the social biobehavioural research group

# The impact of youth sector provision on mental health outcomes:

## A systematic literature review

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# Executive Summary

## Background and scope

This review was commissioned by the National Citizens Service Trust (NCST) and undertaken by University College London's Social Biobehavioural Research Group (UCL-SBB). Its overarching objective was to detail the evidence base of youth sector provision as it relates to mental health outcomes for young people, with secondary objectives to detail if different aspects if youth sector provision (i.e. length, location, if they are targeted or universal and the age ranges of young people they work with), impact on mental health outcomes.

## Main research question

Do youth sector provision activities and programmes impact on mental health, and if so, what outcomes?

## Methods and key definitions

This review focused on a broad cross section of youth sector provision as defined below and drew on a previous review, conducted by SQW, to help inform the search terms, search strategy and activity areas of focus. Youth sector provision was defined as activities and programmes, including youth clubs, detached youth work, residentials and outdoor learning, sports, arts, and cultural learning, skills and knowledge building outside of formal education, social and emotional skills development, social action and pastoral, mental health and wellbeing support outside of a clinical setting. Participation in these activities and programmes needed to be voluntary for it to meet inclusion criteria. In line with NCST and typical sector and government definitions of 'youth' it focused on young people between the ages of 11-25. This review also focused on studies with comparator groups (i.e. Randomised Control Trials [RCTs] or Quasi Experimental Designs [QEDs]) as this allowed for assessment of impact and represented higher standards of evidence on the evidence hierarchy. Mental health outcomes focused on mental ill health, and included improving symptoms from common mental health difficulties, such as depression and anxiety, as well as broader constructs often used in Child and Adolescent Mental Health Services (CAMHS) such as emotional and behavioural difficulties.

## Results

Overall, 25 studies detailing 28 activities and programmes met inclusion for this review. Studies were from a variety of countries with the majority from the United States, only 6 from the United Kingdom (UK), and others from a diverse range. The following were found under each of the six categories of youth provision detailed in the SQW review:

- 2 activities and programmes under 'mentoring, coaching and/or peer support'
- Six activities and programmes under 'residentials and camps'
- Five activities and programmes under 'sports and physical health',
- Two activities and programmes under 'music, arts, recreation and community activities',
- Two activities and programmes under 'Citizenship, Community Service and Volunteering', and
- One programme under 'Employment, skills and enterprise'.

***Do youth sector provision activities and programmes impact on mental health, and if so, what outcomes?***

Whilst the quality assessment for most studies was deemed as moderate (n= 18), in general, there were only a few studies within each category, meaning findings should be treated cautiously.

With the above caveats in place, there was evidence of the following:

- That **'music, arts, recreation and community activities' can positively impact on mental health outcomes**.
- That **universal** youth sector provision **activities and programmes positively impact on emotional and behavioural difficulties**.
- That **time limited activities can positively impact on internalising and externalising difficulties**.

There was also some evidence to suggest that universal youth sector provision activities and programmes may also help with depressive symptoms with three of four studies showing an impact, favouring the intervention group.

There was also tentative evidence to suggest:

That a residential focused on employment skills and enterprise reduced self-reported suicide attempts for marginalised young people. In this instance, Native Americans.

- That sports and physical health activities can help improve internalising and externalising difficulties, as well as peer problems
- That universal coaching and training impacts on emotional difficulties.

## Does youth sector provision have an impact on mental health? Discussion and implications of findings

These findings contribute to literature on what works for improving youth mental health, specifically exploring the context of youth sector provision. Based on this research only the category 'music, arts, recreation and community activities' can be said to potentially have an impact on mental health outcomes. However, specific programme details and components, such as whether the programmes are universal or targeted, as well as length of time appear to impact mental health outcomes in certain circumstances. Specifically, universal interventions impact on emotional and behavioural difficulties, as well as potentially depression, whilst time limited activities impacted on emotional and behavioural difficulties. The findings for 'music, arts, recreation and community activities' are in line with wider reviews where there is evidence of impact, but previous reviews have also cautioned over-interpretation due to the small number of studies. Similarly, findings on universal activities and programmes are supported by reviews of universal school-based interventions for tackling anxiety and depressive symptoms which produce small or modest effect sizes. This may also suggest that such youth sector provision activities and programmes are better suited to tackling such symptoms before young people become clinically symptomatic and therefore are 'immunising' or 'protecting' young people from later difficulties.

***Implications for Research***

However, when it comes to **research**, the **overall evidence base is underdeveloped**, which makes it difficult to draw robust conclusions about the impact of such activities and programmes. On top of this, the majority of activities and programmes were conducted outside the UK, and thus, the transportability of such interventions, and the effect of any adaptations on outcomes, needs to be carefully examined. **As such, there needs to be better investment, particularly in the UK when it comes to investigating youth sector provision activities, drawing on robust scientific methods**. Moreover, given the lack of longer term follow up, studies should aim to look at programmes over a year long period, to see if initial effects are sustained, or if a delayed impact occurs once young people have embedded the skills and opportunities the programmes provided them.

***Implications for Practice***

When it comes to **practitioners** and those involved with service design, a **solid understanding of the activity or programme is needed**. This would help address issues such as a lack of underlying theory or theory of change, as well as help researchers understand and record data on fidelity and dosage.

***Implications for Policy***

Whilst for **policy**, to increase the evidence base, there should be a **commitment from those investing in youth sector provision that there should be high quality, robust scientific evaluations** of such services, drawing on a RCT or QED design. Second, **as youth social prescribing is beginning to receive** both national and international **attention, policy makers should consider how best to include youth sector provision within this**, particularly as there is evidence of promise in social prescribing for youth mental health.

# Abbreviations

- BBBS – Big Brothers Big Sisters
- CAMHS – Child and Adolescent Mental Health Services
- EEC – Experiential Education Camp
- EFC – Empire Fighting Chance
- GMLK – Gum Marom Kids League
- GRS – Grassroot Soccer
- HOPC – Honest, Open, Proud-College
- IC – Integrated Didactic and Experimental Camp
- NCST – National Citizens Service Trust
- PICOS – Population, Intervention, Comparison, Outcomes and Study
- PTSD – Post Traumatic Stress Disorder
- QED – Quasi Experimental Design
- RC – Recreational Camp
- RCT – Randomised Controlled Trial
- T1D – Type 1 Diabetes
- UCL-SBB – University College London's Social Biobehavioural Research Group
- UK – United Kingdom
- VAWK – Voluntary Action with Kent

# Introduction

## Introduction by NCS Trust

**We commissioned University College London's Social Biobehavioural Research Group (UCL-SBB) to undertake a systematic review to build evidence on the impact of youth sector provision on mental health outcomes for young people.**

**Young people are facing a mental health crisis and today's young people have the poorest mental health of any age group in UK.[1] One in three (34%) young people aged 18–24 are reporting symptoms of 'common mental disorders' (eg anxiety and/or depression) and this figure raises to two in five (41%) for young women.[2]**

**We know that youth provision, including enrichment and non-formal learning, can positively impact young people's mental health and wellbeing through building confidence, self-esteem, social connection, and life skills.[3] It provides opportunities for the key drivers of young people's wellbeing: positive relationships with others, physical activity, having a good understanding of oneself, ability to maintain positive self-esteem, building confidence, and connection to the local environment and community.[4] However, a robust and comprehensive evidence base supporting the role of youth provision in mental health is missing, and thus the role of the the youth sector is often under-recognised in youth mental health support services and policy.**

**We commissioned this research from UCL-SBB to build a rigorous and comprehensive summary of the existing evidence base to understand what the existing evidence demonstrates, where future research is needed, and what this means for future policy and practice.**

### Objectives

The objectives of this review are to:

- Detail the evidence base of youth sector provision as it relates to mental health outcomes for young people.
- Detail if different aspects if youth sector provision (i.e. length, location, if they are targeted or universal and the age ranges of young people they work with), impact on mental health outcomes.

### Main research question

- Do youth sector provision activities and programmes impact on mental health, and if so, what outcomes?

### Sub research questions

- Does the length of time of youth sector provision activities and programmes impact on mental health outcomes?
- Does the location of youth sector provision activities and programmes impact on mental health outcomes?
- Is there a difference in mental health outcomes when youth sector provision activities and programmes are universal versus targeted?
- Is there a difference in mental health outcomes when youth sector provision activities and programmes are aimed at particular age groups?

[1] The Health Foundation (2024) What is happening to young people's mental health?
[2] Resolution Foundation (2024) We've only just begun Action to improve young people's mental health, education and employment
[3] Oberle, E., Xuejun, R.J., Kerai, S., Guhn, M., Schonert-Reichl, K.A., & Gadermann, A.M. (2020). Screen time and extracurricular activities as risk and protective factors for mental health in adolescence: A population-level study. Preventive Medicine, 141.
[4] Wellcome Trust, 'Active ingredients: The aspects of mental health treatment that make a difference' (2020)

# Methods

To ground this review within the context of the wider literature, a scoping exercise was undertaken to establish what published literature already existed. Key papers, including a review exploring youth sector provision (1), were identified and results shared with NCST. With direction from NCST, it was decided that an updated review, building on the work published by SQW (1) should be undertaken. Given NCSTs' interest in how youth provision impacts mental health outcomes, as well as the role of social prescribing5 as a mechanism for this, the context of this review would be to focus solely on mental health outcomes. This differs from the previous review, which explored mental health and wellbeing together, which means that the impact of youth sector provision on mental health as a sole construct is unclear. The research team produced a protocol which was approved by NCST. This was published on PROSPERO (CRD42024581435) on the 20th August 2024.

## Search terms and database searching

As this review was to build on the work undertaken by SQW (1), the researched team used the same search terms. However, an additional search term pertaining to mental health was added, as this was the focus of the review. The search terms are outlined in the appendix (S1). Searches were run from 1st January 2023 onwards (to build on the end date of the SQW review) up until 20th August 2024.

