

Dialectical Behaviour Therapy – Skills Training for Emotional Problem Solving for Adolescents (DBT STEPS-A):

Pilot Implementation in an Irish Context



Daniel Flynn, Mary Joyce,
Mareike Weihrauch, Paul Corcoran,
Edel Gallagher, Claire O'Sullivan, Paula Hurley



Foreword

Connecting for Life, Ireland's National Strategy to Reduce Suicide 2015-2020, sets out a vision for Ireland where fewer lives are lost through suicide, and where communities and individuals are empowered to improve their mental health and wellbeing. Evidence shows that no single intervention alone will prevent suicide. It is the collective impact of a number of strategies in place at a population based, community based and individual level. The Connecting for Life strategy brings together 12 key elements across seven strategic goals which collectively are proven to help reduce suicide.

Youth are identified as a priority group within the strategy. We know that early intervention and promotion of positive mental health in schools is key to improving understanding of, and attitudes to suicidal behaviour, mental health and wellbeing; as well as to building resilience. The skills that adolescents learn in school are the foundation stone for their future; academically, vocationally, socially and emotionally. International research highlights the value of whole school approaches which are supported by the wider community including our health services. Effective inter-agency systems help young people to learn skills that assist them in understanding and managing their mental health, as well as accessing relevant mental health services as required.

One of the objectives of Goal Four of Connecting for Life is to improve access to effective therapeutic interventions for people vulnerable to suicide. We are proud to have supported the pilot implementation of Dialectical Behaviour Therapy – Skills Training for Emotional Problem Solving for Adolescents (DBT STEPS-A) in Cork, as part of this objective. This pilot programme demonstrates how the education system and health service can work in partnership to assist young people in both understanding and managing their mental wellbeing. The initiative gives us an appreciation of the challenges we face in implementing new approaches and how we need to both adopt and adapt such programmes so they work in an Irish context.



A handwritten signature in blue ink, which appears to read 'Gerry Raleigh', written over a horizontal line.

Gerry Raleigh

Director

National Office for Suicide Prevention

Contents

Acronyms	3
Acknowledgements	4
Executive Summary	5
Recommendations	7
Background	8
Adolescent Mental Health Issues in Context	8
Schools Based Intervention Programmes	11
Evidence Based Mental Health Programmes in Schools in Ireland	12
Youth Aware of Mental Health	12
MindOut	12
Conclusion	13
Unmet Need: A New Systems Approach	13
Dialectical Behaviour Therapy - Skills Training for Emotional Problem Solving for Adolescents (DBT STEPS-A)	14
Curriculum Overview	15
DBT STEPS-A for an Irish School Setting	16
Origins of Project Proposal	16
Evaluation of DBT STEPS-A in Ireland	19
Study Setting	19
Study Design	20
Participants	21
Measures	21
Procedure	22
Risk Assessment	23
Ethics	23
Data Analyses	23
Results	24
Missing Data	25
Baseline Scores on Outcome Measures	25
Change in Outcome Measures from T1 to T4	27
Summary of Findings on Outcome Measures	30
Student Survey Feedback	30
Teacher Survey Feedback	32
Network Meetings	32
Areas for Improvement/Reflections	33
Discussion	34
Interpretation of Results	34
Sampling Issues	35
Key Implementation Challenges	36
System Implementation	36
Programme Structure and Content	37
Training	37
Time for Preparation and Delivery	37
Programme Materials	38
Programme Structure	38
Engaging Parents	39
Conclusion	39
References	40

Acronyms

BASC-2	The Second Edition of Behaviour Assessment System for Children
CAMHS	Child and Adolescent Mental Health Services
DBT	Dialectical Behaviour Therapy
DBT STEPS-A	Dialectical Behaviour Therapy Skills Training for Emotional Problem Solving for Adolescents
HSE	Health Service Executive
NEPS	National Educational Psychological Service
NOSP	National Office for Suicide Prevention
SEAL	Social and Emotional Aspects of Learning
SPHE	Social, Personal and Health Education
YAM	Youth Aware of Mental Health

Acknowledgements

We would like to begin by thanking the National Office for Suicide Prevention (NOSP) who provided funding to train multi-agency staff in the DBT STEPS-A programme and who provided resources to support the evaluation of the pilot implementation in Ireland.

We also wish to acknowledge:

- ▶ The school staff and principals who recognised the need to enhance the mental health education of students in their schools and agreed to support both the pilot implementation and evaluation of the programme. We are conscious of the additional demands on time that this placed on both individuals and school systems.
- ▶ The staff in the National Educational Psychology Service, both school Educational Psychologists and senior management.
- ▶ Staff from the Health Service Executive (Child and Adolescent Mental Health Services and Health Promotion) who supported the schools through multi-agency networking and consultation as required.
- ▶ The research support of staff in the National DBT Project office.

Finally, we wish to thank the students in Cork schools who participated in the DBT STEPS-A programme and completed questionnaires and surveys which assisted with the evaluation of this programme in an Irish context. It would not be possible to understand the potential merits of such programmes or to be able to refine them for future students without their considered inputs.

Executive Summary

Ireland, like many other countries, has noted increasing levels of psychological distress in school aged populations in recent years. Although there has been some focus on causal factors internationally, the challenge is how to address this trend, particularly in the senior school cycle.

In Ireland, there are continued concerns about the emotional resilience of the adolescent population: maladaptive coping mechanisms such as self-harm peak for males and females under 24 years of age. Research on best practice in national and international policy documents highlight the importance of promoting mental health in schools. There is a particular focus on whole school approaches where social and emotional learning curricula target the universal population and where children with identified needs (either at risk or experiencing significant mental health problems) can be supported through community services. Strong multi-agency partnerships are required to ensure that the appropriate levels of mental health education and intervention are delivered as needed and in a timely manner to best meet the needs of the young person and their family.

There are few examples of universal programmes that address the needs of Irish adolescents in secondary school senior cycle. Dialectical Behaviour Therapy – Skills Training for Emotional Problem Solving for Adolescents (DBT STEPS-A) is a universal social and emotional learning programme that was developed in the United States. Although the DBT STEPS-A programme was developed outside of Ireland, the content has broad based applicability and can be applied across the secondary school system.

This programme was piloted in eight schools in Cork city and county. It was delivered by teachers and was supported by multi-agency partners in the National Education Psychology Service and the Health Service Executive (Child and Adolescent Mental Health Service and Health Promotion) in delivery and evaluation of the programme. The participating schools worked in local multi-disciplinary networks which supported the teachers in understanding and teaching the programme, and also facilitated escalation of levels of intervention as required to meet individual student need with the support of community health services.

Given the variation in schools' gender mix and socio-demographic status, and the amount of the programme delivered in each school, it was not possible to pool the data from the eight schools. A subsample of the data was used to evaluate the effectiveness of the programme by matching a school that completed the DBT STEPS-A programme with a control school where there was no intervention. Standardised measures were used to assess change in mental wellbeing from beginning to end of academic year for both schools. It was found that students in the DBT STEPS-A school had significantly lower scores on constructs such as depression, anxiety and social stress in comparison to the control school at the end of the academic year.

Data on the implementation of the programme from a teacher's perspective and on its utility from a student perspective was gathered via surveys. Although there were a number of challenges with adapting the programme for an Irish context, teachers were generally positive about the contents and its value for students. Equally, student feedback highlighted the importance of incorporating a mental health, social and emotional learning curriculum into their education. Student feedback offered useful suggestions on how the programme could be refined to better meet their needs.

DBT STEPS-A shows promise as an effective universal mental health education programme that could be adapted and refined to increase its utility in the Irish education system. It fits with international best practice guidelines and national policy on promoting mental wellbeing in schools. It offers a multi-agency partnership approach to supporting mental wellbeing in schools. Funding support will be required to optimise the programme content and adapt it for Irish schools. Future research will be required to evaluate the adaptations with larger samples and across geographic regions.

Recommendations

1. Given the current challenges to the psychological health of adolescents in Ireland, mental health and wellbeing education, particularly at senior cycle, needs to be prioritised in Irish schools.
2. Multi-agency funding is required to foster the ability of educational, health and community services to train and work together to develop and enhance a mental health programme for young people which channels extra support for 'at risk' adolescents as necessary.
3. Given the tentative findings which demonstrate the potential benefits of the DBT STEPS-A programme, the contents of the programme should be refined to better fit the Irish school system structure by taking into account the feedback provided by teachers and students. This will include:
 - ▶ Reducing lessons plans to 40 minutes instead of the 50 minute class used in the United States
 - ▶ Changing the order of the presentation of the materials; focusing first on mindfulness, then emotion regulation, interpersonal effectiveness and distress tolerance skills
 - ▶ Incorporating more multimedia and opportunities for interactive learning and to consider double class periods to have enough time for lesson content
 - ▶ Running the programme over the full senior cycle (i.e. introduction in transition year and weekly classes in 5th and 6th year to consolidate learning by engaging in more experiential practice).
4. Schools will need to incorporate DBT STEPS-A in the class timetable to ensure that students have the opportunity to cover the full content of the programme over the course of the senior cycle, thus maximising its potential benefit.
5. Teachers will need system support to train for the delivery of DBT STEPS-A where time is allocated for them to enhance their skills and avail of supervision and guidance as required.
6. Facilities should be made available for community partner agencies (NEPS, CAMHS and Health Promotion staff or voluntary agencies) to co-facilitate teaching sessions to enhance the student's experience of the programme.
7. Consideration will need to be given for how to best engage parents in understanding and supporting their child's mental health and wellbeing. This will require further evaluation where information is gathered from parents about their needs and also for the development of materials, to be delivered in vivo or via multimedia.
8. Further research should be conducted to explore the effectiveness of a modified version of DBT STEPS-A in the Irish secondary school senior cycle.

Background

In Ireland, in 2017, like many other developed countries, young people are faced with increased pressures in their daily lives from a range of sources including social media, societal, peer and academic pressure. Such challenges have led to increasing levels of stress, with corresponding impacts on parents, educators and professionals who struggle to respond effectively.

