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England

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Universal approaches to improving children and young people's mental health and wellbeing

Narrative report of the synthesis of systematic reviews and grey literature review

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Narrative synthesis of findings

Nineteen systematic reviews, published between 2013 and 2018, were included in the synthesis, altogether reporting 113 different interventions. Below we summarise evidence of their effectiveness as reported in the systematic reviews, reporting as much detail as possible but without consulting the original articles. We do not report on all 113 interventions, but we have attempted to cover most of them and to include all those showing some degree of effectiveness. We have written a summary of this narrative synthesis and reported on the most promising interventions in a separate document.

For the purpose of our narrative synthesis, we sought to classify interventions into categories in order to help build a meaningful and informative synthesis. We therefore inspected the data we extracted from each systematic review and, based on that, we decided to classify interventions along 2 dimensions.

On one dimension, we classified interventions based on the main types of outcome measured as part of their evaluations (as reported in the systematic reviews). We identified the following 4 outcome categories:

Preventing behavioural difficulties: the intervention has been evaluated on its ability to nudge children and young people away from adverse behaviours or conduct problems; outcomes include bullying, eating disorders, externalising problems, substance misuse, suicidal thoughts, impulsivity, hyperactivity, and similar.

Promoting resilience and capabilities: the intervention has been evaluated on its ability to endow children and young people with skills, competences and protective factors needed in order to thrive; outcomes include coping, emotion regulation, cognitive functioning, problem-solving and decision-making, self-awareness, social competences (eg communication, empathy), and similar.

Preventing emotional difficulties: the intervention has been evaluated on its ability to prevent children and young people experiencing problems with the way they feel; outcomes include anxiety, stress, depression, internalising problems, hostility, and similar.

Promoting subjective wellbeing: the intervention has been evaluated on its ability to foster children and young people's positive feelings, mental states and attitudes towards themselves and the environment they live in; outcomes include mood, happiness, quality of life, satisfaction with life and aspects of it, self-esteem, self-worth, etc.

Alternative classifications to one based on outcomes, such as one based on intervention type (eg CBT-based, interpersonal, multicomponent) or on delivery mode (eg teacher-delivered, web-based, psychologist-delivered) were not readily possible,

because the systematic reviews did not always provide this information. In contrast outcome information was almost always provided.

As well as categorising interventions by outcome, on a second dimension we classified them according to the domain in which they operate to bring about change. Informed by the Millennium Cohort Study (Patalay & Fitzsimons, 2016), we adopted the following domain categories: individual, family, school and community. Since we found no intervention that had community-level components, we have simply classified the interventions we found according to the first 3 domains.

It is worth stressing that this dual classification by outcome and by domain is made at the level of individual interventions, rather than at the level of systematic reviews or of evaluation studies. It is therefore possible for the same intervention to be assigned to multiple outcome and/or domain categories. This happens whenever the same intervention was evaluated on different types of outcomes (within the same study or across different studies), or was designed to operate in different domains.

We have organised this narrative synthesis under 4 main sub-headings, which reflect the 4 outcome categories we have developed. When an intervention belongs to more than one outcome category, we have reported it under all relevant sub-headings. Under each sub-heading, the interventions are moreover surveyed in relation to whether they have individual, family and/or school components, whereby each sub-heading is itself divided into 3 sections reflecting the 3 domain categories. When an intervention belongs to more than one domain category, we have reported it under one section only in order to avoid repetition of findings. The choice of which domain section to report multi-domain interventions in was made as follows: interventions that are both individual and family, or individual and school, have been reported in the family section or in the school section respectively, whereas interventions that are both family and school (with or without being individual) have been reported in the school section only.

Preventing behavioural difficulties

We found 29 interventions that were evaluated on behavioural outcomes. Sixteen were individual-level interventions, 12 had a family-level component, and 7 had a school-level component.

Individual-level interventions

In an extensive systematic review, Dray et al. (2017) reported a number of individual-level interventions targeting children in primary school: for instance, the Promoting Alternative Thinking Patterns (PATHS) programme. PATHS is a school-based educational programme predominantly designed to promote resilience, but which also addresses behavioural problems related to aggression and conduct in the classroom.

Dray et al. (2017) reviewed 2 evaluations of PATHS. In one study, the programme consisted of 60 sessions delivered during one school year (3 x 20–30min sessions per week); based on Child Behavioural Check-List (CBCL) scores, however, no evidence of improvement in behavioural difficulties was found. The second study, in contrast, consisted of 46 primary lessons and several secondary ones per year (67 minutes, 2.4 sessions per week), and compared PATHS with 3 other conditions: a control, an alternative programme with similar aims (Triple P; see below), and a combination of PATHS with the alternative programme. Results demonstrated a decrease in teacher-rated impulsivity and ADHD scores on a bespoke assessment instrument at two-year follow up among those who participated in PATHS only, as compared to all other conditions. PATHS particularly benefitted children who had scored highly in impulsivity and ADHD at pre-intervention.

The effectiveness of PATHS was also appraised in another study targeting primary-school children reviewed by MacKenzie and Williams (2018). In this study, the programme lasted 2 years, and consisted of 44 teacher-led lessons in the first year, and 47 in the second year; children's behaviour was assessed at the end of both years. A decrease in behavioural problems, and specifically in aggression, was found at the end of the first year, based on the Strengths and Difficulties Questionnaire (SDQ) and on a bespoke teacher-rated measure; aggression however returned to baseline levels at the end of the second year. This version of PATHS therefore may be deemed less effective than the above variant.

Another example of an intervention which shows some promise from Dray et al's (2017) review is the Class-wide Social Skills Programme: this is a class-based programme to promote social skills; it is delivered by trained teachers for a minimum of 2 consecutive school terms, with a total of 22 lessons of 20 minutes each. The study reviewed by Dray et al. (2017) specifically monitored pupils' externalising problems. The study comprised 4 conditions: a control, a treatment group in which lessons addressed social competences, another treatment group addressing partner reading, and a further treatment combining the former 2. Results showed that the intervention led to a reduction in externalising problems after 3.5 years among those in the combined treatment group, based on the teacher version of CBCL, although not based on the parent version thereof.