The research team included the following research databases available at University College London: PsycINFO, Embase, Medline, Cochrane Libraries, and ProQuest. Additional websites and data archives were searched and are outlined in Table 1 below.

***Table 1: Websites and data archives searched***

| | | | |
|---|---|---|---|
| The Joseph Rowntree foundation | University College London's Social Biobehavioural Research Group (UCL-SBB) | The Culture Health and Wellbeing Alliance | The British Library Social Welfare Portal |
| Barnardo's | The Health Foundation | The Wellcome Collection | The Anne Freud Centre |
| Nesta | The King's fund | Mind | Young Minds |
| NCVO | Social Care Online | The National Centre for Creative Health | The World Health Organisation |
| The Centre for Cultural Value | The Mental Health Foundation | The Institute for Volunteering Research | Breathe Arts Health Research |
| The Youth Endowment Fund | | | |

Lastly, the research team also requested individuals and organisations to send them any reports and studies they thought may be relevant. Requests for information went out in three organisational newsletters: NCST, the Social Prescribing Youth Network, and UCL-SBBs, as well as via UCL-SBB's social media account (i.e. X/ Twitter).

## Inclusion and exclusion criteria

Inclusion and exclusion criteria were developed in conjunction with NCST, using the SQW review (1) as a foundation. Key inclusion and exclusion criteria are outlined in Table 2 and follow the PICOS (Population, Intervention, Comparison, Outcomes, and Study) criteria.

[5]Social prescribing is a mechanism of care linking individuals to non-medical forms of support in their communities

***Table 2: Inclusion/exclusion criteria using the PICOS framework.***

| **PICOS framework** | **Justification** |
|---|---|
| Population – Youth provision activities and programmes focused on young people aged 11-25. | This demographic is the typical definition of 'youth' used by the Department for Culture, Media and Sport and NCST (as opposed to children). |
| Outcome – any outcome that is measuring actual or potential mental health symptoms. | As directed by NCST, this review has a focus on whether youth sector provision improves mental health. This will include measures associated with mental health symptoms (e.g. depression, anxiety) and service use.<br><br>Outcomes which do not directly look at mental health symptoms and service use (e.g. wellbeing) will not be included. This is because mental health symptoms and wellbeing are independent dimensions. It is possible for someone to have mental health symptoms and high levels of wellbeing (and vice versa) (2). |
| Intervention – any youth sector provision activity. Youth sector provision activities and programmes include: youth clubs, detached youth work, residentials and outdoor learning, sports, arts, and cultural learning, skills and knowledge building outside of formal education, social and emotional skills development, social action and pastoral, mental health and wellbeing support outside of a clinical setting. | These areas of inclusion were identified as part of the SQW review (1) after consultation with young people. Participation in these activities and programmes should be voluntary for it to meet inclusion criteria. |
| Comparison – any study with a comparator group. | Studies using comparator groups allow for assessment of impact and represent higher standards of evidence on the evidence hierarchy (3). |
| Study – studies that are written in English. Both 'white' (academic) and 'grey' (report) literature are suitable for inclusion. | The research team do not have resource for studies in other languages.<br><br>Given the area of this review, there may be reports which are suitable for inclusion (i.e. from third sector funded organisations) that have not been published in academic journals. |

## Study selection

The results from the database searches were extracted and combined in Rayyan (a software package for the management of systematic reviews) and duplicates were removed. Studies were screened and selected in two stages. In the first stage (title and abstract screening), three members of the research team independently screened 10% of the same articles and compared results. An excellent level of inter-rater reliability (k = 0.83) was achieved. The remaining titles and abstracts were then split among these three members to be screened. At the second stage (full text screening) two members of the research team screened 10% of the same articles and agreed on all articles to be included (k = 1.0). The lead team member involved in full text screening then completed this for the remaining studies. Studies in the SQW review (1) were also independently screened and those focusing on mental health outcomes included. The flow of information from searching databases through to final study inclusion is outlined in Figure 1.

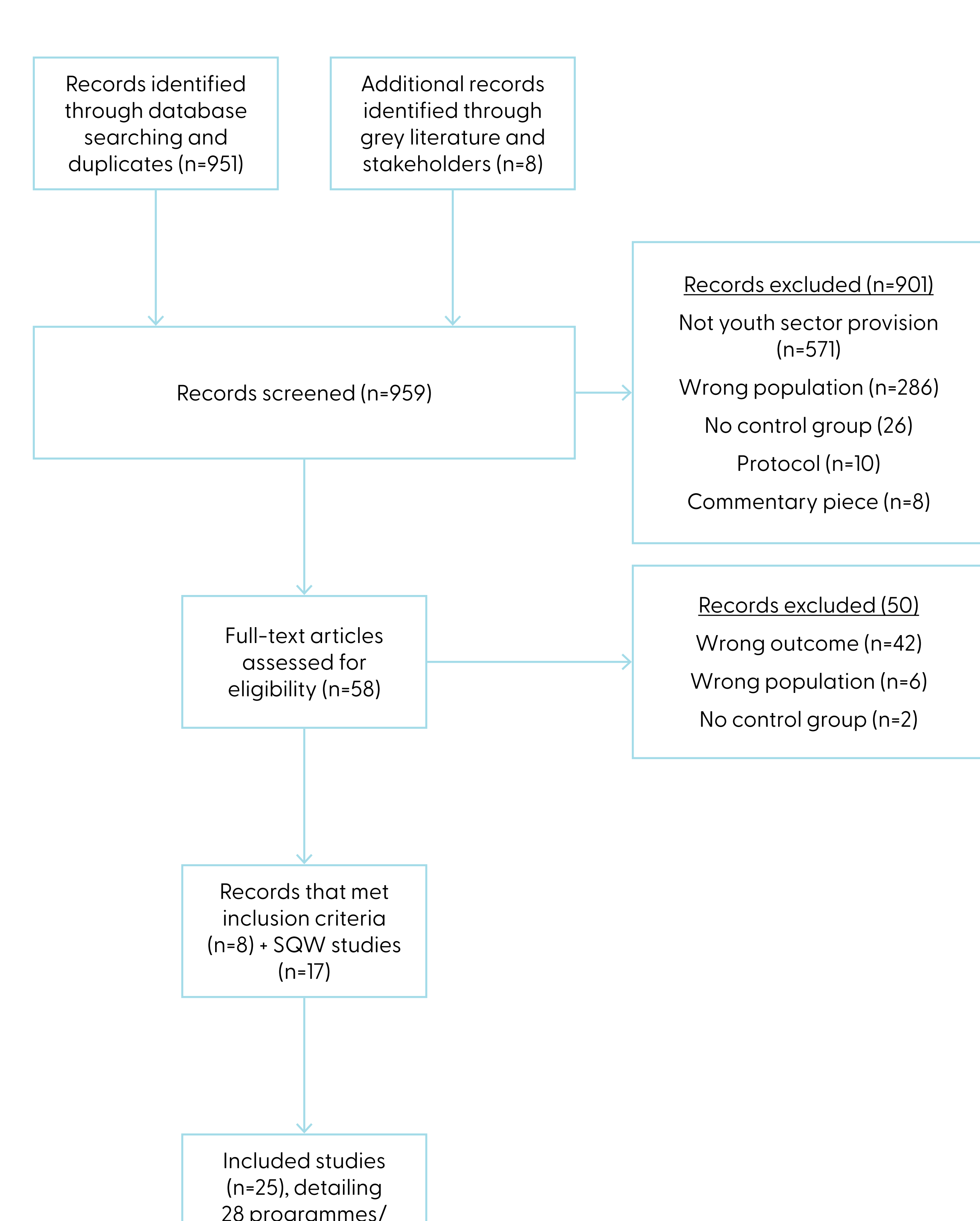
## Data extraction

Data were extracted from eligible studies by the lead member of the research team. A uniform data extraction form was created to record the following methodological information and results: study, country of origin, design, comparator details, setting, whether the youth sector provision activity was single or mixed gender, age, details of the intervention (i.e. universal or targeted, duration), which youth sector provision category this fell under (e.g. 'sports and physical health'), mental health outcomes recorded and who reported on these, and impact of the youth sector provision activity or programme.

## Data synthesis and analysis

Included studies were synthesised and the proportion of studies with certain characteristics (e.g. RCT design) summarised narratively. For the main research question, studies were grouped under each of the following youth sector provision headings: 'citizenship, community service and volunteering, 'music, arts, recreation and community', 'employment, skills and enterprise', 'mentoring, coaching and/or peer support', 'residentials and camps', and 'sports and physical health'. Where there were a number of studies and there were key differences in youth sector provision activities and programmes under each heading, these were separated out. In this instance, 'mentoring, coaching and/or peer support' were separated into: one on one mentoring, group mentoring, peer support, and coaching. Whilst 'residentials and camps' were separated into those which had a considerable outdoor element involved and ones which focused on employment and enterprise skills.

*Figure 1: PRISMA flowchart*



## Sub questions

To help analyse the included programmes for the sub questions, different categories were created which are outlined below.

## Length of time

For the sub-question pertaining to length of time, studies were separated into:

***Table 3: Length of time categories***

| Length of time | Further information |
|---|---|
| One-off activities and programmes | A standalone youth sector provision activity or programme occurring over a short time period (often less than 1 week) |
| Time limited activities and programmes | Activities and programmes which tended to be a specified number of weeks in duration |
| Regular activities and programmes | Ongoing activities and programmes which spanned longer than 6 months |

## Location

For the sub-question pertaining to location, studies were separated into:

***Table 4: Location categories***

| Location |
|---|
| Activities and programmes linked to the school premises |
| Activities and programmes in the community |
| Activities and programmes that are online |
| Activities and programmes that are outdoors or away from home |

## Who the intervention was aimed at

For the sub-question pertaining to who the intervention was aimed at, studies were separated into universal versus targeted interventions.