Adolescent Mental Health Issues in Context

In the past two decades, there has been an increased focus on the exploration of mental health issues in adolescents. For example, a study conducted in 2006 reported that the prevalence of anxiety and depression in adolescents were 3.7% and 4.5% respectively (Lynch, Mills, Daly & Fitzpatrick, 2006). Following on from this, research conducted by Headstrong and reported in the My World Survey (Dooley & Fitzgerald, 2012) highlighted that up to 70% of health problems and most mortality among the young arise as a result of mental health and substance-use disorders. According to this report, mental disorders account for a large proportion of the disease burden in young people in all societies with 75% of all mental disorders first emerging between the ages of 15 and 25. Almost a third of the sample (adolescents aged 12-19 years) reported depression and anxiety in clinical ranges (30% and 32% respectively). The report also noted that levels of distress were likely to increase with the age of the adolescent, and those who reported being distressed were more likely to use alcohol problematically and have experienced bullying (Dooley & Fitzgerald, 2012).

Further evidence of these trends have been highlighted in a recent UNICEF report (UNICEF Office of Research, 2017) stating that 22.6% of Irish children aged 11-15 years experience two or more psychological symptoms more than once a week. According to this report, Ireland ranks 16th of 31 countries with regard to reports of adolescent mental health issues (such as feeling low, irritability, feeling nervous and experiencing sleep difficulties). These rates have increased for Irish adolescents since previous surveys in 2006 and 2010 (see figure 1).

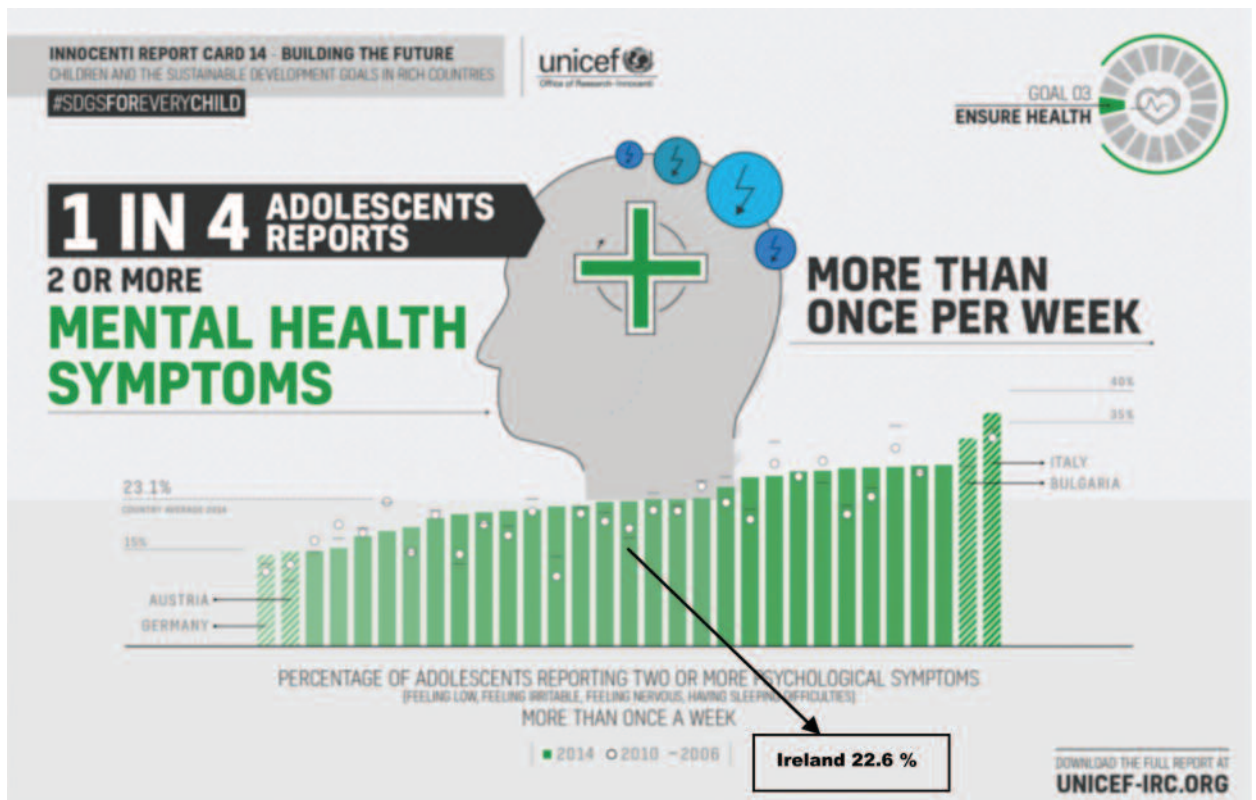


Figure 1 – Summary of adolescent reported psychological symptoms by country (reproduced from UNICEF Office of Research 2017)

In the absence of more adaptive coping mechanisms, self-harm (e.g. cutting, overdose) is sometimes used as a means of dealing with psychological distress. In Ireland, over the past number of years, there have been increases in self-harm rates for young people. In 2014, a study which explored data collected from the National Self-Harm Registry Ireland with data from the Child and Adolescent Self-harm in Europe study found that many young people reported self-harm (with a rate of 5,551 per 100,000 per year). It was also found that only 6% of young people who reported episodes of self-harm presented to hospital. For young people who did attend hospital following a self-harm episode, the peak age rate for females was 16 years, and 19 years for males (see figure 2; Griffin et al., 2015).

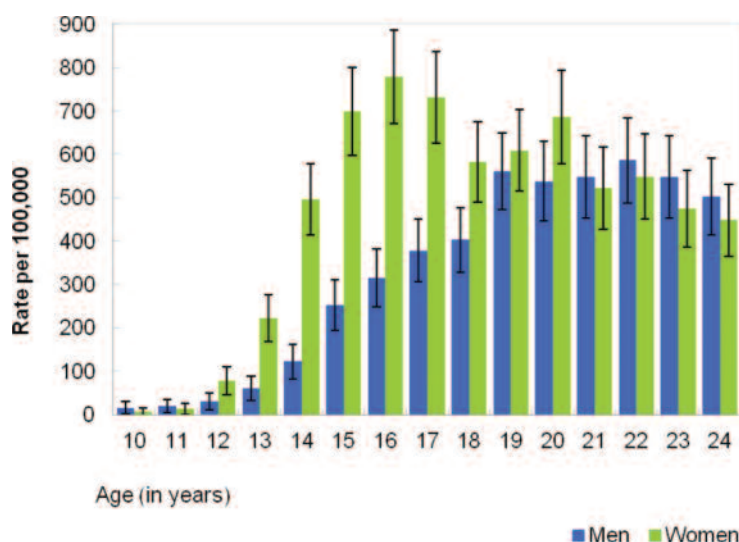


Figure 2 – Person-based rate of self-harm in the Republic of Ireland in 2014 by single year of age for 10-24 year-olds

Related to the issue of self-harm, a growing concern in Ireland is the high rate of suicide in adolescents. Ireland is ranked fourth highest in the EU/OECD region for suicide in adolescents.

In addition to the statistics regarding self-harm and suicide reported here, mental health challenges experienced by youth in Ireland have also been observed by teachers and mental health professionals. More specifically, teacher observations have identified increased maladaptive behaviours (e.g. cutting) and poor emotional control which results in the need for greater levels of engagement with the National Education Psychology Service (NEPS), and an increase in the number of referral to specialist services such as Child and Adolescent Mental Health Services (CAMHS). Schools have a growing awareness of positive mental health and its importance in the lives of their students, given the development of both international and national best practice guidelines (Weare, 2015; Department of Education & Skills, 2013).

In response to the outlined increase in psychological stress, one of the key concerns for Irish society is identifying how to support young people in regulating their emotions to avoid the need to resort to more extreme behaviours in attempts to numb or escape emotional distress. Current research supports the theory that the vast proportion of psychopathological changes have their onset in childhood and adolescence, and therefore young people are an especially important target for stakeholders concerned with reducing self-harm and suicidal behaviours (Werner-Seidler, Perry, Calear, Newby & Christensen, 2017). With this in mind, there is now multi-agency awareness of the need to provide a universal early intervention which fosters emotional resilience, resulting in more positive coping strategies and greater capacity for emotion regulation.

Schools Based Intervention Programmes

The school environment is often identified as an appropriate setting for accessing young people where preventative skills against future problems can be taught to the general school body and 'at risk' children can be identified for more specialised intervention or onward referral (Browne, Gaffni, Roberts, Byrne & Majumdar, 2004; Werner-Seidler et al., 2017). Using a school based system as the context for implementation of a prevention programme for mental health issues provides a natural and accessible way to reach young people. This environment provides unparalleled access to young people, offering an opportunity to learn skills and strategies to protect against, buffer or delay the onset of emotional difficulties. Such integrated schools programmes can also assist in removing some of the barriers that may restrict access to intervention such as time, location and in some cases cost (Werner-Seidler et al., 2017).

Although there is general consensus by international researchers that intervention should be done at a school level, there are divergent views on how this should be done and by whom (Fazel, Hoagwood, Stephan & Ford, 2014). Research (e.g. Werner-Seidler et al., 2017) highlights that schools-based mental health programmes may be universal, targeted or indicated. Universal prevention programmes are generally delivered on a wide scale to all young people in a class, regardless of risk. This approach offers a broader instructional framework and reaches a much wider population. Such programmes are often favoured as they are low cost, are least intrusive and are most likely to have the greatest chance of adoption in the school context; however they require sustained effort by the system.

Targeted programmes work specifically with young people who have been pre-identified as 'at risk'. As such, these programmes can be more specific and intensive. There is a strong research evidence base for these programmes (Fazel et al., 2014). Indicated programmes however, are aimed specifically at children with already manifest signs of mental health problems. In a recent systematic review, universal approaches were noted to account for over half of the studies, one third were indicated intervention and the remainder were selected interventions (Werner-Seidler et al., 2017).

There is a lack of consensus as to which is the more effective approach, with a need for schools and health promotion agencies to consider the best fit for their educational and health systems when choosing an appropriate intervention (Clarke & Barry, 2010, Fazel et al., 2014). However, evidence suggests that prevention programmes are successful across a range of domains. Prevention programmes have been seen to prevent or delay the onset of clinically significant symptoms, reduce harmful behaviour and work as a protective factor against future difficulties; it follows that prevention programmes often have secondary benefits in terms of societal burden and budgetary incentives by reducing future levels of the need to engage with mental health services and reducing future mental health related disability (Werner-Seidler et al., 2017). There are multiple examples of such programmes internationally such as Mind Matters in Australia, Friends for Life (7-16 years) in multiple countries (e.g. New Zealand, Canada, Finland) and the Social and Emotional Aspects of Learning (SEAL) programme in the United Kingdom (Library & Research Service, 2012).