Dray et al. (2017) surveyed a third behavioural intervention targeting young children: the 4Rs Programme – Reading, Writing, Respect, and Resolution. In the study referenced by the authors, the 4Rs Programme was described as a developmental intervention focused on social–emotional learning and literacy development, consisting of 7 modules taught between 21 and 35 lessons (50 minutes each) throughout one school year, and implemented over 3 consecutive school years. Behavioural problems, and specifically hyperactivity, were separately assessed via the ADHD

Symptomatology Scale. No immediate improvement in hyperactivity was observed; however, there was a significant improvement after 2 years of implementation. A fourth individual-level behavioural intervention for young children, again documented by Dray et al. (2017), was Zippy's Friends. Zippy's Friends is a story- and activity-based programme consisting of 24 sessions covering 6 modules on various topics about social and emotional competences over one school year (60 minutes weekly). This intervention is primarily meant to promote resilience and to prevent emotional difficulties, but in the studies in question hyperactivity and conduct problems were separately investigated via sub-scales of the SDQ. Unlike with the former 3 interventions, however, none of the studies recorded any improvement in hyperactivity or conduct problems.

Dray et al. (2017) also reviewed a study evaluating a primary-school intervention based on the principles of cognitive-behavioural therapy (CBT). This (un-named) intervention was relatively brief compared with the ones described above: 30 sessions over a 3-month period, each lasting 70 minutes per week. The intervention successfully decreased behavioural problems at post-test and at 6-month follow up, again based on CBCL scores. However, no controlled comparison was employed in the original study.

We also found several individual-level behavioural interventions for young people in secondary school. An example of an effective intervention is a variant for adolescents of the Penn Resiliency Programme (PRP). The PRP (which is described in more detail below) is primarily a depression-prevention and resilience-building programme, but Dray et al. (2017) reviewed one evaluation of the PRP where externalising problems were purposely monitored, using a sub-scale of the Youth Self-Report questionnaire. In this study, adolescents took part in 16 psychoeducational sessions over 2 months (40 minutes per session), and a significant decrease in externalising symptoms in the treatment group was reported as compared with a control group (which in fact displayed an increase in the externalising score).

In the same review, Dray et al. (2017) also documented 2 examples of less effective behavioural interventions for adolescents: the Aussie Optimism Programme (AOP) and LARS&LISA. These are both depression-prevention and resilience-building programmes in the main, but externalising disorders were separately assessed in 2 studies. In one study, the AOP entailed 10 optimistic thinking style modules and 10 social skills modules (one hour each over 20 weeks), but it did not affect CBCL scores for externalising problems. In one study investigating LARS&LISA where behavioural outcomes were monitored, adolescents participated in 10 CBT-based and social skills sessions of 1.5 hours weekly, but they did not display any improvement in externalising problems based on the sub-scale of the Self-Report Questionnaire for Depression (SBB-DES).

O'Reilly et al. (2018) reviewed the Social and Emotional Training (SET), a broad-aim intervention addressing resilience and externalising problems in adolescence, based in school and delivered by teachers. One study found that, at 3-year follow up, there had been a moderate reduction in self-reported externalising problems scores (assessment instruments not reported); moreover, bullying levels went down in schools implementing the intervention.

In a systematic review on cyber-bullying and cyber-victimisation, Hutson et al. (2018) surveyed 4 individual-level behavioural interventions for students in secondary school. Of these, only 2 may be considered as successfully reducing bullying and victimisation on the Internet: the Arizona Attorney General's Social Networking Safety Promotion and Cyberbullying Prevention, and Tabby in Internet, both 1-day programmes with lessons and discussions around cyberbullying. While the findings from the primary studies are not reported by Hutson et al. (2018), both interventions entailed some form of training in coping with bullying and teasing, in social and communication skills, and/or in issues around digital citizenship. Huston et al. (2018) argued that these training components may explain why those interventions have been found more effective than the others reported in their review. The long-term effectiveness of these programmes remains unclear.

Finally, in a meta-analysis focused on middle and high-school students, Franklin et al. (2017) surveyed a group of studies where externalising disorders were assessed, covering 6 different individual-level interventions. The authors do not report the findings from individual studies, and they acknowledge some degree of variability across findings. The estimated pooled effect size is reported as not statistically significant and the authors therefore conclude that, on the whole, there is no consistent evidence that the interventions examined improve externalising problems in adolescence. Except for the PRP and PATHS (which may well be among the few potentially effective programmes), none of the interventions mentioned above are included in this meta-analysis.

Family-level interventions

We identified 2 examples of behavioural interventions with only family-level components that target primary-school children. These are reported by MacDonell and Prinz (2017): Computer-assisted Parent Programme and Triple P online programme. These programmes are similar to one another in that they both involve audio/video learning, quizzes, games and feedback; the former is delivered on CD/DVD, while the latter is website-based. In the one study that assessed the first intervention, no improvement in behavioural problems of any kind was found. In contrast, Triple P has been appraised in 3 studies, and in all 3 evidence of effectiveness was found: children's behavioural disorders improved at post-test in all cases, and 2 studies also recorded a sustained improvement at 6-month follow up. MacDonell and Prinz (2017)

do not report the measures used to assess behavioural problems for either of these interventions.

MacDonell and Prinz (2017) also reviewed 2 studies on adolescents. These are both concerned with Parenting Wisely, a self-administered and entirely family-level intervention based on CD/DVD material addressed to parents in order to improve their parenting strategies and, in turn, adolescents' behaviour. The 2 studies conflict in their findings: one found significant improvements in adolescents' behavioural problems at post-intervention (although no follow up was conducted); the other found no such improvement. Information on measures employed was not provided.