***Table 5: Universal versus targeted***

| Who the intervention is aimed at | Further information |
|---|---|
| Universal | There are no restrictions as to which young people can attend the activity or programme |
| Targeted | Activities and programmes were targeted at groups of young people based on specific sociodemographic or clinical characteristics |

## Age of the young people the intervention was aimed at

Lastly, for the sub-question pertaining to age, young people were separated into:

***Table 6: Age categories***

| Age | Further information |
|---|---|
| Younger adolescents | Those aged 11-14 years old |
| Older adolescents and young adults | Those aged 15 -25 years old |

Where mean age of participants was provided, this was used to select the category. Where mean age was not available, the advertised age range for the youth sector provision activities and programmes were used, providing it did not span both categories.

When information was available and studies reported an impact of the youth sector provision activity or programme, Cohens D (a measure of effect size) was calculated where possible. When youth sector provision activities and programmes spanned more than one area (e.g., 'mentoring, coaching and/or peer support', 'and physical health', these were grouped under the heading the research team felt the majority of the intervention fell under.

## Data synthesis and analysis

In addition to a summary of study methods and results, all studies were quality assessed using the Effective Public Health Practice Project Quality Assessment Method which is acceptable for examining both randomised and non-randomised studies (4). This enabled the research team to quality assess studies on the following domains: selection bias, study design, confounding variables, blinding, data collection methods, and withdrawal and drop out. The full quality assessment for each study is presented in the Appendix (Table A0).

# Results

## Overview of included activities and programmes

Overall, 25 records detailing 28 activities and programmes met inclusion for this review. Full study characteristics are detailed in Table 7.

## Table 7: Overview of included studies and youth sector provision programmes

| Author, year | Country | Design | Control | Setting | Gender | Age range (mean) | Ethnicity (% largest category) | Intervention | Youth Sector Category | Universal vs Targeted | Length of Activity/ Programme | One-off/ Regular | Outcome | Questionnaire | Outcome reporter |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bhatia, 2023 | India | RCT | Active control: livelihood intervention only (part intervention) | Community | Female only | Aged 10-19 (M = not specified) | Ethnicity unspecified - 98% from Hotribe | 3 components: (1) participatory adolescent groups, (2) youth leadership activities, (3) livelihood promotion | Mentoring, coaching and peer support AND Employment, skills and enterprise | Targeted: Female | Monthly for 33 months | Regular | Internalising and externalising difficulties | Brief Problem Monitor-Youth | Unclear - adult (parent or teacher?) |
| Chen, 2022 | Taiwan | RCT | Active control: health education | Community | Mixed | Aged 10-19 (M = 17.07) | Not broken down but specified as Chinese and Taiwanese | Music group | Music, arts, recreation and community activities | Targeted - young people with parental attachment insecurity | A 40-min music session twice weekly for 10 weeks | Time limited | Internalising and externalising difficulties | Chinese version of the Youth Self-Report (C-YSR) | Young person |
| Chung, 2021 | Hong Kong | RCT | Active control: 2 days of leisure activities | Outdoors | Mixed | Aged 12-15 (M = 13.00) | Unspecified | Adventure based residential | Residentials and camps | Universal | A 2-day/1- night adventure-based training | One-off | Depressive symptoms | CES-D | Young person |
| Conley, 2020 | United States | RCT | Wait list control | Community (College) | Mixed | Age range unspecified (M = 20.8) | Mixed (White 68.6%) | Honest, Open, Proud–College - peer support group | Mentoring, coaching and peer support | Targeted: those with mental health difficulties | 3 weeks for 3 main lessons and then a booster 2-3 weeks later | Time limited | Anxiety symptoms | Generalized Anxiety Disorder Screener | Young person |
| | | | | | | | | | | | | | Depressive symptoms | Centre for Epidemiologic Studies Depression Scale for Children | Young person |
| Davis, 2024 | UK | RCT | Wait list control | At home (online) | Not specified | Aged 11-17 (M = not specified) | Unspecified | Home goals: 6 weekly online video chat sessions involving ½ hour of psychoeducation and ½ hour of physical activity | Sports and physical health | Targeted: those in Child and Adolescent Mental Health Services (CAMHS) | 6 weeks | Time limited | Depressive symptoms | Patient Health Questionnaire | Young person |
| | | | | | | | | | | | | | Anxiety symptoms | Severity Measure for Generalized Anxiety Disorder | Young person |
| DuBois, 2017 | United States | RCT | Active control: standard peer mentoring | Community | Mixed | Aged 10-16 (M = 12.19) | Mixed (50.5% Black or African American) | Peer mentoring scheme (Big Brothers, Big Sisters) | Mentoring, coaching and/or peer support | Targeted: YP at elevated risk for delinquency based on any of the following - family low-income status (participation in free or reduced lunch program or family receipt of public assistance), single-parent family, or parent incarcerated) | 1 year (though 35% end prior to this) | Regular | Youth problem behaviour (conduct subscale) | Strengths and Difficulties Questionnaire | Young person |
| Haddock, 2020 | United States | RCT | Active intervention: one to one mentoring | Community (after school) | Mixed | Age range not specified (M = 14.21) | Mixed (59% White American) | Group peer mentoring scheme (Campus Connections) | Mentoring, coaching and/or peer support | Targeted: At risk youth | 12 weeks for 4 hours per week | Time limited | Emotional and behavioural difficulties | Strengths & Difficulties Questionnaire | Parent/ guardian |
| | | | | | | | | | | | | | Anxiety symptoms | Revised Children's Manifest Anxiety Scale | Young person |
| | | | | | | | | | | | | | Depressive symptoms | Centre for Epidemiologic Studies Depression Scale for Children | Young person |
| | | | | | | | | | | | | | Internalising difficulties | Child Behaviour Checklist | Parent/guardian |

| Author, year | Country | Design | Control | Setting | Gender | Age range (mean) | Ethnicity (% largest category) | Intervention | Youth Sector Category | Universal vs Targeted | Length of Activity/ Programme | One-off/ Regular | Outcome | Questionnaire | Outcome reporter |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hanlon, 2009 | United States | QED | No intervention | After school (community) | Mixed | Aged 11-14 (M = 11.12) | African American (97.91%) | Mentoring, parental empowerment and community outreach services | Mentoring, coaching and peer support | Targeted: African American youth residing in high-risk urban areas | 4 days per week for 2.5-3 hours per day (average dose 77 days) | Regular | Internalising and externalising difficulties | Child behaviour checklist | Parent/guardian |
| | | | | | | | | | | | | | Internalising and externalising difficulties | Conners' Rating Scales–Revised (CRS-R) | Teacher |
| Heller, 2022 | United States | RCT | No intervention | Community | Mixed | Aged 14-21 M = 15.64 | Mixed (77% Black American | Professional development sessions throughout summer (Work ready) | Employment, skills and enterprise | Universal | 6 weeks at 20 hours per week | Time limited | Mental health service use | From social service records | Unclear |
| Herrera, 2023 | | | | Community | Mixed | Aged 9-14 (M = 11.41) | Mixed (40% White American) | Peer mentoring scheme (Big Brothers, Big Sisters) | Mentoring, coaching and peer support | Universal | 1 year (9-12 months of mentoring - 50% received at least 12 months) | Regular | Depressive symptoms | Short Mood and Feelings Questionnaire | Young person |
| | | | | | | | | | | | | | Emotional symptoms | Strengths & Difficulties Questionnaire | Parents/ guardian |
| | | | | | | | | | | | | | Conduct problems | Strengths & Difficulties Questionnaire | Parents/ guardian |
| | | | | | | | | | | | | | Hyperactivity | Strengths & Difficulties Questionnaire | Parents/ guardian |
| | | | | | | | | | | | | | Total difficulties | Strengths & Difficulties Questionnaire | Parents/ guardian |
| Kirkman, 2019 | UK | RCT | Wait list control | Community (after school?) | Mixed | Aged 16-19 | Unspecified | Envision | Citizenship, Community Service and Volunteering | Universal | 10 months | Regular | Anxiety symptoms | Bespoke (quality assessment framework) | Young person |
| Kirkman, 2019a | UK | RCT | Wait list control | Community (after school?) | Mixed | Aged 15-18 (M = unknown) | Unspecified | Voluntary Action with Kent | Citizenship, Community Service and Volunteering AND Mentoring, coaching and peer support | Universal | Unclear | Unclear | Anxiety symptoms | Bespoke (quality assessment framework) | Young person |
| Leathers, 2023 | United States | RCT | Wait list control | Community | Mixed | Aged 17-20 (M = 18.32) | Mixed (82% Black) | Adult Connections Team (ACT), an enhanced services intervention that involved outreach by a youth specialist and coordinated mentoring, job readiness training, and externship services | Mentoring, coaching and peer support AND Employment, skills and enterprise | Targeted: youth in foster care | 22 mins with course staff per month, 162 mins with mentor per month, 111 minutes with employment staff (average). Only 2% continued after 6 months | Time limited | Depressive symptoms | Centre for Epidemiologic Studies Depression Scale for Children | Young person |