There has been a growing focus on well-being and promoting mental health in schools. The past two decades have seen an increase in the development of social, personal and health education (SPHE), particularly in the junior cycle. Although a positive development, such advancements are not without challenges. Implementation reports have highlighted issues regarding training, resources, timetabling pressures, and less priority being given to the value of such programmes in comparison to academic exam subjects (O'Higgins et al., 2013). In 2013, a multi-agency report was produced by the Departments of Health and Education, the National Educational Psychology Service and HSE Health Promotion. This report (The Wellbeing in Post Primary Schools Guidelines for Health Promotion and Suicide Prevention, 2013) recommends that Irish schools adopt a whole school approach to mental health, involving a holistic integrated approach where schools and community partners work together to support positive mental health for young people. It recommends support for all, support for some and support for few, which is a tiered system where input increases in line with the needs of the young person. The report also highlights that all students need to learn emotional resilience skills but few may need intensive intervention for more defined mental health issues. Finally, the report outlines that mental health and wellbeing are not the sole responsibility of the school; parents and the wider community including health services have a role to play in supporting youth mental health and wellbeing.

Evidence Based Mental Health Programmes in Schools in Ireland

To our knowledge, there are two programmes with a focus on supporting youth mental health that have been implemented and evaluated in Irish educational settings for students in the senior cycle.

Youth Aware of Mental Health

Youth Aware of Mental Health (YAM) is a programme for 14-17 year olds that promotes increased mental health knowledge through dialogue and play (Youth Aware of Mental Health, 2014). The YAM programme (4 sessions totaling 5 hours) is taught by an external facilitator rather than teachers from within the students' school. The initial version was evaluated in 168 schools across ten European Union countries (including Ireland; Wasserman et al., 2015). The programme was associated with a significantly lower number of subsequent suicide attempts and suicidal ideation compared to the control group.

MindOut

In contrast to the YAM programme, MindOut is a school-based programme which is delivered by teachers within the school rather than an external provider. MindOut, originally a ten session Mental Health programme, takes a positive approach to the promotion of emotional and mental health among young people. It was developed in consultation with teachers, students and health promotion practitioners. The programme includes integration of existing material for Irish health education (the Lifeskills programmes;

McAuley, 1996) and the Australian Mind Matters programme (Commonwealth Department of Health and Aged Care, 2000). MindOut aims to assist young people to explore challenges to their mental health and the ways in which they cope. Initial outcomes were positive with students reporting: increased confidence about responding to a peer in distress; increased awareness of available supports; greater compassion for others in distress; and an increased likelihood of engagement in help-seeking behaviours. Further research is currently being conducted on revisions to the MindOut programme at a number of sites nationally.

Conclusion

While both YAM and MindOut programmes show promise, the research evidence to support the effectiveness of the programmes is limited. The YAM programme has a very brief duration and although data suggests benefits with regard to suicide attempts and suicidal ideation, studies to date do not report benefits in terms of mental health and wellbeing for non-risk participants. Although the YAM programme may have an advantage in terms of acceptability to participants due to its delivery by external agents, the programme may not impact on school culture or lead to a whole school or indeed multi-agency approach, which has been highlighted as the preferred format in best practice frameworks.

With regard to the MindOut programme, involvement of teachers in its delivery, and consideration of parent involvement and appropriate referral for specialist services as necessary, are certainly advantages and are consistent with best practice guidelines. However, it also is a relatively brief intervention and there is currently no published outcome data to indicate benefits of the intervention for improved mental health for participants. It will be important to review outcome data as it is available to consider the benefits of this programme in Irish school settings.

While the two outlined programmes have been applied in secondary school settings in Ireland, and a number of schools based programmes (e.g. Mind Yourself, Beat the Blues) which have not been evaluated also exist, there continues to be an unmet need within the Irish school system. In particular, the need for increased mental health and skills promotion in schools across County Cork was identified.

Unmet Need: A New Systems Approach

Ten schools in County Cork approached local agencies (NEPS, Schools Health Promotion staff and CAMHS) with a request for support amid concerns of increasing emotion dysregulation in their students. This coincided with the publication of “Connecting for Life, Ireland’s National Strategy to Reduce Suicide 2015-2020” (Department of Health, 2015). The strategy recommends inter-agency collaboration in the development and implementation of mental health promotion programmes for adolescents and is in line with the Wellbeing in Post Primary Schools Guidelines for Health Promotion and Suicide Prevention, 2013. In consideration of the schools’ request, a new programme, focusing on the social and emotional learning needs of a universal student population, was proposed.

Dialectical Behaviour Therapy - Skills Training for Emotional Problem Solving for Adolescents (DBT STEPS-A)

DBT STEPS-A (Mazza et al., 2016) is a social-emotional learning programme based on dialectical behaviour therapy (Linehan, 1993). Dialectical behaviour therapy (DBT) was originally developed as a treatment for individuals who experienced severe emotion and behavioural dysregulation. Multiple randomised control trials have been published highlighting the effectiveness of DBT for adults by reducing suicidal and self-harm behaviours, as well as improving interpersonal effectiveness and helping with emotion regulation (Cristea et al., 2017). More recently, DBT has been adapted for adolescents with emotional and behavioural problems (Rathus & Miller, 2006), with emerging evidence for its effectiveness (Mehlum et al., 2014; Flynn et al., In preparation).

DBT STEPS-A aims to teach adolescents aged 12- 19 years, in a general school-based setting, skills that will aid them with their decision-making and coping strategies, especially when experiencing emotionally stressful times. The programme is delivered by teachers in post-primary schools over the academic year (30 weekly classes). To date, there is preliminary research data from schools who have delivered DBT STEPS-A in the United States. Participants reported significant reductions on overall emotional distress scores when compared to peer controls (Haskell et al., 2014). 80% of students who completed DBT STEPS -A reported that they would use skills themselves, and 90% indicated they felt the skills would be helpful for others (Mazza et al., 2016).

Curriculum Overview

The DBT STEPS-A curriculum is divided into four main modules: mindfulness, distress tolerance, emotion regulation, and interpersonal effectiveness. The curriculum also comes with three tests that assess knowledge gain and abilities to apply specific skills to different situations. There is a diary card that can be completed by the students each week and reviewed by the teacher. The diary card provides the teachers with an overview of which skills the student is trying to use outside of the classroom and whether or not the skills have been used successfully. The completion of the weekly diary cards can also be used for grading purposes if required. (Mazza et al., 2016)

Each lesson starts with a mindfulness exercise followed by homework review and a check-in. The homework review portion of each lesson is done in pairs or groups, so that adolescents are coaching and supporting each other. The main focus of each lesson is teaching the students the new skills for the module they are undertaking and in what context to use these new skills. Each new skill is accompanied by examples that are age appropriate and highlight the skill that is being taught. Finally, each lesson ends with the assignment of work that is related to the new skill that was just taught. The skills taught in the programme help young people to understand and manage their emotions and provide alternative, adaptive coping responses to challenges to their mental health as outlined earlier in the report. It is proposed that these skills can be beneficial to adolescents who struggle emotionally and behaviorally with the following:

- ▶ relationships with peers, family
- ▶ academic pressure
- ▶ bullying (victimisation and perpetration)
- ▶ alcohol and drug use
- ▶ self-harming behavior
- ▶ suicidal ideation or behaviour and
- ▶ anti-social behavior (Mazza et al., 2016).

As a universal intervention, it is posited that DBT STEPS-A has cost-efficiency advantages, may reduce problematic behaviours that often result in suspension or emergency visits, increases emotional problem-solving, builds resilience, and can be taught in groups and therefore facilitates a whole class approach.

DBT STEPS-A is both proactive and preventive. It offers a school system the capacity to identify students who may be at risk of developing, or already be experiencing, mental health problems. This in turn facilitates escalation of the level of support and intervention required to meet the individual's needs, involving parents and school staff in making onward referrals as required.

DBT STEPS-A for an Irish School Setting

Prior to this current project, DBT STEPS-A had not been delivered in educational systems outside of the United States. As a result, it was decided to pilot the DBT STEPS-A programme by delivering it to transition year students (15-17 years old) in selected schools across Cork city and county.

The standard curriculum of DBT STEPS-A is delivered over 30 weeks to the universal student population (Tier 1). If risk is identified in the Tier 1 phase, an individual can be referred to Tier 2 and Tier 3 as required (Figure 3). Working across these three tiers involved collaboration between teachers in schools, NEPS (Cork South East), and CAMHS in Cork. This mapped onto the 'Wellbeing in Post Primary Schools Guidelines for Health Promotion and Suicide Prevention' in relation to support for all (universal), some (targeted) and few (indicated).

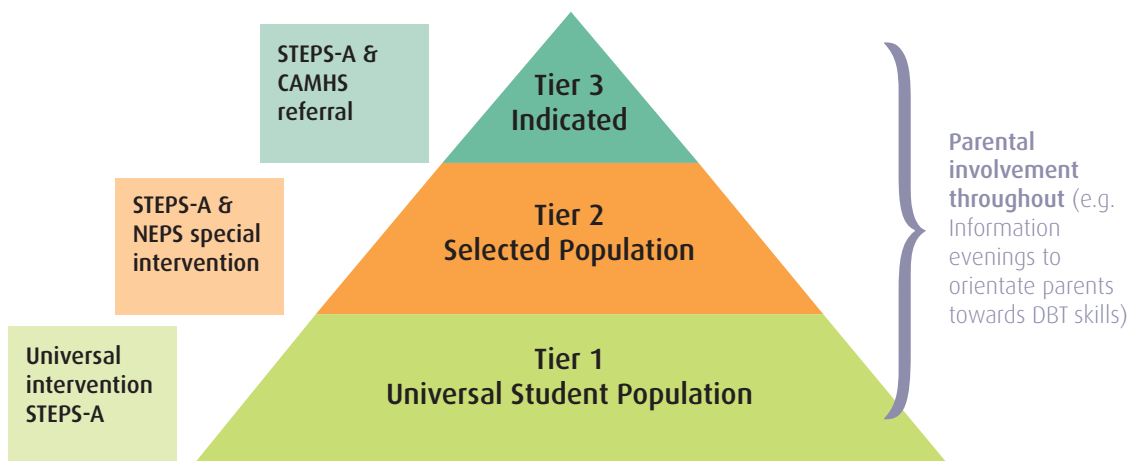


Figure 3- Escalation of intensity of intervention to match student need

Origins of Project Proposal

A series of meetings took place involving all stakeholders to consider multi-agency engagement in the project. Funding was secured from the NOSP to support training in the model and staffing to evaluate the intervention. At the outset, 13 schools (of 15 who initially expressed interest) attended an information session and briefing on the proposed model. Interested schools were invited to apply for training places in an effort to ensure individual staff buy-in and system commitment. A further meeting took place with ten

schools who applied for training to discuss potential system barriers and to problem solve anticipated challenges (e.g. timetabling issues, release of staff for training). A total of 13 teachers from eight schools¹, with the support of their principals, proceeded to attend training in August 2015. Training was delivered by Jim and Liz Mazza, the DBT STEPS-A programme developers. Staff from NEPS, Health Promotion, CAMHS and researchers from the National DBT Project team also completed the training so that all agencies involved would fully understand the model and could support escalation of students for targeted or indicated intervention as required. The timeline of engagement is outlined in Figure 4.