The review by Hutson et al. (2018) is a good source of family-level behavioural interventions (with individual components as well) targeting secondary-school youth: specifically, interventions against bullying and victimisation on the Internet. The authors reviewed a number of interventions showing some positive results in terms of reduction in cyberbullying and cybervictimisation. These include: Cyber Friendly Schools Programme, in which students and their parents are trained in online communication, conflict resolution and social responsibility, and youth cyber leaders lead activities against cyberbullying, over a total period of one and a half years; Media Heroes, which entailed similar discussions over 10 weeks, and in which parents participated in events where their children presented information learnt; finally, NoTrap!, in which peer educators trained in communication and social skills, moderated an online forum and face-to-face cyberbullying awareness meetings, students prepared a TV programme about cyberbullying, and parents were involved throughout, over a total period of 6 months. As we noted above, findings from each study are not reported in their systematic review, but Hutson et al. (2018) point out that the effectiveness of all such programmes might reside in their coping, social and digital citizenship training components. Concerns remain regarding the validity of these findings due to the absence of any report of the instruments used to assess outcomes and of any long-term evaluation of these programmes.

School-level interventions

We did not identify any examples of behavioural interventions with a school-level component that targeted primary-school children. We did identify 5 targeting adolescents, however, all of which appeared in Hutson et al. (2018), and all of which also included components operating at the individual level and the family level. The first is ConRed, in which students participated in educational sessions on social networks over 3 months, with parents receiving similar content (as well as teachers). The second is KiVa, a whole-school anti-bullying programme based on virtual learning and discussions around bullying over 9 months (parents were also involved). The third is Cyberprogramme, which is based on student discussions over 19 weeks to foster critical reflection on cyberbullying consequences, rights and responsibilities and coping

strategies, with the involvement of teachers and parents. Finally, the fourth is called Visc Social Competence Programme, in which teachers train students on how to respond to cyberbullying, students complete a group project on bullying prevention (although cyberbullying is not specifically discussed), and parents are involved throughout. These 4 interventions were all identified by Hutson et al. (2018) as being among the effective interventions at reducing bullying and victimisation in their review, due to the above-mentioned training components they entail. As with all other studies reviewed by Hutson et al. (2018), however, long-term effectiveness was not assessed, and instruments used to measure outcomes were not reported in the review. A fifth intervention, iZ Hero, is a much briefer intervention (5 days) consisting of adventure-based stories to teach children about online issues (also involving parents); in this case no evidence of reduction in bullying and victimisation was reported by Hutson et al. (2018).

Promoting resilience and capabilities

We identified 59 interventions that were appraised in relation to their potential to promote resilience. Forty-four were individual-level interventions, only 9 included a family-level component, and 8 included a school-level component.

Individual-level interventions

In a recent systematic review, Fenwick-Smith et al. (2018) surveyed 4 individual-level interventions targeting primary school children: Learn Young, Learn Fair, Mindfulness-Based Stress Reduction, Responsive Advocacy for Life and Learning in Youth (RALLY) and Strong Start. Learn Young, Learn Fair is a lesson-based intervention with weekly hour-long meetings, led by teachers over 7 months, with the ultimate goal being to prevent anxiety and depression. The programme was evaluated on its impact on the ability to cope, as measured by sub-scales of the State-Trait Anxiety Inventory for Children and the Children Depression Inventory, and the evaluation revealed positive results. Mindfulness-Based Stress Reduction is again a curriculum-based intervention, lasting 12 weeks and delivered by non-school personnel, with the ultimate aim of reducing stress. Based on a range of validated metrics, an evaluation of the programme showed enhancements in coping, emotion and behaviour regulation, and empathy. RALLY, also delivered by non-school personnel, is a multi-component intervention specifically intended to promote resilience, which was also found to improve coping, self-regulation and empathy (measures used in the evaluation were bespoke). Finally, Strong Start consists of weekly sessions led by teachers for a period of one year, with scenario thinking, role-play, think-pair-share activities and children's literature. Based on the Schizophrenia Suicide Risk Scale and on participant observations, improvements in resilience outcomes were recorded. Whilst we have no comparative findings for these interventions, Fenwick-Smith et al. (2018) point out that teacher involvement in programmes was seen as a positive feature allowing for the

programme to be adapted to suit the class or school. The timing of outcomes measurement is not reported in detail, but the authors noted that, where longer-term follow up was conducted, most programmes did not show sustained benefit.

A further 4 primary school programmes were reported by MacKenzie and Williams (2018). Two studies investigated the effect on resilience of FRIENDS, a programme based on CBT we will describe in the following section more thoroughly. In these 2 studies, FRIENDS was delivered over 10 sessions by school nurses in one study and over 9 sessions by trained facilitators or teachers in the second study. Neither study found evidence of effect (3-month follow up in first study; not reported for second study), based on a range of validated scales as well as qualitative interviews.

MacKenzie and Williams (2018) also reviewed one study evaluating the PATHS programme (see earlier) and its impact on resilience. Whilst a significant difference between intervention and control groups was noted for competence and peer relations at 12-month follow up, this was not sustained at 24 months (measured using a bespoke teacher-rated scale). A short-term benefit in promoting resilience was also found for the Lesson for Living: Think Well Do Well programme. This 10 session CBT-based intervention delivered by a teacher or by a psychologist in personal, health and social education (PHSE) lessons found an improvement in avoidance and problem-solving at 3 weeks and at 6-month follow up; no difference was found between teacher-led and psychologist-led sessions. Finally, a study on another computerized CBT-based program, Think Feel Do, including cartoon character-led activities, practical exercises and music delivered in six 5-minute sessions, and led by a researcher, found no effect on resilience-related outcomes, as measured using the parent version of the Strengths and Difficulties Questionnaire.

Fenwick-Smith et al. (2018) have reported findings from 5 evaluations of Zippy's Friends, in which resilience-related outcomes were appraised. Four of these studies showed a positive effect for resilience and coping (no change reported for one study), measured using the Schoolagers' Coping Strategies Inventory, KidCope Questionnaire, Social Skills Questionnaire, and a workshop and interviews to elicit participants self-reported outcomes. The timing of outcome measurement is not reported.