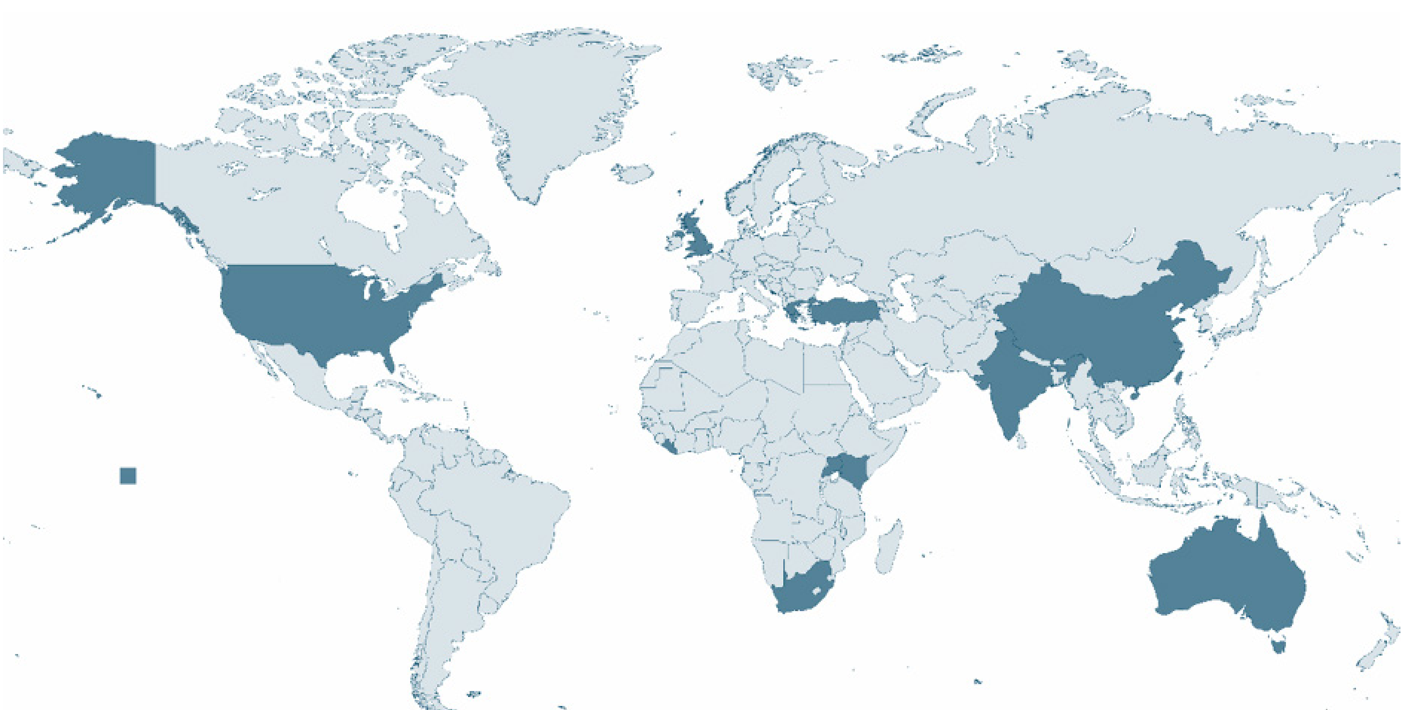
| Author, year | Country | Design | Control | Setting | Gender | Age range (mean) | Ethnicity (% largest category) | Intervention | Youth Sector Category | Universal vs Targeted | Length of Activity/ Programme | One-off/ Regular | Outcome | Questionnaire | Outcome reporter |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nathan, 2013 | Australia | QED | No intervention | Community (sports clubs, after school) | Mixed | Aged 13-18 (M =14.7 | Mixed (23% Afghan) | Football United: (i) Regular Saturday and after school,training, including coaching and mentorship, (ii) Skill capacity building, (iii) Community capacity building (iv) Raising awareness of Football United and community issues | Sports and physical health AND Mentoring Coaching and Peer Support | Targeted: young people from culturally diverse areas with high levels of refugee settlement | 10-week term ('regular' football activities). Other activities unclear | Time limited | Emotional symptoms | Strengths & Difficulties Questionnaire | Young person |
| | | | | | | | | | | | | | Hyperactivity | Strengths & Difficulties Questionnaire | Young person |
| | | | | | | | | | | | | | Peer problems | Strengths & Difficulties Questionnaire | Young person |
| Osborn, 2023 | Kenya | RCT | Active control: study skills | Community (after school) | Mixed | Aged 12-19 (M = 16.36) | Unspecified | A creative arts-literacy intervention: 5x 1-h sessions spaced 1 day apart, including between-session homework exercises | Music, arts, recreation and community | Universal | Five 1-h sessions spaced 1 day apart | One-off | Anxiety symptoms | Generalized Anxiety Disorder Screener 7 | Young person |
| | | | | | | | | | | | | | Depressive symptoms | Centre for Epidemiologic Studies Depression Scale for Children | Young person |
| Ozler, 2020 | Liberia | RCT | Active control: Girl Empower and No control: No intervention | Community | Female only | Aged 13-14 (M = not specified) | Unspecified | Girl Empower+, a life skills programme for young females. Additional components: (i) caregiver sessions, (ii) an individual savings account, (iii) caregiver incentive reimbursement for session attendance | Mentoring, coaching and/or peer support | Targeted: Female | 39 weeks | Regular | Depressive symptoms | Short Mood and Feelings Questionnaire | Young person |
| | | | | | | | | | | | | | Post Traumatic Stress Disorder (PTSD) risk | Children's Revised Impact of Event Scale | Young person |
| Pavarini, 2023 | UK | RCT | Wait list control | Online | Mixed | Aged 16-18 (M = 16.39) | Mixed (46% White British) | Interactive informative sessions delivered by peer support experts to the full group (50 youth), and hands-on activities, mostly delivered in small groups of 7 via breakout rooms or WhatsApp, led by a group facilitator (Uplift Peer Support Training) | Mentoring, coaching and/or peer support | Universal | 5 days (4 hours per day) | One-off | Emotional symptoms | Strengths and Difficulties Questionnaire | Young person |
| Richards, 2014 | Uganda | RCT | Wait list control and a no intervention control | Community | Mixed | Aged 11-14 (M = not specified) | Unspecified | Gum Marom Kids League (GMKL) using sport as a vehicle to promote physical fitness | Sports and physical health | Targeted: those living in a post conflict area | 11-weeks x 40 mins | Time limited | Mental health status (depression and anxiety-like symptoms) | Acholi Psychosocial Assessment Instrument | Young person |
| Rotheram-Borus, 2016 | South Africa | RCT | Wait list control | Community | Male only | Aged 18-25 (M = 21.9 | Unspecified | Coaching pre- and post-soccer, soccer practice 2x a week and vocational skills support (8 weeks electrical or mechanical engineering) | Mentoring, coaching and peer support AND Sports and physical health AND Employment, Skills and enterprise | Targeted: males who were unemployed | Unclear (soccer), 8 weeks (vocational course) | Time limited? | Depressive symptoms | Centre for Epidemiological Studies of Depression measure (CESD) | Young person |

| Author, year | Country | Design | Control | Setting | Gender | Age range (mean) | Ethnicity (% largest category) | Intervention | Youth Sector Category | Universal vs Targeted | Length of Activity/ Programme | One-off/ Regular | Outcome | Questionnaire | Outcome reporter |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Skoufa, 2023 | Greece | RCT | Active control: family vacation | Away from home | Mixed | Aged 7-18 (M = 12.65) | Unspecified | 10-day diabetes summer sports camp | Sports and physical health AND Residentials and camps | Targeted: children with Type 1 diabetes | 10-day diabetes summer sports camp | One-off | Depressive symptoms | Centre for Epidemiologic Studies Depression Scale for Children | Young person |
| Smith, 2022a | United States | QED | Prospective control: those going to camp the next term | Outdoors | Mixed | Aged 11-14 (M = not specified) | Mainly Black African Americans (84-100% depending on camp) | Experiential education camp [EEC], including a 2-night backpacking trip and adventure activities | Residentials and camps | Targeted: marginalised (Black or Latinx) middle school students | EE: 8 days long | One-off | Positive and negative affect | The Positive and Negative Affect Schedule | Young person |
| Smith, 2022b | United States | QED | Prospective control: those going to camp the next term | Outdoors | Mixed | Aged 11-14 (M = not specified) | Mainly Black African Americans (84-100% depending on camp) | Integrated and didactic education camp [IC] - Overnight camping and activities and skill development lessons during the day (8 lessons around respect, mindful communication etc.) | Residentials and camps | Targeted: marginalised (Black or Latinx) middle school students | IC: 8 days long | One-off | Positive and negative affect | The Positive and Negative Affect Schedule | Young person |
| Smith, 2022c | United States | QED | Prospective control: those going to camp the next term | Outdoors | Mixed | Mainly Black African Americans (84-100% depending on camp) | Mainly Black African Americans (84-100% depending on camp) | Recreational Camp [RC] - 45-min-long didactic lessons during the second and third days of the 4-day camp experience | Residentials and camps | Targeted: marginalised (Black or Latinx) middle school students | RC: 4 days | One-off | Positive and negative affect | The Positive and Negative Affect Schedule | Young person |
| Soyturk, 2020 | Turkey | RCT | No intervention | High school (during lessons, but voluntary) | Mixed | Aged 14/15 (M = not specified) | Unspecified | "Sports-related games" are games that ensure the active participation of all players, regardless of students' sports-related past or skill levels | Sports and physical health | Universal | A 10-week period, on 2 days per week for 80 minutes | Time limited | Internalising and externalising difficulties | Youth Self Report | Young person |
| Tingey, 2020 | United States | RCT | Active control: 3 sports field days each lasting 3-4 hours | Away from home and community | Mixed | Aged 13-16 (M = 14.38) | Native American | Residential summer camp, followed by 6 follow-on workshops (4-6 hours), held monthly. These explored topics such as problem-solving skills, financial literacy, entrepreneurship training, and small business design. They culminated in a presentation of business ideas to local business leaders in the hope of receiving start-up funds (Arrowhead Business group intervention) | Residentials and camps AND Employment, skills and enterprise | Targeted - 13-16 years old living on Fort Apache Indian Reservation and identified as Native American | Residential summer camp (10 lessons over 5 days), followed by 6 monthly follow-on workshops (4-6 h each) held in local well-equipped conference rooms | Time limited | Suicide attempt | Youth Risk Behaviour Survey | Young person |