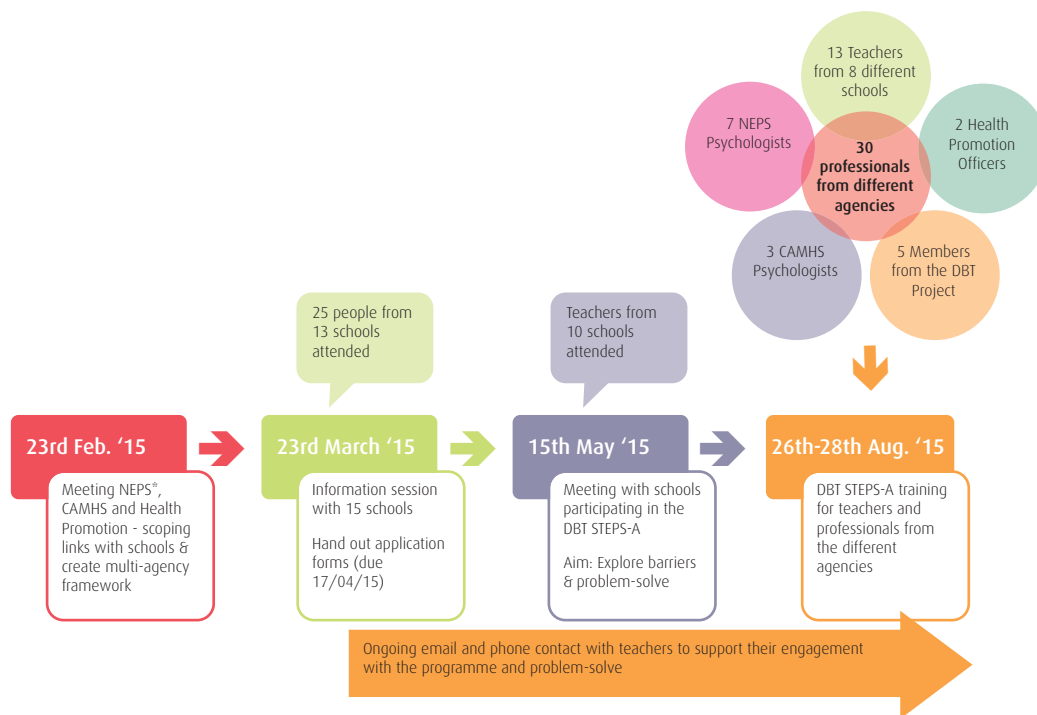
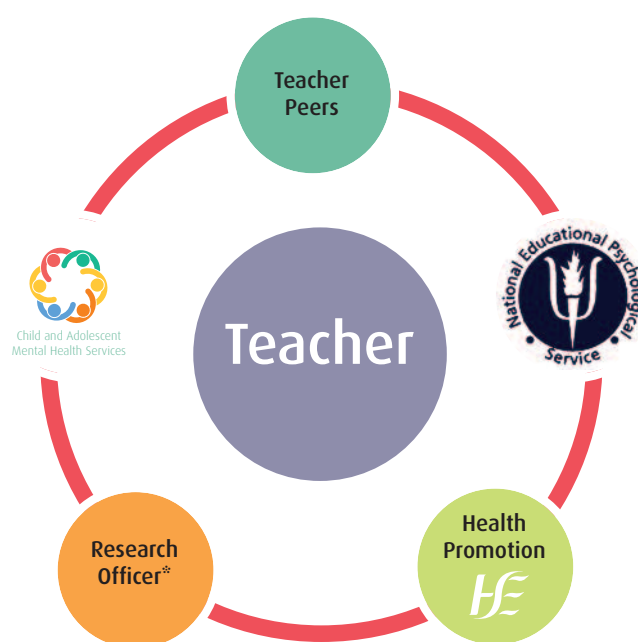


Figure 4 – Timeline of engagement with key stakeholders and planning phase

Three multi-disciplinary networks were established, where 2/3 schools were grouped by geographical location and supported by staff from Health Promotion, NEPS, CAMHS and the National DBT Project research team (see figure 5). The function of the multi-disciplinary team networks was to support ongoing learning, problem-solving and management of high risk cases. The network groups scheduled meetings every 6-8 weeks to correspond to module progression within the programme.

1. Two schools did not receive support to attend training and implement the DBT STEPS-A programme. However, one school did commit to participate in the evaluation as a control group site.



* Funding was provided by the National Office for Suicide Prevention (NOSP), Ireland

Figure 5 – Multi-agency network supporting teachers in DBT STEPS-A implementation

As a result of differences between the Irish and U.S. school structure, it was difficult to mirror the programme as applied to the US. Setting given the school system discrepancies. For example, in the U.S. class periods are typically longer (i.e. 50 minutes) than the Irish 40 minute class period. Furthermore, there are differences in the length of the academic year (30 weeks in the U.S. vs. a range of 25-33 weeks, dependent on individual school schedules in Ireland). As some schools only had the capacity for a maximum of 25 weeks of classes, the programme in its original form did not fit directly within the Irish school context. Discussions regarding adaptation of the original DBT STEPS-A programme took place in consultation with the programme developers on day 2 of training. Given the difference in the length of the academic year in Ireland and allowing for potential cancellation of classes, the programme developers identified the classes that were essential to cover the core concepts and material of the DBT STEPS-A programme. This resulted in an adjustment to the programme leading to a 22-week programme for the Irish school setting.

This report aims to explore the efficacy of DBT STEPS-A as a universal mental health promotion programme applied in an Irish public school system. It provides insights into implementing a teacher facilitated intervention at senior cycle in an Irish education context. This study trials and evaluates a multi-agency model involving the public health service (mental health and health promotion) and the Department of Education (Educational Psychologists) in supporting teachers to provide students with an opportunity to enhance adaptive coping skills by incorporating this into the weekly class timetable. Each teacher who was trained to deliver the curriculum by the programme developers held network meetings every 6 to 8 weeks with: other teachers, the Educational Psychologist linked with their school, the CAMHS Psychologist for their area, staff from health promotion, and a researcher from the implementation team.

Evaluation of DBT STEPS-A in Ireland

As outlined earlier, there is significant unmet need with regard to evidence-based mental health programmes that can be applied in senior cycle in the Irish school system. Given that DBT STEPS-A is a relatively new programme and has not been delivered outside of the U.S., it was important to evaluate its utility in an Irish context. A research evaluation of the implementation of DBT STEPS-A was thus proposed with the following objectives:

- ▶ To determine the efficacy of DBT STEPS-A as a means of increasing adolescents' social and emotional learning, resulting in: more adaptive coping mechanisms; reduced emotional distress and associated dysregulated behavioural responses
- ▶ To trial and evaluate a multi-agency model in providing effective positive mental health support to students in different tiers with varying need
- ▶ To obtain feedback from staff and students about the applicability of the programme in an Irish context.
- ▶ To provide insight into implementing positive mental health programmes in the Irish education system utilising existing resources to support a universal student population

Study Setting

The DBT STEPS-A programme was delivered in eight schools across Cork city and county where staff members committed to implementing and evaluating a mental health promotion programme to address the needs of their students. Participating schools had:

- ▶ Full sign-off from the principal for selected teachers to attend training, to run the class weekly during the 2015-2016 academic year, and to attend network meetings every 6-8 weeks
- ▶ Agreed to include a weekly class of DBT STEPS-A in their transition year timetable
- ▶ Agreed to participate as an intervention or control site for the research study
- ▶ Agreed to support the research team in informing students and parents about the research study and assist in gathering written informed consent from students and parents.

As the programme was universally delivered in the classroom setting, all transition year students were required to attend classes as part of their academic timetable.

There were two control group sites; one independent site with no intervention at the school and one site where the intervention was delivered to two of the three transition year classes. Table 1 provides an overview of the nine schools and the gender breakdown per school.

Table 1 - Participating schools, gender mix of school and participant group

School Number	Gender Mix	Participant Group
1	Mixed	Intervention
2	Mixed	Intervention
3	Mixed	Intervention
4	Female	Intervention
5	Male	Intervention
6	Mixed	Intervention
7	Mixed	Intervention
8	Male	Control & Intervention
9	Female	Control

There were five mixed schools, two all-female schools and two all-male schools. There were seven intervention sites and two control sites; one of which had an independent control group and the other which had both an intervention and control group in the school.

Study Design

For this pilot study, a between-within subjects design was used. This design is utilised to explore change over time for participants undertaking the DBT STEPS-A programme, from the perspective of the young people (self-report questionnaires). This design also facilitated the exploration of potential differences between the intervention group and a control group. Both quantitative and qualitative data was gathered from students to obtain a better understanding of their experience of the programme and to inform future implementation of the programme in Ireland.

Participants

All transition year students at the nine schools were invited to participate in the study which resulted in 479 participants. Only students where both student and parental consent were received were included in the research study. All participants were male and female transition year students aged 15-16 years. Participants were located in Cork city and county, thus coming from both urban and rural locations. As the programme was aimed at a general school population, there were no exclusion criteria.

