than those from low socioeconomic status[54]. Generally, programmes were more effective when therapist delivered as opposed to teacher delivered[55] although some interventions delivered through school staff who were appropriately trained and supervised have shown good results. Programmes targeting specific and indicated (particularly in the case of depression) problem areas were most effective [55].

Strengths

- Considerable evidence of efficacy in the short to medium term
- Potentially reduced stigma as within usual setting
- Less barriers to access e.g. on school grounds, often within school time

Weaknesses

- Effects not sustained longer term except for certain programmes e.g. FRIENDS for life Youth
- Less effective for youths from low socioeconomic backgrounds

Example Teen focused secondary school intervention – FRIENDS for life Youth

There are a wide range of school based programmes available for adolescents. FRIENDS for life Youth (12-16 years) is a group CBT treatment for anxious adolescents and their parents[56 57] and stands out in this review as it has been very widely tested, is one of the few programmes to show lasting effects at follow up, has a core parent-focused arm and has been implemented in Irish schools. It has been shown to yield small to medium, lasting reductions in anxiety. It consists of 10 one hour, group lessons plus two follow-up booster sessions. The group setting teaches adolescents to acknowledge and accept personal differences and to support and help one another. Importantly this program also includes a parent component which consists of parent psycho-educational sessions where parents are helped to understand anxiety, develop appropriate strategies to deal with their own anxiety, if necessary, and improve their child management and problem-solving skills.

The programme addresses the four components of emotions (attachment), physiological (body), cognitive (mind) and behaviour (learning). The emotions component relates to the importance of relationships and the significance of understanding feelings in ourselves and others. The physiological component relates to the physical reactions our bodies experience when anxious. This component involves teaching participants to be aware of their body clues, to self-regulate and use relaxation techniques. The cognitive component relates to thoughts that we have about ourselves, others and situations. During the cognitive component, participants are helped to use positive self-talk, challenge negative self-talk, evaluate situations realistically and reward efforts made. The learning/behaviour component involves helping participants to acquire new skills to cope with and manage anxiety.

It specifically targets anxiety and does not address other problems such as depression or conduct disorder.

Comparison of Delivery Mechanisms

While all interventions identified are youth focused and can be offered at scale, there are arguments for and against each. Extension of Jigsaw's brief intervention services, to accommodate more youths and allow youths to avail of the therapy more than once, may present the most general and holistic solution addressing the broadest range of adolescent problems. Depending on how critical targeting modifiable family factors is deemed to be, interventions which target parent behaviours may be considered more appropriate. Parents Plus Adolescent represents the intervention with the largest emphasis on modifying parental behaviours and associated family environment. A telephone helpline is arguably the most convenient and accessible intervention from the youth's perspective and is the most continuously available solution. With respect to efficacy, Parents Plus Adolescent and FRIENDS for life Youth have the most robust evidence of effectiveness.

A detailed study of cost-effectiveness of proposed interventions is beyond the scope of this review, however some costing information is provided in table 4 below as well as a snapshot of how the different interventions compare in terms of evidence base, extent family component is addressed, youth-centredness, timeliness and whether the intervention has been previously implemented in an Irish setting . It is important to note that costs reported below are direct costs only and do not include other costs e.g. set up costs, oversight costs and overheads and are just intended to give an approximate, relative comparison.