| Author, year | Country | Design | Control | Setting | Gender | Age range (mean) | Ethnicity (% largest category) | Intervention | Youth Sector Category | Universal vs Targeted | Length of Activity/ Programme | One-off/ Regular | Outcome | Questionnaire | Outcome reporter |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Williams, 2018 | Australia | QED | No intervention (cross over control) | Outdoors | Mixed | Aged 14-16 (M = 14.87) | Unspecified | 7-day outdoor adventure program intended to promote positive adjustment in young people | Residentials and camps | Universal | 7 days | One-off | Anxiety symptoms | State-Trait Anxiety Inventory | Young person |
| | | | | | | | | | | | | | Depressive symptoms | enter for Epidemiologic Studies Depression scale | Young person |
| | | | | | | | | | | | | | Emotional and behavioural difficulties | Strengths & Difficulties Questionnaire | Young person |
| Wong, 2023a | UK | RCT | No intervention | Community (school) | Mixed | Aged 13-14 (M = not specified) | Mixed (64% White) | EFC: a 12-week group mentoring programme 'boxing-based mentoring' | Mentoring Coaching AND Sports and physical health | Targeted: Pupils whose behaviour is an area of concern and attendance is an area for concern | 12 weeks for 1 hour | Time limited | Emotional and behavioural difficulties | Strengths & Difficulties Questionnaire | Young person |
| Wong, 2023b | UK | RCT | Wait list control | Community (school) | Mixed | Aged 13-14 (M = not specified) | Mixed (88% White) | Educate Mentoring: 12-week mentoring rugby programme | Mentoring Coaching AND Sports and physical health | Targeted: young people at risk of or involved in crime | 12 weeks for 1 hour | Time limited | Emotional and behavioural difficulties | Strengths & Difficulties Questionnaire | Young person |

The majority of the activities and programmes originated in the US (n=11). This was then followed by the UK (n=6) and Australia (n=2). All other activities and programmes (n=9) were conducted each in one country. Of these 6 were conducted in a Low- and Middle-Income Country. Studies from included countries are outlined in Figure 2 below.

***Figure 2: Countries where studies came from***



Drawing broadly on the six categories of youth provision detailed in the SQW report (1), 12 activities and programmes fell under 'mentoring, coaching and/or peer support', six under 'residentials and camps', five under 'sports and physical health', two under 'music, arts, recreation and community activities', two under 'citizenship, community service and volunteering', and one under 'employment, skills and enterprise'. Interventions ranged from a five-hour arts literacy programme spread over five days, to mentoring programmes lasting over one year. To help summarise the evidence base both for overall category and per intervention the following key will be used:

***Evidence Key***

No evidence of positive impact

Evidence of a positive impact

Mixed or inconsistent impact

## Citizenship, community service and volunteering

***Area description***

Activities and programmes in this area focus on programmes which engage young people with their community or where they provided some form of community service or support (1). For this review, two programmes were included. Both were considered 'social action programmes' which engaged young people in making positive changes to their communities, based on local need.

***Programme 1: Envision (5)***

The first programme, Envision, was designed for young people aged 16-19 years old and worked with 130 schools in Bristol, Birmingham, and London. This social action initiative provided young people opportunities to address their own local community needs, such as knife crime, or race relations. This meant that each social action programme was unique to what each young person felt was important to address in their local community. On average, Envision lasted 10 months.

| | |
|---|---|
| Location | England |
| Length of programme | 10 months |
| Type of programme | Universal |
| Key aspects | Social action initiative based on local community need (e.g. knife crime, race relations) |
| Age range | 16-19 years old |
| Ethnicity | Mixed |
| Study design | RCT |
| Measures and outcomes | Anxiety – single item question |
| Follow up | Unclear |
| Quality assessment | Weak |
| Evidence of impact | No evidence of impact between the intervention and control group |

***Programme 2: Voluntary Action with Kent (VAWK: (5)***

The second programme was Voluntary Action with Kent (VAWK) which has since been rebranded to IMAGO. VAWK worked with individuals across the lifespan but had a particular focus on young people aged 15-18 and worked with 25 schools across Kent. VAWK's approach emphasised that young people should lead and develop social action projects that benefit their local communities. However, unlike Envision, there was also mentoring support available. Additionally, VAWK aimed to create a sustainable model by encouraging participation from younger age groups than those leading the initiatives. The length of involvement in VAWK was not specified.

| | |
|---|---|
| Location | England |
| Length of programme | Unclear |
| Type of programme | Universal |
| Key aspects | Social action initiative based on local community need alongside mentoring |
| Age range | 15-18 years old |
| Ethnicity | Mixed |
| Study design | RCT |
| Measures and outcomes | Anxiety – single item question |
| Follow up | Unclear |
| Quality assessment | Weak |
| Evidence of impact | Yes, evidence of impact favouring the intervention group |

## Music, arts, recreation, and community activities

***Area description***

Activities in this area cover music, the arts, community, and recreational activities that allow young people to engage with an activity they enjoy while also engaging socially with others (1). For this review, two programmes were included. One was considered 'music' and consisted of the programme 'Singing and Growing' (6), whilst the other fell under 'arts' and was a group arts-based literacy intervention called 'Pre Text' (7).

***Programme 1: 'Singing and Growing' (6)***

The programme 'Singing and Growing' was a targeted intervention for young people in Taiwan aged between 10-19 with parental attachment insecurity. In 'Singing and Growing' participants selected songs that were of interest to them and a personalised 50 song playlist was curated for them and others in their programme, linked to their music preferences. Amongst songs, there was an underlying theme regarding parental love. Each session consisted of listening to 5 minutes of non-curated music, before listening to the curated music selection for 10 minutes. This was then followed by 30 minutes of karaoke before asking participants to reflect for 5 minutes. The sessions took place in a community centre. The music group received two 40-minute sessions weekly for 10 weeks (resulting in 20 sessions in total).

| | |
|---|---|
| Location | Taiwan |
| Length of programme | Two 40-minute sessions weekly for 10 weeks |
| Type of programme | Targeted: young people with parental attachment insecurity |
| Key aspects | Karaoke to curated music with an underlying theme of parental love |
| Age range | 10-19 years old |
| Ethnicity | Mixed |
| Study design | RCT |
| Measures and outcomes | Internalising and externalising difficulties – Youth Self Report Measure |
| Follow up | 1 week |
| Quality assessment | Moderate |
| Evidence of impact | Yes, evidence of impact favouring the intervention group |

***Programme 2: 'Pre Text' (7)***

Conversely, 'Pre Text' was a universal, group arts-based literacy intervention in Kenya. It was flexible in nature meaning that a wide range of texts, including literary, technical and scientific works, could be incorporated into the programme. Each session began with a warm-up exercise and the distribution of "raw materials" including recycled paper, cardboard, pencils, crayons, and markers. Participants were then invited to practice an art activity that exploits the text as inspiration. This was then followed by time for reflection and the sharing of thoughts and feelings by group participants. Each session lasted for 1 hour after school, spaced one day apart, for 5 days.

| | |
|---|---|
| Location | Kenya |
| Length of programme | 1 hour after school, spaced one day apart, for 5 days |
| Type of programme | Universal |
| Key aspects | Arts-based literacy intervention |
| Age range | 12-19 years old |
| Ethnicity | Mixed |
| Study design | RCT |
| Measures and outcomes | Anxiety symptoms – the Generalized Anxiety Disorder Screener 7<br>Depressive symptoms – Center for Epidemiologic Studies Depression Scale for Children |
| Follow up | 1 week |
| Quality assessment | Moderate |
| Evidence of impact | Yes, evidence of impact favouring the intervention group |

## Employment, skills and enterprise

***Area description***

Activities and programmes in this area focus on developing young peoples' knowledge, skills, and confidence in relation to business, entrepreneurship, and employment (1). The programme included was 'Work Ready' (8), described further below.

***Programme 1: 'Work Ready' (8)***

'Work Ready' was a universal summer youth employment programme aimed at young people aged 14-21 in the United States. It consisted of a 6-week course, averaging 20 hours per week, where participants were put in contact with local agencies and provided with one of three program models: (i) service learning to address a community problem, (ii) work experience with skill development and ongoing adult interaction, or (iii) an internship that included professional development and adult mentoring. Professional development activities were left up to providers, so they varied considerably in structure and content, ranging from developing business models to sexual health education. Participants were made aware of 'Work Ready' via schools.

| | |
|---|---|
| Location | United States |
| Length of programme | 6 weeks at 20 hours per week |
| Type of programme | Universal |
| Key aspects | One of three programme models: i) service learning to address a community problem, (ii) work experience with skill development and ongoing adult interaction, or (iii) an internship that included professional development and adult mentoring |
| Age range | 14-21 years old |
| Ethnicity | Mixed |
| Study design | RCT |
| Measures and outcomes | Mental health service use – using receipts from social services for mental health support |
| Follow up | Unclear |
| Quality assessment | Moderate |
| Evidence of impact | No evidence of impact between the intervention and control group |

## Mentoring, coaching and/or peer support

***Area description***

Activities and programmes in this area focus on support networks for young people and/or on the teaching of new skills. The mentoring could be from adults or peers, be as part of a group, or one on one (1). For this review, 12 youth sector provision activities and programmes were included. These are outlined in Table 7.

***Programme activity details***

To aid understanding, youth sector provision activities and programmes have been split into the following subcategories depending on their delivery approach: (i) one on one mentoring, (ii) group mentoring, (iii) peer support, and (iv) coaching. These are explored further below.

## One on one mentoring

Three programmes focused predominantly on one on one mentoring (9–11), and of these, two were underpinned by the 'Big Brothers Big Sisters (BBBS)' approach (9,10).