Measures

In line with previous research carried out by the programme developers, the measures that were used to examine the effectiveness of the DBT STEPS-A programme were:

The DBT Ways of Coping Checklist (DBT-WCCL; Neacsiu, Rizvi, Vitaliano, Lynch, & Linehan, 2010) is a 59-item self-report measure, measuring the frequency of DBT skills used in the last month and non-DBT, dysfunctional coping strategies. It consists of two subscales: DBT Skills Use and Dysfunctional Coping. The scale has been used with both adults and adolescents. Principal component, internal consistency, test-retest reliability, and content validity analyses show strong psychometric properties and report a reliability of $\alpha = 0.8$.

The Second Edition of Behaviour Assessment System for Children (BASC-2; Reynolds & Kamphaus, 2004) is a behavioural and emotional screening system that offers a reliable and systematic way to establish behavioural and emotional strengths and weaknesses of children and adolescents. It has been found to show good reliability with a reported Cronbach's alpha of 0.9. The BASC-2 is comprised on 18 clinical subscales that can be reviewed independently or can be grouped into composite scales which can be used to summarise adaptive and maladaptive coping responses. Given that the focus for this study is emotional wellbeing in the universal population, two composite scales were chosen for the purposes of evaluation. The first is the Emotional Symptom Index (comprised of scales measuring Social Stress, Anxiety, Depression, Sense of Inadequacy, Self-esteem and Self-reliance); the second is the Internalising Problems (comprised of scales measuring Atypicality, Locus of Control, Social Stress, Anxiety, Depression, Sense of Inadequacy and Somatisation).

A participant satisfaction survey was also administered to both students and teachers at various time-points throughout the study. Administration of the surveys gave participants an opportunity to provide feedback about their experiences of the programme. More specifically, participants were asked to provide feedback on the benefits and challenges of the programme, and recommendations for how the programme could be improved.

Procedure

Students were informed about the research study in their first DBT STEPS-A class at the beginning of the academic year. They were provided with a research participant information leaflet and consent form. Parent/guardians were informed about the research study via electronic correspondence from the schools and also through the provision of information leaflets and consent forms which were sent home with the students. In addition, information sessions on DBT STEPS-A were facilitated by members of the research team who attended the parent/guardian information sessions organised in some of the schools at the beginning of the academic year.

Data collection was scheduled with DBT STEPS-A teachers from each school where a member of the research team visited each class to administer the measures to participants. The first data collection session took place within the first week of the programme start date. Informed written consent was obtained from adolescents on the day of data collection. Only students who returned a signed consent form from their parent/guardian could have their data included in the research study. Students were informed that their participation in the study was voluntary and that they would be invited to complete questionnaires at five time-points: baseline (Time 1), end of Module 1 (Time 2), end of Module 2 (Time 3), end of academic year (Time 4), and at 3 months follow-up (Time 5). It was outlined that while participation in the study was confidential and only the research team would see the responses provided by the adolescents, there was a limit to confidentiality: the research team would have to notify their teacher if they thought their safety might be compromised based on their answers to some questions. Following data collection at each of the schools, the researcher returned the measures to the National DBT Project office where the data was anonymised, filed and input to an electronic file. Participants who were unable to attend the data collection session but who had consented to participate in the study were asked to complete the battery of measures with their DBT STEPS-A teacher at the next available opportunity. The completed measures were collected by a member of the research team at the next data collection session.

Data collection with teachers was completed at two time-points: mid-way through the academic year (Time 1) and end of academic year (Time 2). Surveys were provided to teachers either at the network meetings, at data collection sessions with their class, or sent by email. Teachers were asked to return the questionnaires to the research team within a two week time frame either electronically (via email) or by post.

Risk Assessment

In order to ensure participant safety, a risk assessment was completed by the research team following data collection. The risk assessment included a review of six responses to items from the BASC-2 which indicated concern regarding the student (e.g. 'I feel like my life is getting worse and worse' or 'Someone is trying to control my thoughts' being answered as 'Always' or 'Often'). If risk was identified for students, a member of the research team contacted the students' DBT STEPS-A teacher and the teacher would initiate the agreed protocol within the school for risk management. This typically involved consultation with both the student and their parent/guardian to plan appropriate intervention either within the school (e.g. a referral to NEPS) or externally if deemed more appropriate (e.g. GP consultation or referral to Child Psychology or CAMHS services).

Ethics

Ethical approval was obtained to carry out this study from NEPS and the Clinical Research Ethics Committee of the Cork Teaching Hospitals.

Data Analyses

All outcome measures were quantitative and were summarised by their mean and standard deviation. T-tests and analyses of variance were used to assess baseline differences in outcome measures by gender, participant group and school. To explore the effects of the intervention on participants, linear mixed-effects models were used to estimate the treatment effect (intervention versus control) utilising all available data at each time-point. These models adjusted for clustering in the data due to repeated measures on the same individual and due to the intervention being delivered at eight sites. As there are four analyses (one per measure) completed on the same sample of participants, the Bonferroni correction was applied so that the new significance level was $p < .0125$. Data were analysed using STATA Version 13.1 and IBM SPSS Statistics for Windows 22.

Results

For various reasons (e.g. staff shortages, students being on work experience), some schools faced challenges in delivering the full DBT-STEPS-A programme. As the five data collection time-points corresponded with the DBT-STEPS-A programme content where data collection was scheduled at the end of each module, completed datasets were not obtained from all schools. Table 2 presents an overview of the modules covered and whether full datasets were obtained at each of the eight intervention sites.

Table 2 – Overview of modules delivered and dataset obtained for eight intervention schools

School Number	Mindfulness	Distress Tolerance	Emotion Regulation	Interpersonal Effectiveness	Full dataset obtained
1	Y	Y	Y	Y	Yes
2	Y	Y	Y	N	No
3	Y	Y	Y	N	No
4	Y	Y	Y	Y	Yes
5	Y	Y	N ²	N	No
6	Y	Y	Y ¹	N	No
7	Y	Y	Y	N	No
8	Y	Y	N ²	N	No

1 Module 50% completed

2 One class completed

As can be seen in table 2, two schools completed the full DBT-STEPS-A programme (schools 1 and 4). Three schools completed Mindfulness, Distress Tolerance and Emotion Regulation modules (schools 2, 3 and 7). Three schools completed Mindfulness, Distress Tolerance and had commenced the Emotion Regulation module (schools 5, 6 and 8).

As a result, and to enable comparison of data, data that was collected at all intervention schools at three time-points were used for the analyses; baseline (T1), end of academic year (T4) and 3 month follow-up (T5). Data collected at baseline and the end of academic year was used for the control group schools. For the purpose of this report, only data collected at baseline and the end of academic year is included in the analyses.

Missing Data

451 participants completed the baseline measures; 361 in the intervention group and 90 in the control group. At time-point 4, participant numbers reduced to 336; 265 and 71 for the intervention and control groups respectively. Reasons for missing data at time-point 4 included: students moving schools, international students returning to their home schools and students absent on the day of data collection. In addition, there were missing items in the completed measures for some participants. As a result, it was not possible to obtain total scores on some of the clinical subscales. This accounts for variance in the number of participants for the various analyses.

Baseline Scores on Outcome Measures

Baseline scores on outcome measures were first examined by school to identify if the data could be pooled across intervention sites. Baseline scores on outcome measures for participants by school are presented in table 3.

Table 3 – Baseline scores on outcome measures by school

Variable	1 n = 18 M (SD)	2 n = 52 M (SD)	3 n = 37 M (SD)	4 n = 26 M (SD)	5 n = 14 M (SD)	6 n = 98 M (SD)	7 n = 97 M (SD)	8 n = 64 M (SD)	9 n = 45 M (SD)	F (df), p
DBT Skill Use	52.46 (22.93)	66.45 (16.72)	61.52 (18.53)	63.63 (18.00)	57.04 (24.20)	60.29 (15.68)	64.57 (15.90)	61.35 (18.86)	65.88 (17.23)	1.89 (8, 442) .06
Dysfunctional Coping	29.51 (11.03)	31.89 (11.62)	32.95 (11.00)	35.60 (9.21)	38.50 (10.11)	31.35 (10.17)	32.29 (10.87)	31.02 (14.45)	32.95 (13.15)	1.12 (8, 442) .35
Emotion Symptom Index (BASC-2)	55.39 (15.59)	53.42 (11.10)	57.97 (13.06)	58.15 (12.68)	68.36 (15.05)	55.48 (12.23)	53.22 (10.73)	54.03 (13.22)	52.52 (13.79)	3.10 (8, 440) .002*
Internalising Problems (BASC-2)	57.21 (15.19)	54.02 (11.28)	58.09 (13.57)	57.69 (12.34)	69.36 (15.16)	54.18 (12.31)	53.03 (10.99)	55.17 (12.93)	52.50 (12.64)	3.47 (8, 442) .001*

A one-way between groups analysis of variance was conducted to explore the impact of school location on the four outcome measures. There was a statistically significant difference at $p < .0125$ in Emotion Symptom Index scores [$F(8, 440) = 3.10, p = .002$] and Internalising Problems scores [$F(8, 442) = 3.47, p = .001$] across the nine schools. Post-hoc comparisons using the Tukey HSD test indicated that the mean scores for School 5 were significantly higher than for Schools 2, 6, 7, 8 and 9. Although not statistically significant, mean baseline scores on DBT Skill Use were lower for schools 1 and 5. Although there were no significant differences in mean scores for dysfunctional coping, it is noteworthy that school 5 scored considerably higher than most other schools.

As school 5 scored significantly higher on the Emotion Symptom Index and Internalising Problems scales than the other schools, the data for this school was not pooled with the larger sample. As a result, baseline scores on outcome measures by gender and condition do not include data from school 5. Baseline scores on outcome measures for males and females across all eight schools (intervention and control) are reported in table 4.

Table 4 – Baseline scores on outcome measures for males and females

Variable	Males M (SD) n = 210	Females M (SD) n = 228	t (df), p
DBT Skill Use	61.16 (17.75)	64.08 (16.92)	-1.76 (435), .08
Dysfunctional Coping	30.49 (11.75)	33.48 (11.20)	-2.72 (435), .007*
Emotion Symptom Index (BASC-2)	53.89 (11.50)	55.23 (13.16)	-1.14 (433), .25
Internalising Problems (BASC-2)	54.38 (11.89)	54.70 (12.72)	-.27 (435), .79

*significant at $p < .0125$

As can be seen in table 4, there were significant differences between males and females on dysfunctional coping scores with females reporting higher scores. There were no differences on measures of DBT Skill Use, Emotion Symptom Index and Internalising Problems. It should be noted that mean scores for both males and females on the Emotion Symptom Index and Internalising Problems were within the 'Average' range (Reynolds & Kamphaus, 2004).