One more example of an intervention for young children is Bounceback (O'Reilly et al., 2018), a teacher-led programme informed by positive psychology and designed to boost resilience outcomes among primary and secondary school children. Those who took part in Bounceback reported higher levels of resilience compared with a control group at 3-month follow up.

We found 4 resilience-building interventions targeting adolescents. Only one of these interventions, the Teaching Kids to Cope programme, surveyed by Carnevale (2013), showed any evidence of benefit to resilience. This programme comprises ten 45-minute

sessions delivered by a nurse with mental health experience. Follow up at 6 and 12 months found that participants were able to apply the coping strategies learnt to everyday life, however no comparative findings are reported (Coping Response Inventory for Youth). Three school-based programmes reporting resilience-related outcomes, BeyondBlue, RAP (both reported in Carnevale, 2013) and the UK Resiliency Programme (MacKenzie & Williams, 2018) all showed no evidence of effect on resiliency at long term follow up (1 and 2 years; 1 and 3 years; 1 and 2 years respectively).

We found 2 more examples of interventions for adolescents with some short-term impact but unclear long-term effectiveness. One is called Injoy and is a web-based intervention targeting adolescents (Banos et al., 2017). This is a self-administered intervention used in school settings and including weekly self-reports and a monitored discussion board. Small effects on coping and emotion regulation were reported, although the statistical and clinical significance of this effect was not detailed, and the timing of this outcome and the measurement scales used are not reported. The second example is SET (O'Reilly et al., 2018), which we have already described in the previous section, and which led to small to moderate enhancements in mastery and self-awareness compared with a control group. Outcome measurement scales are not reported by O'Reilly et al. (2018).

Family-level interventions

MacDonell and Prinz (2017) reviewed 4 family-level interventions, all computer-based, targeting either children or adolescents, and which were all evaluated on the grounds of their impact on resilience. Two of these interventions may be deemed promising: Triple P online, which we encountered in the earlier section, and the Substance Abuse Risk Reduction, which we introduce now. The Triple P online programme, as evaluated in the study reviewed by MacDonell and Prinz (2017), involved action tasks for young children with communication and feedback made through text messaging and email: findings from 2 trials showed a significant improvement in parent-child relationship quality both post-intervention and at 6-month follow up. There are 2 variants of the Substance Abuse Risk Reduction program for adolescents, one merely consisting of quizzes, the other additionally comprising animation and action tasks, have been evaluated across 4 studies. Two studies found a significant improvement in parent-child communication post-intervention for the simpler variant, but one study recorded this improvement at one-year follow-up only. The second variant of the programme, evaluated in one study, also led to a significant improvement in parent-child communication, interaction and quality of relationship (timing of outcome measurement not reported). The measurement scales used for individual studies are not reported by MacDonell and Prinz (2017), but the authors do state that 4 scales that are used across the studies included: CBCL, Eyberg Child Behavior Inventory, Child Depression

Inventory and Multidimensional Anxiety Scale for Children. Measurement scales used to assess resilience-related outcomes specifically are not reported.

School-level interventions

O'Reilly et al (2018) surveyed 2 whole-school interventions for adolescents evaluated on resilience outcomes, also involving some individual and family components: the UP programme (see also Fenwick-Smith et al., 2018) and MindMatters. The UP programme's stated aim was to reduce social inequalities in social and emotional competence and included activities for children and young people, development of staff, involvement of parents and whole school initiatives. The percentage of children and young people reporting high social and emotional competence was found to be significantly higher immediately following the intervention, however no long-term follow up is reported. Despite the stated aim of this intervention being to reduce social inequalities, there are no relevant findings reported for this outcome. The MindMatters programme involved parents and aimed to encourage respect, tolerance, resilience, communication and problem solving. Some positive changes in social competence were described following the implementation of the programme, but no comparative analysis is reported.

Preventing emotional difficulties

We identified 70 interventions that were evaluated on their impact on emotional difficulties. 59 were individual-level interventions, 4 had a family-level component, and 7 had a school-level component.

Individual-level interventions

We identified 4 individual-level interventions that had a large evidence base reported across a number of systematic reviews, namely: the FRIENDS programme (specifically, FRIENDS for Life), the Aussie Optimism Programme (AOP), the Penn Resiliency Programme (PRP) (including the Penn Preventive Program, PPP), and the Resourceful Adolescents Programme (RAP). We will report these programmes individually for the larger evidence base available for them, and we will report on other programmes afterwards.

FRIENDS. The FRIENDS programme is a programme for both primary- and secondary-school children, comprising face-to-face sessions with children and young people teaching relaxation techniques, cognitive restructuring and attentional training. The programme's structure may vary, but generally it is delivered over 10 sessions for children plus booster sessions (14–18 hours in total). The effectiveness of this programme in improving emotional difficulties has been researched across 9 studies and was reported in 5 of the included systematic reviews (Ahlen et al., 2015;

Carnevale, 2013; Corrieri et al., 2014; Dray et al., 2017; MacKenzie & Williams, 2018). The findings reported across all systematic reviews generally indicate an improvement in symptoms of anxiety and/or depression for children and young people involved in the programme, although this finding is not consistent across all studies and effect sizes vary. Evidence of effect for anxiety symptoms tended to be stronger than that for depression.

Dray et al. (2017) described some differences between study findings for 3 evaluations of FRIENDS for Life involving primary school age children. In the first study, a significant reduction in overall anxiety symptoms was found between immediately post-intervention and 3-month follow up only, while a non-significant reduction in overall anxiety symptoms was noted across time points (measured using the Multidimensional Anxiety Scale for Children, MASC). In a second study no significant intervention effect was found for anxiety symptoms (MASC). In a third evaluation of FRIENDS for Life, a significant intervention effect was found for child-reported generalized anxiety symptoms for health professional-led vs. school personnel-led FRIENDS, and health professional-led FRIENDS vs. usual school provision at 12-month follow up; no intervention effect was found for child-reported depressive symptoms (Revised Child Anxiety and Depression Scale, RCADS). The latter 2 studies were also reviewed by MacKenzie and Williams (2018), who report the same findings.