Table 4: Comparison of interventions identified

Delivery Mechanism	Intervention	Evidence	Cost	Irish Setting	Youth-focused	Timely	Outcome measures	Family component
Digitally delivered therapy	Teen Strong Australia	Medium - No direct evidence, strong evidence from related programmes	Free with a prescription	No	Yes	Yes	Anxiety, depression	Yes but limited
Telephone helpline counselling	Kids Phone Canada	Medium - Pre and post call evaluations show good results	Unclear. Kids Help Phone program costs in 2019 = €13,858,000 for catchment of 6.5m adolescents. Tallaght youth population = 11,000 A minimum cost for overheads would apply	No	Yes	Yes	Psychological distress, Suicidal ideation	No
Parent training to support youth	Parents Plus Adolescent Ireland	High – good evidence (4 evaluations including 2 controlled trials and a systematic review) achieved EIF evidence rating of 2+	Training for facilitators = €1320 Course materials for 15 parents = €120 For 20 school facilitators and 1500 parents = **€38,400**	Yes	Yes	No	Conduct disorder, Anxiety, Depression	Yes
Rapid access, integrated, youth service hub therapy	Jigsaw's Brief interventions Program Ireland	Medium – pre and post evaluations show good results	Cost per session in Dublin city Jigsaw = €310 8 sessions for 1500 youths = **€3,720,000**	Yes	Yes	Yes	Psychological distress	No
Teen-focused, secondary school group interventions	FRIENDS For Life Youth Australia	High – good evidence, achieved EIF evidence rating of 3	EIF has awarded the programme a cost rating of 1 = low cost estimated cost per child of £100 or less For 1500 = £150,000 = **€168,000**	Yes	Yes	No	Anxiety	Yes

Conclusion

This review provides an overview and comparison of the different delivery mechanism options that currently exist for the delivery of general, scalable, youth-focused psychological support to adolescents. The delivery mechanisms identified are digitally delivered therapy cCBT (example program Teen Strong), telephone helpline counselling (example program Kids Help Phone), parent training to support youths (example Parents Plus Adolescent), rapid access, integrated, youth service hub therapy (example Jigsaw's Brief Interventions) and teen-focused, secondary school interventions (example FRIENDS for life Youth). Each of the different delivery mechanisms has its advantages and these are discussed. The information presented in this review, along with consideration of key characteristics of the target group (e.g. nature and prevalences of adolescent problems and disorders, extent of contributing family factors) and available funding and resources represents a sound basis for the selection of an intervention for adolescents in Tallaght who are struggling with mental health or emotional and behavioural issues and not currently in receipt of services.

Appendices

Appendix A: List of reviews included in the final selection of this narrative review

Delivery Mechanism	Review Author/ year	Type of Review	Intervention	Results
Digitally delivered therapy	Hollis et. al (2017)	Meta-review	Digital health interventions incl. computer-assisted therapy, smart phone apps and wearable tech	
	Pennant et. al (2015)	Systematic review and meta-analysis	Computerised interventions for anxiety and depression in children, adolescents and young adults	27 studies included. cCBT effective for 12-25 year olds for anxiety (SMD –0.77, 95% CI –1.45 to –0.09, *k* = 6, *N* = 220) and depression (SMD –0.62, 95% CI –1.13 to –0.11, *k* = 7, *N* = 279) evidence for other computerized interventions inconclusive
	Grist et.al (2019)	Systematic review and meta-analysis	Technology delivered interventions for anxiety and depression in children and adolescents	34 RCTs included. d a small effect in favor of technology delivered interventions compared to a waiting list control group: g=0.45 [95% CI 0.29, 0.60] p<0.001. CBT interventions yielded the most significant effect (n=17, g=0.66 [95% CI 0.42–0.90] p<0.001)
	Calear et. al (2010)	Meta-review	Internet-based programmes that address child and adolescent anxiety and depression	12 studies included. Results show early support for the effectiveness of internet-based programmes for child and adolescent anxiety and depression.
	Reyes-Portillo et.al (2014)	Systematic review	Web-based treatment and prevention programmes for depression, anxiety and suicide prevention in children, adolescents and emerging adults	25 studies describing 9 interventions included. Limited evidence for the effectiveness of web-based interventions for youth and anxiety and depression.