Baseline scores on outcome measures for the intervention and control groups were next examined and are presented in table 5.

Table 5 – Baseline scores on outcome measures for the intervention and control group

Variable	Intervention M (SD) n = 347	Control M (SD) n = 90	t (df), p
DBT Skill Use	62.64 (16.97)	62.86 (18.91)	.11 (435), .92
Dysfunctional Coping	32.35 (10.83)	30.90 (13.99)	-.91 (435), .36
Emotion Symptom Index (BASC-2)	55.18 (12.21)	52.28 (12.90)	-1.99 (433), .048
Internalising Problems (BASC-2)	55.01 (12.28)	52.74 (12.37)	-1.56 (435), .120

There were no differences between conditions on DBT Skill Use, Dysfunctional Coping and Internalising Problems scores. While the intervention group reported higher Emotion Symptom Index scores, this difference was not statistically significant.

Change in Outcome Measures from T1 to T4

The data was explored to identify if there were changes in scores on all four outcome measures from baseline (T1) to end of academic year (T4). As School 5 scored significantly higher on the Emotion Symptom Index and Internalising Problems scales than the other schools, the data for this school could not be pooled with the larger sample. Additionally, the number of completed programme modules varied at the intervention sites; therefore it was not possible to pool the data for the intervention group. As a result, the data for each school is presented separately. There were two classes in school 7 who did not continue with the intervention beyond December of the academic year, and as a result, their data is not included in the following analysis. Table 6 presents the adjusted means and significance level (with Bonferroni correction) for the four outcome measures by school.

Table 6 – Change in outcome measures from T1 to T4 by school

	School 1 (N=23)			School 2 (N=53)			School 3 (N=38)					
Variable	T1	T4	Sig.	T1	T4	Sig.	T1	T4	Sig.			
DBT Skill Use	53.06	64.14	.001*	66.66	70.20	.115	60.53	67.72	.02			
Dysfunctional Coping	29.62	32.96	.014**	32.08	33.78	.314	33.24	33.21	.98			
Emotion Symptom Index	56.94	55.83	.69	53.42	50.95	.047	58.27	58.36	.96			
Internalising Problems	57.83	56.2	.59	54.02	51.22	.023	57.85	58.42	.78			
	School 4 (N=26)			School 5 (N=14)			School 6 (N=103)					
Variable	T1	T4	Sig.	T1	T4	Sig.	T1	T4	Sig.			
DBT Skill Use	63.63	66.03	.59	57.04	68.93	.166	60.14	68.55	.001*			
Dysfunctional Coping	35.60	32.5	.15	38.50	34.16	.36	31.32	33.59	.08			
Emotion Symptom Index	58.15	50.53	.001*	68.36	58.06	.03	55.43	52.82	.02**			
Internalising Problems	57.69	50.7	.001*	69.36	60.74	.10	54.18	53.12	.33			
	School 7 (N=44)			School 8 (N=24)			School 8 (N=45) Control Group			School 9 (N=47) Control Group		
Variable	T1	T4	Sig.	T1	T4	Sig.	T1	T4	Sig.	T1	T4	Sig.
DBT Skill Use	64.90	69.14	.06	63.31	61.76	.726	60.05	60.26	.930	65.60	69.16	.08
Dysfunctional Coping	33.30	34.39	.59	34.42	30.70	.052	29.95	28.54	.471	32.93	33.26	.84
Emotion Symptom Index	52.82	51.57	.45	57.99	56.40	.393	51.90	48.96	.115	52.42	50.13	.03
Internalising Problems	53.33	52.15	.49	59.71	58.37	.319	52.89	50.25	.126	52.50	50.60	.053

*significant at $p < .0125$ *** significant at $p < .025$ as significance level changes if one test yields a significant result

As can be seen in table 6, there was a significant increase in DBT Skill Use from T1 to T4 for the intervention group at schools 1 and 6. A significant increase was observed in Dysfunctional Coping scores for the intervention group at school 1. There were no differences observed in DBT Skill Use and Dysfunctional Coping at the control group sites.

Significant reductions were observed on Emotion Symptom Index scores for the intervention group at schools 4 and 6. Similarly, significant reductions were noted for Internalising Problems scores for school 4. There were no significant reductions noted on the Emotion Symptom Index or Internalising Problems scales for the control groups.

In order to compare the intervention with the control group, two schools were matched based on gender and level of intervention received. The intervention group (school 4) was an all-female school who received the full intervention. The control group (school 9) was also an all-female school where the intervention was not delivered. Table 7 presents the mean change and significance level for the intervention and control groups, and the corresponding treatment effect.

Table 7 – Change in outcome measures and treatment effect for matched intervention and control groups from T1 to T4

Variable	Intervention group (n = 26) Mean change (95% CI), p	Control group (n = 47) Mean change (95% CI), p	Treatment effect Mean (95% CI), p
DBT Skill Use	3.27 (-3.67 to 10.21), 0.36	3.48 (-1.46 to 8.42), 0.17	-0.21 (-8.73 to 8.30), 0.96
Dysfunctional Coping	-3.05 (-7.52 to 1.42), 0.18	0.31 (-2.87 to 3.49), 0.85	-3.36 (-8.85 to 2.13), 0.23
Emotion Symptom Index	-7.56 (-10.99 to -4.14), <0.001*	-2.32 (-4.49 to -0.15), 0.04	-5.24 (-9.3 to -1.19), 0.011*
Internalising Problems	-6.91 (-10.19 to -3.63), <0.001*	-1.92 (-3.99 to 0.16), 0.07	-4.99 (-8.88 to -1.11), 0.012*

*significant at $p < .0125$

For the intervention group, there was a significant improvement with respect to two of the four outcome measures (Emotion Symptom Index and Internalising Problems). There were also changes in the same direction for these measures for the control group, although these changes were not statistically significant. Comparing these changes between the two groups showed a statistically significant treatment effect for Emotion Symptom Index and Internalising Problems. The effect sizes were large (Cohen's F squared = 0.65 and 0.83 respectively).

Summary of Findings on Outcome Measures

Exploration of the baseline data by school identified that one of the schools reported significantly higher scores for Emotion Symptom Index and Internalising Problems scales than five of the other schools. The results of the analyses found that baseline scores for males and females were similar on three of the four outcome measures; significantly lower dysfunctional coping scores were reported for males. There were no significant differences between conditions for the four outcome measures at baseline.

As a result of the identified differences in baseline scores across schools, and variation in the number of DBT STEPS-A classes delivered across schools, it was not possible to pool the data across all sites. Exploring the data by school identified changes in some of the outcome measures from T1 to T4 at three of the eight schools where the intervention was delivered. Finally, when an intervention school who delivered the full programme was compared with an independent control group, the intervention group reported significantly lower scores from T1 to T4 on the Emotion Symptom Index and Internalising Problems scales than the control group.

Student Survey Feedback

At the end of the school year, in addition to completing the quantitative measures, students also completed a participant satisfaction questionnaire. This gave students the opportunity to describe their experiences of the DBT STEPS-A programme; what they enjoyed and what they found challenging about the programme. It also gave students the opportunity to provide feedback on how the course could be changed before being made available in other schools.

Students indicated that participation in mindfulness exercises was the most enjoyable experience of the programme. Some reported it was relaxing and helped to calm their thoughts and stop worrying about things. Other positives included becoming aware of emotions, understanding emotions and learning new skills to manage them, participating in group activities together, and the interaction between the students in the class. Examples of feedback from participants include:

“Being able to deal with my emotions and find a solution even in my worst times”

“I liked some of the mindfulness exercises with which you could stop yourself worrying about other things”

“That I learned how to deal and recognise a lot of my emotions”

“I learned a lot of new things on how to deal with certain situations and also how to relax”

Challenges of the programme related to content and delivery. Students noted that they found the language and wording challenging and at times difficult to understand. They found the material covered to be quite theoretically heavy and thus found it hard to concentrate in the classes. Examples of feedback include:

"The amount of information. There is way too much information for such a short space of time."

"I was really disappointed in the programme. Mental wellbeing is of the utmost importance for adolescents. Most classes consisted of the teacher basically reading off a script...with little to no input from the students. More student discussion is needed in class to engage the students."

"The theory was very long winded so it was very hard to concentrate on."

Recommendations from participants included simplifying the content and making learning more interactive (teacher/student interaction and including more group activities in order to put the skills learned in class into practice). Some students felt the programme needed to be adapted to make it more relevant to an Irish context (shortening the content or increasing the amount of classes dedicated to DBT STEPS-A due to the amount of material covered). Examples of recommendations from participants include:

"I love the idea of this programme but it needs to be prioritised and cut down. It would be good as an ongoing course – perhaps as 1st to 3rd years, so it could be concentrated on practiced etc..."

"Less terminology. More teamwork/student interaction. Shortened course."

"More interactive activities with students and teachers. And easier language because it makes it seem more complicated than it is and it turns students off."

"I love talking about mental health as someone with an anxiety disorder I feel that everyone would benefit from a class like this. But you're going about it the wrong wayIt needs to be more co-operative between students involved in the class rather than having them sit in a room and wait for the day to be over. You have to stimulate them, interest them. Most of my class problem with this is that it was boring and controlling. Change this and you have an amazing course that educates people AND listens to others opinion."

Teacher Survey Feedback

Survey data was collected from teachers at two time-points. Teachers were asked to comment on: the value of the network meetings in supporting DBT-STEPS-A implementation and the programme content; the skills and materials provided in regards to whether they addressed the needs of their students.

Network Meetings

With regard to the multi-agency network meetings, the majority of teachers attended five meetings over the course of the year. Teachers were positive regarding their clarity in understanding the purpose of meetings and on how helpful the meetings were in supporting their implementation of DBT STEPS-A. Six of eight teachers rated these as 'Good' or 'Very Good'. Comments included:

"I found it beneficial to participate in a mindfulness exercise with the clinicians as it gave me a reminder of how I should do it. It also gave me some inspiration for different hooks to engage students. It was extremely useful to listen to other teachers' problems with the material and to hear what worked for them. I left meetings feeling more focused and with more confidence about what I was doing".