Ahlen et al. (2015) reviewed 5 further evaluations of FRIENDS for Life. Three studies found that both anxiety and depression decreased at post-intervention. There was however one study which found that, whilst anxiety decreased at post-intervention, depressive symptoms increased. The fifth study instead pinpointed an increase in anxiety symptoms immediately post-intervention. Unfortunately, Ahlen et al. (2015) do not report on any longer-term follow up for any of these studies. Outcome measures used to gauge impact included MASC, RCADS and CDI.

Carnevale (2013) reviewed one more evaluation. In this study, FRIENDS for Life was shown to lead to reduced depression at 12-month follow up, as measured by the CDI and Spence Children's Anxiety Scale (SCAS). No effect on anxiety was reported.

Penn Resiliency Programme. The PRP has been evaluated for its impact on emotional difficulties in 5 studies, reviewed in 6 of the systematic reviews included in this mapping review (Ahlen et al, 2015; Carnevale, 2013; Corrieri et al., 2014; Bastounis et al., 2016; Dray et al., 2017; Franklin et al., 2017). The PRP is a coping skills programme based on CBT principles, usually delivered over 12 to 16 weekly sessions of 90 minutes duration, though the exact programme structure may vary. It is generally a programme for adolescents.

Dray et al. (2017) reported findings from 4 studies that investigated the effectiveness of the PRP. Three of the 4 studies found a significant reduction in depressive symptoms

or internalising symptoms (one study) post-intervention. In one study this decrease in depressive symptoms (measured using the Children's Depression Inventory) was only found in Latino children and sustained at 6, 12 and 24-month follow up, but no effect was seen across time points for African-American children. A fourth study found no evidence of effect on depressive symptoms (CDI and CBCL) across the 36-month follow up (findings from these same studies also reported in Ahlen et al., 2015; Bastounis et al., 2016; Corrieri et al., 2014).

A close relative of the PRP, the PPP, which though targets younger children, was evaluated in 2 studies reported in 4 included systematic reviews (Ahlen et al, 2015; Bastounis et al, 2016; Carnevale, 2013; Dray et al, 2017;). This school-based programme, also following CBT principles, is delivered over 8 x 80-minute sessions by psychology post-graduate students. It was found to have no significant impact on depressive symptoms (CDI) at 6-month follow up in one study, but the second study did report a decrease in anxiety and depressive symptoms at 6-month follow up (measured using the State-Trait Anxiety Inventory for Children and CDI; timing not reported). It is worth noting however that the effect size for the decrease in anxiety was very small.

Aussie Optimism Programme. The AOP has been reported across 5 systematic reviews (Ahlen, 2015; Bastounis et al, 2016; Corrieri, 2014; Dray et al., 2017; Waldron et al., 2018). This is a face-to-face school-based intervention building on the PRP and developed to help children and young people challenge negative thoughts and feelings about themselves, their current life circumstances and the future. Two trials involving children in grades 7 (age 12–13) and 11–12 (age 16–18) where the intervention was delivered by a teacher or a mental health professional in one hour sessions (10 sessions in one trial, 20 in another) reported no evidence of sustained benefit for anxiety or depression at 6 and 18-month follow up (measured using CDI, the Revised Children's Manifest Anxiety Scale and CBCL), although one trial did find a significant effect for internalising problems immediately post-intervention (Ahlen et al., 2015; Corrieri et al., 2014; Dray et al., 2017; Waldron et al., 2018).

A further development of the AOP, named the AOP-Positive Thinking Skills programme, aims to enhance the social and emotional learning skills of children over ten 1-hour sessions. The effectiveness of this programme in reducing/preventing children's emotional problems has been evaluated in a study of primary school-age children which found a significant reduction in depressive symptoms immediately post-intervention and at 6 and 18-month follow up, as measured with the CDI. No intervention effect was found for anxiety at any time point, based on the SCAS (Ahlen et al., 2015; Bastounis, 2016; Corrieri et al., 2014; Dray, 2017; Waldron, 2018).

Resourceful Adolescent Programme. The effect on emotional difficulties of the RAP and its derivatives have been investigated in 5 studies reported in 5 of the included systematic reviews (Ahlen et al., 2015; Carnevale, 2013; Corrieri et al., 2014; Dray et

al., 2017; MacKenzie and Williams, 2018). The RAP is based on cognitive behavioural and interpersonal approaches and was delivered in a classroom setting over 9–11 sessions of one-hour duration.

Dray et al. (2017) reviewed 2 versions of the RAP, the RAP-Kiwi (one study) and the RAP-Adolescent (2 studies), with very limited evidence reported for its long-term effectiveness. For RAP-Kiwi, although a significant effect was found on the Beck Depression Inventory II score immediately post-intervention, this was not sustained at 6, 12 and 18-month follow up. Similarly, for the RAP-Adolescent, an initial significant reduction in depressive symptoms post-intervention was not sustained at 12-month follow up (assessed using the Reynolds Adolescent Depression Scale – version 2 and the Children's Depression Inventory) (also included in Ahlen et al., 2015; Corrieri et al., 2014).

Carnevale (2013) reviewed one further study evaluating RAP. In this study, RAP was delivered over 11 x 50-minute sessions by teachers or a school counsellor and found no evidence of effect at 10 months, 1 year and 3 year follow up (RCMAS and Affective Control Scale).