***Programme 1: 'BBBS America' (10)***

'BBBS America' is a universal programme aimed at young people aged 9-14 in the United States. Once young people signed up to participate, they were matched with mentors based on gender. Mentors and mentees committed to meeting with each other at least three times a month, with each contact lasting at least two hours. During sessions, mentors facilitated youth to engage in activities they enjoyed and drew on techniques such as behavioural activation. Contact could be in person (in the community), over the phone, or by email, and mentors could also engage with family members in addition to the young person. The relationship between mentor and mentee was expected to last for 18 months.

| | |
|---|---|
| Location | United States |
| Length of programme | 6 weeks at 20 hours per week |
| Type of programme | Universal |
| Key aspects | Mentors facilitate youth to engage in activities they are interested in |
| Age range | 9-14 years old |
| Ethnicity | Mixed |
| Study design | RCT |
| Measures and outcomes | Depressive symptoms – the Short Mood and Feelings Questionnaire<br><br>Emotional difficulties, conduct problems, hyperactivity and total difficulties – the Strengths and Difficulties Questionnaire (parent version) |
| Follow up | 12 months |
| Quality assessment | Moderate |
| Evidence of impact | Yes, evidence of impact favouring the intervention group |

***Programme 2: 'Step-It-Up-2-Thrive' (9)***

The next programme was the other adapted BBBS programme, named 'Step-It-Up-2-Thrive', which was also implemented in the United States. It incorporated the BBBS mentoring element, but also drew on an approach known as the Selection, Optimization, and Compensation (SOC) framework for intentional self-regulation (12) and targeted individuals aged 10-16 at elevated risk for delinquency. Match support specialists matched mentors and mentees. Following allocation, mentors facilitated guided discussions and activities for young people focused on their goals and different aspects of the thriving model (e.g., sparks identification and exploration). Additionally, mentoring was further supplemented by parent briefings on the thriving model and culminated in a 1-year anniversary meeting with all mentors, mentees and parents/guardians being invited. Mentoring took place in the community and lasted 12 months.

| Location | United States |
|---|---|
| Length of programme | 12 months |
| Type of programme | Targeted: YP at elevated risk for delinquency based on any of the following – family low-income status (participation in free or reduced lunch program or family receipt of public assistance), single-parent family, or parent incarcerated |
| Key aspects | Mentors facilitated guided discussions and activities for young people focused on their goals and different aspects of the thriving model (e.g., sparks identification and exploration) |
| Age range | 10-16 years old |
| Ethnicity | Mixed |
| Study design | RCT |
| Measures and outcomes | Youth problem behaviours – Strengths and Difficulties Questionnaire (conduct subscale) |
| Follow up | 15 months |
| Quality assessment | Moderate |
| Evidence of impact | No evidence of impact between the intervention and control group, however, this study used an active control of peer mentoring |

***Programme 3: 'Adult Connections Team' (11)***

The last one on one mentoring scheme was the 'Adult Connections Team' programme, a targeted intervention for those at risk of difficulties leaving foster care aged between 17-20 in the United States. The programme was split into two parts: (i) mentoring, and (ii) a job readiness programme. Similar to the mentoring programmes previously mentioned, youth were matched with mentors, however more preference categories were considered, going beyond gender, to include additional aspects such as educational background. Mentors committed to meeting with their mentees for at least 12 months. The job readiness program incorporated an employment specialist and provided: (i) the opportunity to learn soft skills needed for employment in areas of interest to the young person through a 20-hour job readiness training program, and (ii) a placement to gain job skills while receiving ongoing support or help with obtaining employment in an area of interest to the young person.

| | |
|---|---|
| Location | United States |
| Length of programme | 12 months |
| Type of programme | Targeted: young people in foster care |
| Key aspects | Mentors supporting young people and connecting them to sources of support they may need |
| Age range | 17-20 years old |
| Ethnicity | Mixed |
| Study design | RCT |
| Measures and outcomes | Depressive symptoms – Center for Epidemiologic Studies Depression Scale for Children |
| Follow up | 12 months |
| Quality assessment | Moderate |
| Evidence of impact | No evidence of impact between the intervention and control group |

## Group mentoring

Five programmes focused on group mentoring (13–17), and all were targeted at specific groups of young people.

***Programme 1: 'Campus Connections' (13)***

'Campus Connections' was a programme for at-risk adolescents (age and risk unspecified) drawing on an intentional multi-level mentoring community facilitated by experienced mentors and family therapists. 'Campus Connections' was based in the United States. Mentors and Mentees were matched taking into account age and gender. Each group consisted of four mentees and one mentor. Mentors were undergraduate university students who created an environment conducive for positive youth development. The Campus Connections model promoted positive relationships with others, by including prosocial activities, and encouraged the development and use of life skills in community settings, so young people could gain a sense of belonging and mattering, develop social skills and confidence, and realise leadership skills. Mentees were expected to attend Campus Connections for 4 hours per week in the evenings for 12 weeks.

| | |
|---|---|
| Location | United States |
| Length of programme | 4 hours per week in the evenings for 12 weeks |
| Type of programme | Targeted: young people at-risk (risk unspecified) |
| Key aspects | Mentors promoted positive relationships with others and use of life skills |
| Age range | Age unspecified |
| Ethnicity | Mixed |
| Study design | RCT |
| Measures and outcomes | Emotional and behavioural difficulties – Strengths and Difficulties Questionnaire<br>Anxiety symptoms – Revised<br>Children's Manifest Anxiety Scale<br>Depressive symptoms – Center for Epidemiologic Studies Depression Scale for Children<br>Internalising behaviours – Child Behavior Checklist |
| Follow up | 12 weeks |
| Quality assessment | Moderate |
| Evidence of impact | No evidence of impact between the intervention and control group, however a similar active control was used, and improvements were seen within both groups |

***Programme 2: After school mentoring for African American youth (14)***

Another programme focused on an after-school peer mentoring scheme in the United States. This unnamed programme targeted African American youth aged 11-14 residing in high-risk urban areas. Three components were included within the programme: (i) structured group mentoring, (ii) parental empowerment and support services, and (iii) community outreach services. Group mentoring was delivered by two adult role models who provided educational support, guidance, companionship, and emotional support in group mentoring sessions. Activities involved remedial education, consideration of career opportunities, the fostering of an appreciation of African American cultural heritage, and the provision of recreational/social activities designed to increase social skills and creative/artistic expression. Mentoring lasted 4 days per week for 2.5 to 3 hours each day. For component (ii) parental support and empowerment, the principal way of bringing parents together was during family gatherings, so staff could determine the needs and aspirations of the family. Lastly, community outreach services promoted the involvement of the youth and their parents in community activities and the use of community resources and services.

| Location | United States |
|---|---|
| Length of programme | 4 days per week for 2.5 to 3 hours each day (total length unspecified, however the average duration for participants was 77 days) |
| Type of programme | Targeted: African American youth residing in high-risk urban areas |
| Key aspects | Mentors provided educational support, guidance, companionship, and emotional support in group mentoring sessions |
| Age range | 11-14 years old |
| Ethnicity | African Americans |
| Study design | Quasi-experimental design (QED) |
| Measures and outcomes | Internalising and externalising difficulties – Child behaviour checklist<br><br>Emotional and conduct difficulties Conners' Rating Scales–Revised (CRS-R) (teacher reported) |
| Follow up | 12 months |
| Quality assessment | Moderate |
| Evidence of impact | No evidence of impact between the intervention and control group |

***Programme 4: 'JIAH Trial' (16)***

Similar to 'Girl Empower+', another unnamed programme, examined in the JIAH trial, targeted female participants in India. However, the age range in this group mentoring programme was wider as it was aimed at those aged 10-19. This programme, consisted of three components: (i) participatory adolescent groups facilitated by yuva saathi ("friend of youth") who were aged 20-25, (ii) youth leadership activities, and (iii) livelihood promotion. Topics covered in participatory adolescent groups included adolescents' own needs and expectations, nutrition, health, mental health, and violence. Youth leadership activities focused on young people developing and leading activities for other young people. Whilst livelihood promotion focused on training on farming and environmental management, with the aim of giving the participants practical skills and improving food insecurity. Participatory adolescent groups took place monthly for 33 months, whilst youth leadership activities took place every 2 months, and livelihood promotion every 3 months.

| Location | India |
|---|---|
| Length of programme | 33 months |
| Type of programme | Targeted: Females |
| Key aspects | Mentoring around own needs and expectations, nutrition, health, mental health and violence, as well as youth leadership activities and livelihood promotion |
| Age range | 10-19 years old |
| Ethnicity | Not specified |
| Study design | RCT |
| Measures and outcomes | Internalising and externalising difficulties – Brief Problem Monitor-Youth (teacher or parent completed) |
| Follow up | Unclear |
| Quality assessment | Moderate |
| Evidence of impact | No evidence of impact between the intervention and control group |

***Programme 5: 'Inspiring Futures Educate Mentoring Programme' (17)***

The last group mentoring programme was the 'Inspiring Futures Educate Mentoring Programme', a targeted intervention for young people aged 13-14 in the UK at risk of, or involved in, crime. It was run in conjunction with the Rugby Football League. The programme consisted of four core elements: (i) Educate – a 1-hour flexibly delivered talk on self-esteem, wellbeing, communication, and team work, delivered by a Rugby Football League staff member and player, (ii) Mentoring – an after school group mentoring programme delivered by a facilitator and coaches at a community venue or training group, (iii) Connect – which focused on connecting families via mentoring, and (iv) identifying outreach services and locations that young people may need. It took place over a 12-week period in various community locations.

| | |
|---|---|
| Location | UK |
| Length of programme | 12 weeks |
| Type of programme | Targeted: young people at risk of, or involved in, crime |
| Key aspects | Mentoring and education, with connection to outreach services, run in conjunction with the Rugby Football League |
| Age range | 13-14 years old |
| Ethnicity | Mixed |
| Study design | RCT |
| Measures and outcomes | Emotional and behavioural difficulties – Strengths and Difficulties Questionnaire |
| Follow up | Unclear |
| Quality assessment | Weak |
| Evidence of impact | No evidence of impact between the intervention and control group |

## Peer support

One programme fell under the heading of peer support.