"Consultation with peers was the most helpful, as their feedback was coming directly from a day-to-day school environment. Also felt good support from the clinicians".

"From the point of view of support and networking, I think the programme was excellent".

Areas for Improvement/Reflections

The teachers also provided feedback regarding suggestions for areas of improvement. Suggestions included:

“Very insightful curriculum, sometimes I question do students link the material with their everyday living. If the lesson content was designed that students would role play, more experiential style”.

“Too complex (all of the programme)...Material too wordy (notes & handouts), language used too complex. Programme not suitable (as it is at the moment) for our student cohort e.g. SEN, ASD, low literacy levels and for some on a cognitive/ emotional level”

“There is a need for more varied materials. Powerpoints, video clips - colour etc ”.

“I will restructure for next year as we intend to run again...I would do mindfulness exercises throughout but perhaps not go into it too much detail too soon until they get the hang of it. It would be great to have a mindfulness session separately during the year by a trained professional; I think they would get more out of it that way”.

Although teachers were positive in general about the DBT STEPS-A programme and the benefits of the programme for students to have this curriculum available in the senior cycle, they highlighted suggestions for improvements which are reviewed in more detail in the Discussion section.

Discussion

This was the first study to evaluate the DBT STEPS-A programme in an Irish school setting, independent of the programme developers and outside of the United States. An analysis of a subset of the data which compared the intervention with a matched control group found significant reductions on composite measures incorporating constructs such

as depression, anxiety and social stress. While the results suggest that delivery of the full DBT STEPS-A programme yields positive results and shows promise, these results need to be interpreted cautiously; given the feedback from students and teachers with regard to content, structure and implementation challenges.

Interpretation of Results

The analyses identified significant increases in DBT Skill Use from T1 to T4 at two of the eight intervention sites. There were no differences identified at the remaining five intervention sites or in the control group. It is difficult to provide a reason for these findings as there was no correlation identified between increase in skill use and amount of intervention received. It is possible that there may have been variation in the way in which the programme was delivered. Although experienced teachers, all were novice with regard to delivery of the DBT STEPS-A programme and individual factors may therefore have accounted for such differences (e.g. didactic vs. interactive delivery of material, understanding and ability to confidently deliver the programme, wider system challenges). Student and teacher survey feedback lends support to this hypothesis.

A significant increase was observed in Dysfunctional Coping scores at one of the intervention sites, despite the expectation that scores would decrease. While participants did not present with high levels of Dysfunctional Coping to begin with, these trends

were noted to be of interest. Given that the foundations of the DBT STEPS-A programme are rooted in mindfulness, it is possible that students may have become more attuned to emotional distress but not yet have an opportunity to fully develop and consolidate more adaptive coping responses. This is particularly pertinent for students who did not have the opportunity to complete the full programme. Additionally, transition year is less structured and less focused on academic activities in comparison to other school years. It is thus possible that vocational placements and other social interactions over the course of the year could have challenged students in the absence of the typical school year structure, therefore heightening Dysfunctional Coping scores. Longer term follow-up with students or extending the programme across the senior cycle might provide opportunities to better monitor and understand these findings.

There was also a significant reduction in Emotion Symptom Index scores at two intervention sites, and in Internalising Problems scores at one site. Again, these scores did not correlate to the amount of the

intervention received by participants. As transition year is a time for development of other skills such as social and personal development skills, it is possible that such factors may contribute to these findings. It is also possible, unbeknownst to the researchers that other mental health promotion activities were conducted in these schools during the

study timeframe in line with Well-Being in Post-Primary Schools policy document (Department of Education & Skills, 2013). Alternatively, as with DBT Skill Use, teachers and systems may be a contributing factor to the variation reported on these scales across schools.

Sampling Issues

One of the key challenges of real world research is working with what is presented in a naturalistic environment of a publicly funded education system. The schools involved in the research study were nine of 15 schools that had originally attended a briefing on implementing DBT STEPS-A in Cork. All schools who expressed an interest in providing the intervention (with full system support) were facilitated to train and deliver the programme. Therefore, for the research study, it was not possible to control for variables such as the gender mix in schools (i.e. all-female, all-male, mixed gender) or the socio-demographic setting (where some schools were located in disadvantaged areas).

Analyses of the data highlighted that school 5 had significantly higher baseline scores on the Emotion Symptom Index and Internalising Problems scales than five other schools. This school was noted to be located in a disadvantaged area and teachers reported that some students had Special Education Needs or Autism Spectrum Disorder presentations. It is possible that both of these factors contributed to higher scores on the composite scales. It should be noted that school 5 was the only school to report mean scores in the 'At risk' category of the BASC-2 scales (i.e. > 60). Furthermore, there was variation by school in the number of programme modules

delivered during the academic year (see section on System Implementation). As a result of the outlined differences in scores and intervention duration across the schools, the data could not be pooled for the analysis.

There were also challenges with accessing participant groups of equal size and that were also matched for gender-mix and socio-demographic status. For example, the number of participants in the intervention group ($n = 361$) was much larger than the control group ($n = 90$). In addition, participants in the control group comprised of students from two schools; one which was a completely independent site and one where only one of three transition year classes received the intervention due to staff resource issues. As one of the schools taught the DBT STEPS-A programme to some students in transition year, it was not possible to rule out contamination of the control group within this transition year cohort. It is also possible that control group students at this site may have been impacted by changes in school culture as a result of the intervention being taught within the school setting. Future research with equal and matched samples in both the intervention and control group might address the limitations highlighted in the current study.

Key Implementation Challenges

International research (Fazel et al., 2014) recommends that the research agenda needs to focus on system level implementation and the maintenance of interventions within a system over time. Given that this was a pilot implementation of a model developed in another jurisdiction, one of

the main aims of the study was consideration of challenges to adapting the model to meet a different system and cultural context. Key challenges included system implementation, programme structure and content, and the acceptability of the model to the Irish student population.

System Implementation

Although all schools that participated in this project committed to delivering the full intervention, there were challenges with schools following through on this commitment. Only two of the eight schools were in a position to deliver all modules of the DBT STEPS-A programme. The remaining schools partially completed the programme. As the students in these schools did not get the full intervention, it is difficult to draw concrete conclusions on the merits of the programme in the Irish school setting.

In some instances, programme delivery was impacted by teachers being unavailable to deliver the programme as a result of competing demands when schools prioritised academic content over the social and emotional learning curriculum. In other instances, teachers reported that it was difficult to

complete all of the modules due to competing demands for students in the transition year curriculum which also involved work placements and other social activities outside of the school setting. Given such challenges, future implementation of DBT-STEPS-A will require careful planning and commitment from schools. Although the flexibility of the transition year timetable facilitated scheduling of the DBT STEPS-A curriculum, it may mean that completing the full programme within one academic year is too challenging. Consideration might be given to scheduling double class periods and/or running the programme across transition year and fifth year to allow sufficient time to embed DBT-STEPS-A as part of a whole school approach to mental health promotion.

Programme Structure and Content

Throughout the programme, information was obtained from teachers through surveys and anecdotal feedback gathered at each of the network meetings. A number of themes emerged which could assist with refined future implementation of DBT-STEPS-A within the Irish school system.

Training

Although all teachers completed two full days of training and had the support of a clinical and research network, a number of teachers reported concerns about delivering the programme content. Each lesson was mapped out by the programme developers with handouts for students and teacher notes for each class. Although positive about having this guidance, teachers found the content dense and somewhat unfamiliar as they had not developed the teaching materials for the class themselves. Feedback from teachers indicated that they may have benefitted from opportunities to co-deliver classes with a clinician to enhance their confidence in teaching the materials, and to observe the clinician's interaction with students.

Time for Preparation and Delivery

Teachers reported spending significant amounts of time preparing for the delivery of each lesson. They indicated that having to adjust the material from teaching it in a 50 minute class (as would be the case in the U.S. school system) to a 40 minute class in an Irish context was a particular challenge. Given that there was less class time; teachers sacrificed reviewing homework and planning practice which in turn, compromised opportunities to consolidate learning for students. In the U.S., students complete a diary card or weekly record of their practice of newly learned skills which can be reviewed and monitored by the teacher to assess progress. Although this was included as part of the planned work for the DBT STEPS-A programme in Ireland, teachers indicated that they did not have the time to review these cards and that students were not willing to fill them in. Given that this was not, or could not, be prioritised may have impacted on students consolidating the learning from the class and applying it to their daily lives in between sessions.

Programme Materials

Given that the materials were paper-based with no multimedia content, teachers indicated that it was difficult to engage the students and hold their focus with the programme content. Based on feedback provided from the teacher's first survey, efforts were made by the research team to problem-solve this challenge. Power-point slides and multimedia clips corresponding to the individual modules were developed during the academic year to assist the teachers with summarising key learning points and using more audio-visuals to assist with student

engagement. All materials were reviewed by the programme developers to ensure they were consistent with the original programme content and were a useful adjunct to existing DBT-STEPS-A material. Despite these efforts, teacher feedback at the end of the academic year indicated that the content of the programme was too wordy and dense, and needed further refinement. They also highlighted the need to further enhance the multimedia content to make the material more interactive for students.

Programme Structure

Teachers also reported concerns about the structure of the programme. The running order of the modules was delivered as set out by the programme developers. Following initial orientation, teachers taught Mindfulness skills and then Distress Tolerance skills. Teachers outlined that as many of the students were not experiencing significant distress, they could not relate to some of this content and examples were hypothetical rather than shared lived experiences. Teachers expressed concern that having this focus early in the programme resulted in loss of interest and sense of relevance for many of the students at an early stage. It was highlighted that Emotion Regulation and Interpersonal Effectiveness skills were more universally applicable and should be prioritised in the early stages of the programme.

The original format of the programme included the opportunity to have in-class tests at the end of each module. This facilitates both the student and the teacher reviewing the learning in the module. Given the challenges of time with the reduced academic

year and teacher's capacity to take on the additional task of reviewing the tests; this was not included in the current pilot of DBT STEPS-A in Ireland. Adjustment of the programme structure and content could facilitate the inclusion of these in-class tests, particularly if the programme was to be delivered over two school years.