We found many more individual-level interventions evaluated on their impact on emotional difficulties. We will only describe here those that showed some degree of effectiveness. In their systematic review, Dray et al. (2017) report 7 programmes targeting children in primary school that showed some degree of benefit, albeit often only in the short term. One exception was the Lessons for Living: Think Well Do Well intervention, a 10 lesson CBT-based intervention delivered during usual PHSE lessons by a psychologist or teacher. A significant intervention effect was found for anxiety symptoms measured with the SCAS post-intervention and at 6 months, and no differences were found between teacher-led and psychologist-led sessions (the same study was also reported in MacKenzie and Williams (2018)). The Master Mind Programme, a mindfulness education and training programme delivered over 20 x 15-minute daily lessons, found no main effect for anxiety, however a significant intervention effect was reported by gender, girls in the intervention group exhibiting lower teacher-rated anxiety symptoms based on the CBCL, as compared to girls in the control group at post-test. Finally, we note that PATHS is among the interventions for which Dray et al. (2017) highlighted no evidence of benefit on anxiety or depressive symptoms.

Dray et al. (2017) reported several more interventions for adolescents, a number of which showed some effect on anxiety symptoms immediately post-intervention but little evidence of improvement in depressive symptoms. The MoodGYM project is an example: this is a CBT-based programme delivered over 5 weekly modules of 20–40 minutes each and was found to lead to a significant reduction in anxiety symptoms

post-intervention and at 6-month follow up (RCMAS), although no effect was found for depressive symptoms (CES-D).

The Wellbeing Therapy Programme, a psychological wellbeing programme delivered over 6 to 8 weekly 2-hour sessions was evaluated in 3 studies reviewed by Dray et al. (2017). Two found no evidence of effect for anxiety or depressive symptoms (King's Sarcoidosis Questionnaire and Symptoms Questionnaire; these same studies are also reported by Ahlen, 2015; Carnevale, 2013; and Corrieri et al., 2014). A third study reported a significant reduction in Symptoms Questionnaire anxiety score at 6-month follow up, but no significant reduction in depression scores. By contrast, investigation of the effectiveness of the Optimism and Life Skills Programme, an 8-week programme adapted from the PRP, found that whilst no intervention effect was seen post-intervention, a significant reduction in depressive symptoms measured using the CDI was noted at 6-month follow up (also reported in Bastounis et al., 2016).

We have already encountered the LARS&LISA in the previous section. Dray et al. (2017) reviewed 3 studies that assessed emotional difficulties, and the programme showed some evidence of positive effects on depressive symptoms when assessed across all 3; however, only one study found sustained improvement at 6-month follow up, measured using the SBB-DES (the other 2 studies reported no effect at 6, 8 or 12-month follow up, using the CES-D and the CDI).

Ahlen et al. (2015) surveyed 12 further interventions, mostly for adolescents: 6 named programmes and 6 un-named. Some evidence of mostly short-term effect on emotional problems was found for 4 of the named interventions, but no effect, or even a slight worsening of symptoms was reported for the other 2. The 4 successful programmes are the following. The Norwegian Universal Preventive Programme for Social Anxiety is a cognitive-behavioural intervention to prevent anxiety led by mental health professionals and was evaluated using the Social Phobia and Anxiety Inventory for Children, Screen for Child Anxiety Related Emotional Disorders and the Short Mood and Feelings Questionnaire. A decrease in anxiety and depressive symptoms was found post-intervention but no longer-term follow up was reported. Problem-Solving for Life is also a cognitive-behavioural intervention to prevent depression although led by teachers. A decrease in depressive symptoms as measured using the Beck Depression Inventory was found post-intervention but this had decreased to a very small effect size at follow up (also reported in Carnevale, 2013; Corrieri et al, 2014). The internet-based variant of the MoodGYM intervention led to a decrease in anxiety and depression both post-intervention and at follow up. LISA-T is a cognitive-behavioural intervention to prevent depression led by mental health professionals. Whilst one evaluation of this programme reported a decrease in CES-D measured depression, a second study found no evidence of effect on SBB-DES measured depression (also reported in Carnevale, 2013; Corrieri et al, 2014).

The 6 un-named (in research only) interventions included 3 cognitive interventions (one self-instruction intervention, led by teachers; 2 face-to-face led by mental health professionals) and 3 cognitive-behavioural interventions (2 led by mental health professionals; one led by teachers). The 3 cognitive interventions were associated with a decrease in anxiety (all 3) and 2 with a decrease in depressive symptoms (2 that targeted depression). Two of the 3 cognitive behavioural interventions were also found to be effective immediately post-intervention but with a much smaller effect size at follow up. A third cognitive behavioural intervention, led by mental health professionals, was associated with an increase in anxiety and depression at follow up.

Langer et al. (2015) documented 3 successful mindfulness-based interventions. One of them is a variant of the Mindfulness Based Stress Reduction. In one study, the intervention consisted of 8 weekly sessions of breathing exercises, lasting 100 minutes each; the intervention was shown to have statistically and clinically significant effects on symptoms of depression, both at completion of the programme and at 6-month follow up (bespoke measure). The second is a more intensive mindfulness programme, comprising a combination of 2 mindfulness interventions: Meditation Flow and Acceptance and Commitment Therapy. This combined programme consisted of 10 weekly sessions lasting 1.5 hours, plus 40 minutes of practice at home, and it was found to lead to decreased anxiety levels at post-test (State-Trait Anxiety Inventory). The third is Meditation for the Awareness of Breathing, which involves daily 10-minute meditation practice, and was found to reduce hostility at post-test but not after 3 months (Cook-Medley Hostility Inventory).

Carnevale (2013) reported on 2 more successful programmes for adolescents. One programme is the Interpersonal Psychotherapy Adolescent Skills Training (IPT-AST), which in the study reviewed was compared with the Brief Cognitive-Behavioural Depression Prevention Programme. Both interventions comprise 8 x 90-minute weekly sessions delivered by psychology graduates (supervised by senior clinicians) during usual curriculum. At 6-month follow up both interventions are reported to demonstrate a reduction in scores on the CDI (no control group was present). The second is the Teaching Kids to Cope programme, which covered self-esteem, stress and coping over 10 x 45-minute sessions delivered by nurses with mental health experience. Scores on the Reynolds Adolescent Depression Scale indicated a reduction in depressive symptoms at 6 months, which reduced further at 12-month follow up.