***Programme 1: 'Honest, Open, Proud-College (HOPC)' (18)***

'HOPC', was a targeted peer-led programme for those attending College in the United States with mental health difficulties. This peer support programme focused around three main lessons, with an additional 'booster' lesson if needed. The first lesson began with a discussion of what it means to identify as a person with mental illness and focused on the costs and benefits of disclosure. The second lesson taught different ways of disclosing and included a discussion of social media disclosure. In lesson three, participants crafted their own personal disclosure stories and had the opportunity to practice telling their story to others in 'HOPC'. Finally, the booster session included a check-in about whether participants chose to disclose to others, how these decisions were made, and how it went for those who did disclose. Each lesson was 1 week apart and the follow up booster session 2-3 weeks later.

| | |
|---|---|
| Location | United States |
| Length of programme | 3 sessions, each 1 week apart, and a follow up booster session 2-3 weeks later (if needed) |
| Type of programme | Targeted: young people with mental health difficulties |
| Key aspects | Peer support around disclosing mental health difficulties |
| Age range | Not specified |
| Ethnicity | Mixed |
| Study design | RCT |
| Measures and outcomes | Anxiety symptoms – Generalized Anxiety Disorder Screener<br>Depressive symptoms – Center for Epidemiologic Studies Depression Scale for Children |
| Follow up | 1 week |
| Quality assessment | Moderate |
| Evidence of impact | No evidence of impact between the intervention and control group |

## Coaching

Three programmes focussed on coaching (19–21), of which two had a sport-based component.

***Programme 1: 'Empire Fighting Chance' (EFC)'. (19)***

'EFC' was a UK programme targeting young people aged 13-14 whose behaviour in school, as well as attendance, were areas of concern. It consisted of weekly sessions, combining non-contact boxing physical activities with personal development. During the 12 weeks, the following topics were covered with a coach: extreme moods, the role of exercise in communication and social skills development, controlling reactions, mood stability, action accountability, how to relax and its impact, focusing on actions not outcomes, goal setting, feeling afraid, growth mindset, and being in the present moment. Instructors received training and all coaches had lived experience of the difficulties young people were facing, an ability to build relationships with young people, and a belief that sport can help change lives. 'EFC' lasted 12 weeks.

| | |
|---|---|
| Location | UK |
| Length of programme | 12 weeks |
| Type of programme | Targeted: young people whose behaviour at school, as well as attendance, were areas of concern |
| Key aspects | Coaching and non-contact boxing focusing on mood, feelings, and behaviour |
| Age range | 13-14 years old |
| Ethnicity | Mixed |
| Study design | RCT |
| Measures and outcomes | Emotional and behavioural difficulties – Strengths and Difficulties Questionnaire |
| Follow up | 1 week |
| Quality assessment | Weak |
| Evidence of impact | No evidence of impact between the intervention and control group |

***Programme 2: 'Grassroot Soccer (GRS)' (20)***

'GRS' also utilised sport as a mechanism for coaches to engage with young people. 'GRS' was a South African programme, targeting young men aged 18-25 who were unemployed and incorporated coaching around football matches. Coaches were trained in 11 fundamental skills: goal setting, problem solving, praise, social rewards, role playing, coping self-talk, relaxation, emotional self-control, awareness of feelings, attention, and assertive social behaviours. Before and after football matches, coaches discussed goals, concerns, and positive events that had happened in participants' lives. Matches with wrap around coaching were held twice a week, alongside competition matches on Saturdays. On top of coaching, 'GRS' also incorporated an additional employment and skills element, for those who displayed desirable behaviours during and after football (e.g. abstaining from drugs and alcohol and not getting red cards during matches), which consisted of an 8-week course in electrical or mechanical engineering at a local college.

| Location | South Africa |
|---|---|
| Length of programme | 8 weeks |
| Type of programme | Targeted: young males who were unemployed |
| Key aspects | Coaching and skill incorporated around soccer, plus employment skills opportunities focused around engineering |
| Age range | 18-25 years old |
| Ethnicity | Not specified |
| Study design | RCT |
| Measures and outcomes | Depressive symptoms – Center for Epidemiological Studies of Depression measure (CESD) |
| Follow up | 6 months |
| Quality assessment | Moderate |
| Evidence of impact | No evidence of impact between the intervention and control group |

***Programme 3: 'Uplift Peer support' (21)***

The last programme was 'Uplift Peer Support', an online UK coaching and training programme to promote adolescents' emotional support skills and mental health. It was a universal programme aged at young people between 16-18 and delivered during the Covid-19 pandemic. It covered the following topics: establishing rapport, active listening, grief and trauma, confidentiality, self-care, coping strategies, crisis management, signposting and referrals, and making a difference to the community. It was delivered by peer support experts over five consecutive days for 4 hours per day. This programme focused on coaching young people to be peer supporters, rather than young people implementing this training subsequently.

| | |
|---|---|
| Location | UK |
| Length of programme | 5 consecutive days for 4 hours per day |
| Type of programme | Universal |
| Key aspects | Coaching young people to support peers with emotional support skills and mental health |
| Age range | 16-18 years old |
| Ethnicity | Mixed |
| Study design | RCT |
| Measures and outcomes | Emotional difficulties – Strengths and Difficulties Questionnaire |
| Follow up | 1 week |
| Quality assessment | Strong |
| Evidence of impact | Evidence of impact favouring the intervention group |

## Residentials and camps

***Area description***

Activities and programmes in this area focus on residentials and camps which included activities such as wilderness adventure, outdoor pursuits and entrepreneurship-focused residentials (1). For this review, 6 programmes across four studies were included (22–25), most did not have a specific name.

***Programme 1: 'Outdoor adventure-based residential in Hong Kong' (22)***

One programme was a universal outdoor adventure-based training residential aimed at male and female young people aged 12-15 years old in Hong Kong. It involved a 2-day, 1- night summer camp with up to 12 participants attending at any one time. Activities included, but were not limited to, tasks to overcome obstacles, abseiling, wall climbing, and a nocturnal hike. Underlying objectives with these activities were a focus on team building, collaboration, problem solving, as well as enhancing self-esteem and confidence. Tasks were overseen by two certified professional adventure-based educators.

| | |
|---|---|
| Location | Hong Kong |
| Length of programme | 2 days |
| Type of programme | Universal |
| Key aspects | Outdoor adventure-based activities |
| Age range | 12-15 years old |
| Ethnicity | Mixed |
| Study design | RCT |
| Measures and outcomes | Depressive symptoms – Center for Epidemiologic Studies Depression Scale for Children (CES DC) |
| Follow up | 3 and 6 months |
| Quality assessment | Moderate |
| Evidence of impact | Evidence of impact favouring the intervention group |

***Programmes 2-4: 'Residentials for ethnic minority youth in the United States' (23)***

One report detailed three residential camps in the United States. These were targeted at marginalised (Black or Latinx) middle school students aged 11-14. The first camp outlined was the Experiential Education Camp (EEC) which consisted of an 8-day residential, including a 2-night backpacking trip and adventure activities and 5 didactic lessons aimed at improving social and emotional learning. The second camp was the integrated didactic and experimental camp (IC), which was similar to the EEC, but with more social and emotional lessons (8 rather than 5). In the IC residential, staff consciously prompted reflections of the social and emotional lessons throughout the day during activities, as well as in the evening. The last camp was the recreational camp (RC), which consisted of a 4-day camp experience, where young people participated in a summer camp in a rural setting where counsellors provided daily activities, including sports and recreation. In the RC, two 45-minute long didactic social and emotional learning lessons during the second and third day were implemented.

| | |
|---|---|
| Location | United States |
| Length of programme | Variable: 4-8 days |
| Type of programme | Targeted: Black or Latinx youth |
| Key aspects | Variable, but underpinned by social and emotional learning content |
| Age range | 11-14 years old |
| Ethnicity | Black or Latinx |
| Study design | QED |
| Measures and outcomes | The Positive and Negative Affect Schedule |
| Follow up | Post intervention |
| Quality assessment | Moderate |
| Evidence of impact | Evidence of impact from one of the three residential camps |

***Programme 5: 'Outdoor adventure-based training residential in Australia' (24)***

The last outdoor programme was a residential camp for young people aged 14-16 in Australia. This 7-day, 6-night residential was underpinned by the ChANGeS Framework (26)  which draws on five key components of outdoor adventure programs that are thought to be central to enhancing health and wellbeing. The first two days (hard-top stage) were based at a remote, residential camp facility where students were introduced to independent living skills, undertook a number of onsite adventure activities, and prepared for subsequent parts of the program.