In summary, feedback from teachers highlighted that although the skills in DBT STEPS-A are perceived as beneficial to the students, the materials need to be revised to better suit the needs of the Irish school system. Content needs to be condensed with due consideration given to class timetables, use of appropriate multimedia implemented to aid learning and discussion of skill, and reordering the sequence of skills presented. Novice teachers will require opportunities to receive ongoing supervision and instruction on the teaching of skills, to assist them in bringing the content to life for students and support them in modelling and practicing the skills in the classroom setting.

Engaging Parents

As a systems intervention, the clinical and research staff had planned to deliver information sessions for parents to orientate individuals to the skills being taught to students and to assist families in discussing and consolidating practice at home. Although the teachers and schools facilitated the invitation of parents to such a forum, the uptake was poor and these sessions did not proceed given limited interest

from the wider parent body. Consideration will need to be given to looking at other channels to support parents in understanding the skills taught to their children via the DBT STEPS-A programme. This could include use of skills information sheets and video or online resource materials which could be developed to enhance their understanding and learning as an adjunct or alternative to facilitated parent sessions.

Conclusion

As outlined, there is a clear and growing need for universal mental health interventions in schools, particularly at senior cycle. Although DBT STEPS-A shows some promise as a viable option to meet this need, any such programme will not succeed unless there is full systems support both nationally and locally.

One of the challenges in providing an intervention for this population is identifying a model that will work across the diverse range of school environments that are incorporated under the publicly funded education system in Ireland. Taking the sample for this project, nine schools in one geographical area, highlights the complexities and diversity of school settings (e.g. urban/rural, mixed-gender/single gender, socio-economic status). Implementing universal health programmes consistently is challenging given that each school operates independently in setting its timetables for the academic year, and staffing interest/availability and suitability to deliver the materials which may

vary by location. The community system supports will also vary dependent on the geographical location and established working relationships between schools and statutory and voluntary agencies.

It is essential that national multi-agency partnerships including Department of Health, Education and the voluntary sector work together to ensure support is available to foster local interdisciplinary working, in line with best practice guidelines. This will involve working together on translating policy into practice and funding training as appropriate to facilitate high quality interventions delivered by well trained and supported staff. Mental Health interventions provided such as DBT-STEPS-A will need to be continuously evaluated and refined taking into account data on effectiveness and applicability in meeting the needs of Irish adolescents. Feedback from all stakeholders including adolescents will inform, refine and optimise mental health programmes within second level schools.

References

Browne, G., Gafni, A., Roberts, J., Byrne, C., & Majumdar, B. (2004). Effective/efficient mental health programs for school-age children: a synthesis of reviews. *Social science & medicine*, 58(7), 1367-1384.

Clarke, A. M., & Barry, M. M. (2010). *An evaluation of the Zippy's Friends emotional wellbeing programme for primary schools in Ireland*. Health Promotion Research Centre, National University of Ireland, Galway.

Commonwealth Department of Health and Aged Care (2000). *MindMatters: a mental health promotion program for secondary schools*. Canberra, Commonwealth Department of Health and Aged Care.

Cristea, I. A., Gentili, C., Cotet, C. D., Palomba, D., Barbui, C., & Cuijpers, P. (2017). Efficacy of Psychotherapies for Borderline Personality Disorder: A Systematic Review and Meta-analysis. *Jama psychiatry*, 74(4), 319-328.

Department of Education and Skills (2013). *Well-being in Post-Primary Schools-Guidelines for Mental Health Promotion and Suicide Prevention*.

Department of Health (2015). *Connecting for Life – Ireland's National Strategy to Reduce Suicide 2015-2020*. Hawkins House, Dublin.

Department of Health & Children (2006). *A Vision for Change: Report of the Expert Group on Mental Health Policy*. Dublin: Stationary Office.

http://www.irishpsychiatry.ie/Libraries/External_Events_Documents/vision_for_change_full_document.sflb.ashx

Dooley, B. A., & Fitzgerald, A. (2012). *My world survey: National study of youth mental health in Ireland*. Headstrong and UCD School of Psychology.

Fazel, M., Hoagwood, K., Stephan, S., & Ford, T. (2014). Mental health interventions in schools in high-income countries. *The Lancet Psychiatry*, 1(5), 377-387.

Flynn, D., Kells, M., Joyce, M., Corcoran, P., Gillespie, C., Suarez, C., Swales, M., Arensman, E. (in preparation) Evaluating the effectiveness of 16 week dialectical behavior therapy for adolescents (DBT-A) across multiple sites in public community mental health settings

Griffin, E., Arensman, E., Dillon, C.B., Corcoran, P., Williamson, E., Perry, I.J., (2015) *National Self Harm Registry Annual Report 2014*. Cork: National Suicide Research Foundation

Haskell, I., Daly, B.P., Hildenbrand, A., Nicholls, E., Mazza, J.J. and Dexter-Mazza, E.T. (2014) Skills training for emotional problem solving for adolescent (STEPS-A); Implementation and programme evaluation. Paper presented at the annual conference on Advancing Mental health, Pittsburgh, P.A.

- O'Higgins, S., Galvin, G., Kennedy, C., Nic Gabhainn, S. and Barry, M., 2013. The implementation of SPHE at post-primary school level: a case study approach (Doctoral dissertation, Marino Institute of Education).
- Hoven, C. W., Wasserman, D., Wasserman, C., & Mandell, D. J. (2009). Awareness in nine countries: a public health approach to suicide prevention. *Legal medicine*, 11, S13-S17.
- Linehan, M. M., Armstrong, H. E., Suarez, A., Allmon, D., & Heard, H. L. (1991). Cognitive-behavioral treatment of chronically parasuicidal borderline patients. *Archives of general psychiatry*, 48(12), 1060-1064.
- Linehan, M.M., (1993), *Cognitive Behavioural Treatment of Borderline Personality Disorder*. Guilford Press
- Lynch, F., Mills, C., Daly, I., & Fitzpatrick, C. (2006). Challenging times: prevalence of psychiatric disorders and suicidal behaviours in Irish adolescents. *Journal of adolescence*, 29(4), 555-573.
- Mazza, JJ, Dexter-Mazza, ET, Murphy, HE, Miller, AL, & Rathus, JH (2016). *Skills Training for Emotional Problem Solving for Adolescents (STEPS-A): Implementing DBT skills training in schools*. Guilford Press.
- McAuley, B (1996) Developing myself and others: social, personal and health education for pre-Leaving Certificate classes. Teacher's book. Manorhamilton, North Western Health Board.
- McMahon, E. M., Keeley, H., Cannon, M., Arensman, E., Perry, I. J., Clarke, M., ... & Corcoran, P. (2014). The iceberg of suicide and self-harm in Irish adolescents: a population-based study. *Social psychiatry and psychiatric epidemiology*, 49(12), 1929-1935.
- Mehlum, L., Tørmoen, A. J., Ramberg, M., Haga, E., Diep, L. M., Laberg, S., ... & Grøholt, B. (2014). Dialectical behavior therapy for adolescents with repeated suicidal and self-harming behavior: a randomized trial. *Journal of the American Academy of Child & Adolescent Psychiatry*, 53(10), 1082-1091.
- Mehlum, L., Ramberg, M., Tørmoen, A. J., Haga, E., Diep, L. M., Stanley, B. H., ... & Grøholt, B. (2016). Dialectical Behavior Therapy Compared With Enhanced Usual Care for Adolescents With Repeated Suicidal and Self-Harming Behavior: Outcomes Over a One-Year Follow-Up. *Journal of the American Academy of Child & Adolescent Psychiatry*, 55(4), 295-300.
- Miller, A. L., Rathus, J. H., & Linehan, M. M. (2006). *Dialectical behavior therapy with suicidal adolescents*. Guilford Press.
- Mindout: National Youth Council of Ireland <http://www.youthhealth.ie/content/mindout-mental-health-promotion-programme-out-school-settings> Accessed: 30/05/2017
- National Office for Suicide Prevention (2009) *Annual Report*. National Office for Suicide Prevention, Population Health, Health Service Executive, Dr Steven's Hospital, Kilmainham, Dublin 8, Ireland

Neacsiu, A. D., Rizvi, S. L., Vitaliano, P. P., Lynch, T. R., & Linehan, M. M. (2010). The Dialectical Behavior Therapy Ways of Coping Checklist (DBT-WCCL): Development and Psychometric Properties. *Journal of Clinical Psychology*. <https://depts.washington.edu/brtc/files/NeacsiuWCCL.pdf>

Rathus, J. H., & Miller, A. L. (2002). Dialectical behavior therapy adapted for suicidal adolescents. *Suicide and life-threatening behavior*, 32(2), 146-157.

Reynolds, C. R., & Kamphaus, R. W. (2004). *BASC-2: Behavioral assessment system for children manual (2nd ed.)*. Circle Pines, MN: AGS.

Oireachtas Library and Research Service (2012) Spotlight-Well-being: Prompting mental health in schools https://www.oireachtas.ie/parliament/media/housesoftheoireachtas/libraryresearch/spotlights/spotWellbeing280212_101701.pdf

Unicef Office of Research (2017) *Building the Future: Children and the Sustainable Development Goals in Rich Countries*. Innocenti Report Card 14, UNICEF Office of Research- Innocenti, Florence

Wasserman, D., Hoven, C. W., Wasserman, C., Wall, M., Eisenberg, R., Hadlaczky, G., ... & Bobes, J. (2015). School-based suicide prevention programmes: the SEYLE cluster-randomised, controlled trial. *The Lancet*, 385(9977), 1536-1544.

Weare, K. (2015). *What works in promoting social and emotional well-being and responding to mental health problems in schools*. London: National Children's Bureau.

Werner-Seidler, A; Perry, Y; Calear, A.L; Newby, J.M. & Christensen, H. (2016) *School based depression and anxiety prevention programmes for young people: A systematic review and meta-analysis*. *Clinical Psychology Review*.

World Health Organisation (WHO), (2010). *Towards Evidence-based Suicide Prevention Programmes*. WHO Press, World Health Organisation, 20 Avenue Appia, 1211 Geneva 27, Switzerland.

Youth Aware of Mental Health (2014) <http://www.y-a-m.org/research>. Accessed 30/05/2017

National DBT Project Office
Inniscarraig House
Western Road
Cork

www.dbt.ie