Finally, it is worth noting a pair of individual interventions that we have encountered earlier, which were also evaluated on their effect on emotional difficulties: SET (O'Reilly et al., 2018) and Zippy's Friends (Fenwick-Smith et al., 2018). Findings in regard to emotional difficulties showed that SET led to improved internalising problems at 3-year follow up as based on adolescents' self-reports. As for Zippy's Friends, positive changes in emotional difficulties were found in one study, but not in the other. There is no detailed information about long-term effectiveness and the outcome measures employed.

Family-level interventions

Dray et al. (2017) reviewed one study evaluating the Strengthening Families Programme, which involves both individual and family components. The main goal of this programme is to reduce substance use in adolescents by improving child–parent interaction and communication, but the study considered also gauged internalising problems via the CBCL and Youth Self Report questionnaires. In the study, the intervention was delivered in 6 sessions where both parents and children took part separately, plus an additional 7 sessions with parents and children together (60-minute sessions, 19 hours in total). No effect on internalising symptoms was found, but it was reported that the control condition, with which the treatment group was compared, deteriorated.

Two studies in Dray et al. (2017) investigated the FRIENDS for Children programme, a variant of FRIENDS which includes both individual- and family-level components. The first study compared psychologist-led and teacher-led sessions and found significant reductions in anxiety symptoms (SCAS) for both intervention groups at post-intervention compared with standard curriculum lessons. A significant increase in depressive symptoms (CDI) for teacher-led intervention group was found, but no difference was found in depressive symptoms for the other 2 groups. In the second study a significant intervention effect was reported for anxiety symptoms at 12-month follow up and for depressive symptoms for 6- and 12-month follow up (measured using the SCAS, German version, and RCADS). Whilst an immediate intervention effect for anxiety symptoms was reported for younger children (9–10 years) at post-intervention, this was not sustained at 6 and 12 months. A delayed intervention effect for anxiety symptoms was found for older children (11–12 years) at 6 and 12-month follow up.

Waldron et al. (2018) reviewed 5 trials investigating FRIENDS for Children. Of these 5 trials, 4 found a significant reduction in anxiety symptoms (not specifically described for the fifth). One trial moreover included a 24 and 36-month follow up period and found a sustained benefit for younger children but not for older children (ages not reported). Higgins and O'Sullivan (2015), in a systematic review entirely focused on FRIENDS for Children, reviewed 2 further trials, all demonstrating positive effects on anxiety symptoms at post-intervention. The commonly-used outcome measures, including the SCAS, RCMAS and CBCL, were employed in all these trials.

Finally, Carnevale (2013) surveyed a family-level variant of the RAP. This variant consists of 11 sessions for adolescents (50 minutes each) delivered as part of school curricula by either teachers or psychologists, plus 10 sessions for parents (1 hour per week) in which they receive education and training. The findings from the study reviewed by Carnevale (2013) showed a decrease in depressive symptoms based on

the Reynold's Adolescent Depression Scale at 10-month follow up, but not based on other measures of depression (eg CDI).

School-level interventions

We only found one example of an intervention evaluated on measures of emotional difficulties that included a school-level component. It is an intervention for adolescents surveyed by O'Reilly et al. (2018), which also included family-level components, and which we have already encountered in the previous section: MindMatters. Very few details on the findings from the study assessing MindMatters are reported, positive changes in mental health were nonetheless noted, albeit with no reference to their durability.

Promoting subjective wellbeing

We identified 17 interventions that were assessed for their impact on subjective wellbeing. 8 were individual-level interventions, only 1 included a family-level component, and a further 9 included a school-level component.

Individual-level interventions

We did not find any individual-level interventions specifically targeting primary school children, but we did find in the included systematic reviews mixed studies targeting both primary and secondary school students. Rafferty et al. (2016), for instance, surveyed the Michigan's Exemplary Physical Education Curriculum. This was a physical education Intervention to teach primary and secondary school students motor skills and the benefits of physical activity, which took place twice a week for 2 years. Based on PCS scores, however, no effect was found on perceived self-competence, in particular physical competence .

We found several interventions targeting adolescents only. Mackenzie and Williams (2018) documented 3, one of which successfully led to improvements in subjective wellbeing. The first is the Mindfulness in Schools Programme, which, as the name suggests, involves mindfulness practice and learning to focus attention on immediate experience. With its 9 weekly sessions delivered by a teacher, this intervention led to an increase in the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS), albeit not at post-test but at 3-month follow up. Langer et al. (2015) reviewed the same evaluations of the Mindfulness in Schools Programme, reporting the same findings, but they also noted that the amount of practice young people had in their own time moderated the results.

Langer et al. (2015) reported 2 further examples of successful interventions targeting secondary school students, both of which however require some effort and persistence

from adolescents to fully pay off. The first is the Learning to Breathe Programme, of which the authors review 2 evaluations, only one monitoring subjective wellbeing. In the study in question, the intervention consisted of 6 meditation sessions twice a week, supplemented by meditation practice in class and at home. Based on the Positive and Negative Affect Scale, young people taking part in the programme reported better mood and increased feelings of relaxation, calm and self-acceptance. The second is the Mindfulness-based Stress Reduction programme, of which Langer et al. (2015) reviewed 2 evaluations, again only one of which assessed subjective wellbeing. In this study, the intervention consisted of breathing exercises carried out during 4 sessions per week lasting 40 minutes, plus 8 minutes of daily practice at home. Based on the WEMWBS, subjective wellbeing improved, but only among those who regularly practiced at home. In neither of the studies reported in Langer et al. (2015) were timings of outcome measurement reported.

O'Reilly et al. (2018) surveyed one further anonymous intervention for adolescents: a stress management programme. Delivered by a psychotherapist, this stress management programme was part of a broader health promotion programme. Those who took part in the intervention maintained improved sense of wellbeing over the school year, whereas those in the control group deteriorated. O'Reilly et al. (2018) do not provide information on how outcomes were measured in the primary studies.