Delivery Mechanism	Review Author/ year	Type of Review	Intervention	Results
Digitally delivered therapy	Weisz et. al (2017)	Multi-level meta-analysis	Psychological therapies for youth internalising and externalizing disorders	447 studies included. Mean post-treatment effect size (ES) was 0.46, the probability that a youth in the treatment condition would fare better than a youth in the control condition was 63%. Mean ES strongest for anxiety, weakest for depression. Usual care effective control condition.
On demand, telephone helpline counselling	Youthline (2008)	Selective evidence review	Phone counselling services	Evidence suggests that telephone counselling using trained counsellors can play a role in delivering flexible, cost-effective treatment
	Hoffberg et.al (2020)	Systematic review	Models of crisis line services	33 studies included. Quality evidence was lacking, most studies reported proximal outcomes, 80% of were assessed to have a high risk of bias.
Parent training to support youth	Thulin et.al (2014)	Meta-analysis	Parent involved treatments for childhood anxiety	No significant difference between parent-involved and child-only treatments. Small non-significant effect size -0.10 in favour of child-only treatments.
	Dretzke et.al (2009)	Meta-analysis	Parent training programmes for the treatment of children with conduct problems	57 RCTs included. Meta-analysis using both parent (SMD -0.67; 95%CI: -0.91, -0.42) and independent (SMD -0.44; 95%CI: -0.66, -0.23) reports of outcomes showed significant differences favouring the intervention group.
	Beyond Blue (2018)	Evidence check and rapid review	Depression and anxiety programmes for children and young people	There is high quality evidence of the effectiveness of programmes for prevention and early intervention. Most programmes were school based. The most evidenced were US based.

Delivery Mechanism	Review Author/ year	Type of Review	Intervention	Results
Rapid access youth focused service hubs	Vyas et. al (2015)	Selective review	Youth mental health services	Descriptive
	Settipani et. al (2019)	Scoping review	Community based youth service hubs	Descriptive
	Hetrik et. al (2017)	Evidence review	Integrated (one-stop shop) youth health care models	Data indicates that some youths who may not have otherwise sought help have accessed youth healthcare hubs. When evaluated, young people report having benefited. Those with severe conditions or who only attended a small number of sessions did not benefit.
	McGorry et.al (2013)	Selective review	Youth-focused mental health service models	Descriptive
Teen-focused, secondary school interventions	Calear et. al (2010)	Systematic review	School-based early intervention and prevention programmes	42 RCTs describing 28 interventions included. Targeted programmes treating students with elevated depression levels most effective. Effect sizes for all programmes ranged from 0.21 to 1.40. Teacher program leaders and attention control conditions associated with fewer significant effects.
	Kavanagh et. al (2008)	Systematic review	Mental health promotion interventions based on CBT delivered in schools to young people aged 11-19	17 RCTs included. Reduction in symptoms of depression found, though generally short term. Interventions for youths with clinical risk factors or existing symptoms more effective.

Delivery Mechanism	Review Author/ year	Type of Review	Intervention	Results
Teen-focused, secondary school interventions	Paulus et. al (2016)	Systematic review	School-based interventions for improving child mental health	CBT programmes identified yielding moderate to strong effects for a range of emotional and behavioural problems. The implementation of these programmes and the collaboration of the involved settings (school and home) and persons are important factors for their effectiveness under real-life conditions

Appendix B: List of non-review papers included in the final selection of this narrative review

Delivery Mechanism	Author/year	Type of Study	Intervention
Digitally delivered therapy	Newby et.al (2013)	RCT	Worry and Sadness Program (A parent program of Teen Strong)
	Titov et.al (2010)	RCT	The Anxiety Program (A parent program of Teen Strong)
	Perini et. al (2009)	RCT	The Sadness Program (A parent program of Teen Strong)
	Robinson et. al (2010)	RCT	The Anxiety Program (A parent program of Teen Strong)
On demand, telephone helpline counselling	Law et. al (2015)	Mixed methods evaluation	Kids Help Phone Canada
Parent training to support youth	Nitsch et.al (2015)	RCT	Parents Plus
	Carr et. al (2017)	Descriptive	Parents Plus
	Rickard et. al (2016)	Mixed methods evaluation	Parents Plus
Rapid access youth focused service hubs	Consultants C (2018)	Mixed methods evaluation	Jigsaw
	O'Reilly et. al (2015)	Engagement evaluation	Jigsaw
Teen-focused, secondary school interventions	Higgins et. al (2015)	Systematic review	FRIENDS Program
	Shortt et.al (2001)	Mixed method evaluation	FRIENDS Program

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