Family-level interventions

We only identified one family-level intervention to promote emotional wellbeing, which in fact involved the individual and the school as well as the family, and which only targeted secondary school students. This is an un-named, multi-component, lifestyle intervention reported by Rafferty et al. (2016), consisting of classroom-based physical activity and healthy eating sessions implemented over 10 months, which also involved outreach to parents and optional training for teachers. The study assessing this programme used the Physical Self-Perception Profile for Children to measure the impact on young people's self-image. Results showed no significant improvement in the way adolescents who participated in the programme saw themselves.

School-level interventions

Rafferty et al. (2016) is the only systematic review we found that included school-level interventions to promote emotional wellbeing, albeit all being individual-level as well. The authors surveyed 7 such interventions, of which only one may be considered effective, at least in the short term. KISS is a multi-component intervention designed to increase physical activity during school, school breaks and at home every day for 1 year, targeting both children and adolescents. From scores in the Children Health Questionnaire, an improvement in psychosocial quality of life was found, but only

among first graders. This improvement was however not maintained in a 3-year follow up.

All the other 6 interventions reviewed by Rafferty et al. (2016) did not show any sign of effectiveness at all. These are: School-based Train-the-trainers Accessibility of Resources, which involved training teachers and students in skipping; Active Programme Promoting Lifestyle in Schools, which consisted of developing and delivering school plans to promote physical activity and healthy eating via teacher training and modification of school meals over 1 year; an un-named programme in which children were prompted to play in either the school field or the playground during school breaks; Healthy Buddies, which is a school-based lesson programme (23 hours per week over 21 weeks) covering physical activity, healthy diet and body image; the Stockholm County Implementation Programme, which is also a school-based intervention addressing diet, physical activity and self-esteem taking place over 2 years; and Lunchtime Enjoyment and Activity and Play, which involved playing with recycled materials during breaks in school.

An example of effective school-level intervention (again, with some individual-level component) is an intervention based on yoga sessions, 35-minutes long and delivered once or twice per week as part of the regular physical education curriculum at school (O'Reilly et al., 2018). Sixty-nine per cent of participants reported that yoga helped them improve their mood at the end of the programme, although no follow up was conducted.

References

- Ahlen, J., Lenhard, F., & Ghaderi, A. (2015). Universal prevention for anxiety and depressive symptoms in children: A meta-analysis of randomized and cluster-randomized trials. *The Journal of Primary Prevention, 36*(6), 387-403.
- Bastounis, A., Callaghan, P., Banerjee, A., & Michail, M. (2016). The effectiveness of the Penn Resiliency Programme (PRP) and its adapted versions in reducing depression and anxiety and improving explanatory style: A systematic review and meta-analysis. *Journal of Adolescence, 52*(C), 37-48.
- Carnevale, T. (2012). Universal Adolescent Depression Prevention Programs: A review. *The Journal of School Nursing, 29*(3), 181-195.
- Corrieri, S., Heider, D., Conrad, I., Blume, A., König, H-H., & Riedel-Helle, S. G. (2014). School-based prevention programs for depression and anxiety in adolescence: a systematic review. *Health Promotion International, 29*(3), 427–441.
- Dray, J., Bowman, J., Campbell, E., Freund, M., Wolfenden, L., Hodder, R. K., ... Wiggers, J. (2017). Systematic review of universal resilience-focused interventions targeting child and adolescent mental health in the school setting. *Journal of the American Academy of Child & Adolescent Psychiatry, 56*(10), 813-824.
- Fenwick-Smith, A., Dahlberg, E., & Thompson, S. C. (2018). Systematic review of resilience-enhancing, universal, primary school-based mental health promotion programs. *BMC Psychology, 6*, 30.
- Franklin, C., Kim, J. S., Beretvas, T. S., Zhang, A., Guz, S., Park, S., Maynard, B. R. (2017). The effectiveness of psychosocial interventions delivered by teachers in schools: a systematic review and meta-analysis. *Clinical Child and Family Psychology Review, 20*(3), 333-350.
- Higgins, E., & O'Sullivan, S. (2016). "What Works": Systematic review of the "FRIENDS for Life" programme as a universal school-based intervention programme for the prevention of child and youth anxiety. *Educational Psychology in Practice, 31*(4), 424-438.
- Hutson, E., Kelly, S., & Militello, K. (2018). Systematic review of cyberbullying interventions for youth and parents with implications for evidence-based practice. *Worldviews on Evidence-Based Nursing, 15*(1), 72-79.

Langer, A., Ulloa, V. G., Cangas, A. J., Rojas, G., & Krause, M. (2015). Mindfulness-based interventions in secondary education: a qualitative systematic review. *Studies in Psychology, 36*(3), 533-570.

MacDonell, K. W., & Prinz, R. J. (2017) A review of technology-based youth and family-focused interventions. *Clinical Child and Family Psychology Review, 20*(2), 185-200.

MacKenzie, K., & Williams, C. (2018). Universal, school-based interventions to promote mental and emotional well-being: what is being done in the UK and does it work? A systematic review. *BMJ Open, 8*, e022560.

O'Reilly, M., Svirydzenka, N., Adams, S., & Dogra, N. (2018). Review of mental health promotion in schools. *Social Psychiatry and Psychiatric Epidemiology, 53*, 647-662.

Patalay, P., & Fitzsimons, E. (2016). Correlates of Mental Illness and Wellbeing in Children: Are They the Same? Results From the UK Millennium Cohort Study. *Journal of the American Academy of Child and Adolescent Psychiatry, 55*(9), 771-783.

Rafferty, R., Breslin, G., Brennan, G., & Hassan, D., (2016). A systematic review of school-based physical activity interventions on children's wellbeing. *International Review of Sport and Exercise Psychology, 9*(1), 215-230.

Waldron, S., Stallard, P., Grist, R., Hamilton-Giachritsis, C., (2018). The 'long-term' effects of universal school-based anxiety prevention trials: A systematic review. *Mental Health & Prevention, 11*, 8-15.