On day three of the programme (supported camp stage), students undertook their first experience overnight camping in tents, and began to take on more responsibility with camp tasks and roles. For the final four days of the program (journey stage), students hiked with backpacks through the natural environment and camped in tents. This was run by outdoor programme leaders who underwent training and were supported by school staff. For each outdoor program, participants were divided into smaller working groups of 8–12 students of mixed gender drawn from different school classes.

| | |
|---|---|
| Location | Australia |
| Length of programme | 7 days |
| Type of programme | Universal |
| Key aspects | Outdoor adventure-based activities underpinned by ChANGeS Framework |
| Age range | 14-16 years old |
| Ethnicity | Mixed |
| Study design | QED |
| Measures and outcomes | Anxiety symptoms – State-Trait Anxiety Inventory<br>Depressive symptoms – Center for Epidemiologic Studies Depression Scale for Children (CES-DC)<br>Emotional and behavioural difficulties – Strengths and Difficulties Questionnaire |
| Follow up | 6 days |
| Quality assessment | Moderate |
| Evidence of impact | Evidence of impact only for emotional and behavioural difficulties, favouring the intervention group |

***Programme 6: 'Employment and skills residential in United States (25)***

The last programme explored a Residential summer camp, targeting young people aged 13-16 who identified as Native American, living on the Fort Apache Indian Reservation in the United States. It consisted of 16 lessons focused on the following topics: Apache culture and history and historic and modern examples of local entrepreneurship; problem solving and coping skills; communication, decision making, goal setting; financial literacy, entrepreneurship training, small business design, marketing and development. Ten lessons are delivered during a residential summer camp, and the remaining six lessons are delivered as follow up workshops (4-6 hours in total), delivered monthly in their local communities, after the residential. Unlike the previous programmes, this residential had an underlying emphasis on skills and enterprise training. The programme is delivered by Native paraprofessionals and ends in the presentation of business ideas to local business leaders in the hope of receiving start-up funds.

| Location | United States |
|---|---|
| Length of programme | 6 months |
| Type of programme | Targeted: Native American youth living on the Fort Apache Indian Reservation |
| Key aspects | 5 days residential and monthly lessons for 6 months focusing on culture and entrepreneurship |
| Age range | 13-16 years old |
| Ethnicity | Native Americans |
| Study design | RCT |
| Measures and outcomes | Self-reported suicide attempts – Youth Risk Behavior Survey |
| Follow up | 6 months |
| Quality assessment | Moderate |
| Evidence of impact | Evidence of impact favouring the intervention group |

## Sports and physical health

### *Area description*

Activities and programmes in this area focus on sport to support the health of young people (1). For this review, five activities and programmes were included. This included two activities and programmes focused around football: 'Football United' (27) and 'Gum Marom Kids League (GMKL)' (28), an Extracurricular Sports-Related Game (29), a sport residential aimed at young people with Type 1 diabetes (T1D) (30), and 'Home Goals', an online exercise intervention delivered to young people at home (31)..

### *Programme 1: 'Football United' (27)*

The first programme was 'Football United', targeted at young people aged 13-18, from culturally diverse areas with high levels of refugee settlement in Australia. The 'Football United' programme consisted of four key areas: (i) Football activities: Regular Saturday and after school training, school holiday camps, competitions and festivals. Mentorship between coaches, volunteers and players was actively promoted in all activities. (ii) Capacity building: Members of local communities participate in free training in coaching and refereeing, mentoring and life-skills, leadership and project management, and applied their learning in the program. (iii) Building linkages: Linkages between program participants and partner agencies, including local football clubs, government, community and corporate sectors were a focus of the program. (iv) Creating awareness of 'Football United' and issues for communities which is achieved through advocacy, key partnerships and individual high-profile champions. 'Football United' was delivered by coaches and ran for 10 weeks. .

| | |
|---|---|
| Location | Australia |
| Length of programme | 10 weeks |
| Type of programme | Targeted: Youth in culturally diverse areas with high levels of refugee settlement |
| Key aspects | Footballing with mentorship, skill capacity building, building links between communities, and building awareness of both 'Football United' and community issues |
| Age range | 13-18 years old |
| Ethnicity | Mixed |
| Study design | QED |
| Measures and outcomes | Emotional symptoms, hyperactivity and peer problems – Strengths and Difficulties Questionnaire |
| Follow up | Unclear |
| Quality assessment | Weak |
| Evidence of impact | Evidence of impact only for peer problems, favouring the intervention group |

***Programme 2: 'Gum Marom Kids League' ('GMKL': (28)***

Another programme, 'GMKL', was also a targeted programme drawing on football, however, aimed at young people aged 11-14 living in post conflict areas in Uganda. 'GMLK' used sport as a vehicle to promote physical fitness and mental health as well as achieve peace-building objectives in the community. Young people who signed up to 'GMLK' were put into teams and participated in a 9-week competitive football league. Each game of football lasted 40 minutes and peace building activities (unspecified) were built into games. Coaches were encouraged to promote participation and equal game-time for all team members. Points towards the 'GMKL' trophy were awarded to reflect a broad focus on football results (30%), on-field behaviour (25%), peacebuilding activities (25%) and community service (20%). 'GMLK' took place over an 11-week period.

| | |
|---|---|
| Location | Uganda |
| Length of programme | 11 weeks |
| Type of programme | Targeted: Youth living in post conflict areas |
| Key aspects | Footballing to promote physical fitness and promote and achieve peace building |
| Age range | 11-14 years old |
| Ethnicity | Mixed |
| Study design | RCT |
| Measures and outcomes | Depressive and anxiety like symptoms - Acholi Psychosocial Assessment Instrument |
| Follow up | 4 months |
| Quality assessment | Strong |
| Evidence of impact | Evidence of impact favouring the control group |

***Programme 3: 'Extracurricular Sports-Related Game' (29)***

The next programme explored a universal Extracurricular Sports-Related Game programme for high school students aged 14-15 in Turkey. The programme consisted of different "Sports-related games", that ensure the active participation of all players, regardless of students' sports-related past or skill levels. The key elements of the programme were underpinned by the CHANGE IT programme (32) which allows for flexible adaptions to sports related to games (such as team numbers, length of time of the game, and the types of equipment that could be used). The Extracurricular Sports-Related Game programme took place over a 10-week period, on 2 days per week for 80 minutes.

| Location | Turkey |
|---|---|
| Length of programme | 10 weeks |
| Type of programme | Universal |
| Key aspects | Sports-related games underpinned by the CHANGE IT programme |
| Age range | 14-15 years old |
| Ethnicity | Mixed |
| Study design | RCT |
| Measures and outcomes | Internalising and externalising difficulties – Youth Self Report |
| Follow up | Post intervention |
| Quality assessment | Weak |
| Evidence of impact | Evidence of impact favouring the intervention group |

***Programme 4: 'Sports camp for youth with Type 1 Diabetes (T1D) (30)***

Also taking a broader programme regarding sporting activities was a sports camp that targeted young people aged 7-18 with T1D in Greece, where they competed in sports, alongside their peers. This was an intensive program of daily physical activity that included three hours in the morning and three hours in the afternoon. Activities such as swimming, football, and athletics were among those included in the program. During this period, students also took part in a variety of other events, which included both informative and enjoyable activities (e.g., dancing, daily trips). During the study period, children and adolescents with T1D had medical supervision. Every day, sessions were held to educate them on the importance of physical activity for the achievement of good glycaemic control and a better general health status, and the role of a healthy lifestyle in disease management. The summer sports camp lasted 10 days.

| | |
|---|---|
| Location | Greece |
| Length of programme | 10 days |
| Type of programme | Targeted: Youth with T1D |
| Key aspects | Daily physical activity with medical supervision |
| Age range | 7-18 years old |
| Ethnicity | Not specified |
| Study design | RCT |
| Measures and outcomes | Depressive symptoms – Center for Epidemiologic Studies Depression Scale for Children |
| Follow up | Post intervention |
| Quality assessment | Moderate |
| Evidence of impact | No evidence of impact between the intervention and control group |

***Programme 5: 'Home Goals' (31)***

Lastly, 'Home Goals' was a targeted intervention for young people aged 11-17 waiting for CAMHS treatment. Similar to the programme for individuals with T1D this included psychoeducational components, in addition to physical activity. Psychoeducation was based on Acceptance and Commitment Therapy (ACT) principles. ACT looks at why we experience the emotions we do, and how we can control them (33). For the physical activity run by a sports professional, the sessions consisted of exercises and movements which could be done at home or school with little to no equipment and followed cycles of 30 seconds of work and 30 seconds of rest. The exercise sessions were fun and engaging based on popular sporting activities such as football and boxing, and the movement selections had optional variations to accommodate different levels of fitness. 'Home Goals' consisted of six weekly online video-conference sessions, delivered to patients at home, involving half an hour of psychoeducation and half an hour of physical activity.

| | |
|---|---|
| Location | UK |
| Length of programme | 6 weeks |
| Type of programme | Targeted: Youth waiting for mental health treatment |
| Key aspects | Exercise and psychoeducation |
| Age range | 11-17 years old |
| Ethnicity | Not specified |
| Study design | RCT |
| Measures and outcomes | Depressive symptoms – Patient Health Questionnaire<br>Anxiety symptoms – Severity Measure for Generalized Anxiety Disorder |
| Follow up | Post intervention |
| Quality assessment | Moderate |
| Evidence of impact | Evidence of impact favouring the control group |

# Overview of Measures and Outcomes

Mental health is a state of being that enables people to cope with the stresses of life, realise their abilities, learn well and work well (34). Mental health conditions include mental disorders and psychosocial disabilities as well as other mental states associated with significant distress, impairment in functioning, or risk of self-harm (35). People with mental health conditions are more likely to experience lower levels of mental well-being, but this is not always or necessarily the case as wellbeing is a separate construct (2).

The following mental health constructs and measures were used to evaluate the activities and programmes found in this review.

| **Depressive symptoms** | |
|---|---|
| Common symptoms | Persistent low mood, loss of interests or pleasure, fatigue of low energy, as well as aspects such as disturbed sleep, low self-confidence, poor appetite and suicidal thoughts to acts (36) |
| Measures looking at this construct within this review | (i) The Center for Epidemiologic Studies Depression Scale for Children (37), which measures depressive symptoms across 20 items on a 4-point Likert scale<br>(ii) The Short Mood and Feelings Questionnaire (38), which measures depressive symptoms across 13 items on a 3-point Likert scale<br>(iii) Patient Health Questionnaire (39), which measures depressive symptoms across 9 items on a 4-point Likert scale<br>(iv) Acholi Psychosocial Assessment Instrument (40), which measures depression-like (two tam, par and kumu) and anxiety like (ma lwor) symptoms across 60 items |

| Anxiety symptoms | |
|---|---|
| Common symptoms | Excessive anxiety, worry or apprehension, which the person finds difficult to control, as well as restlessness, being easily fatigued, difficulty concentrating, irritability, muscle tension and sleep disturbances (36) |
| Measures looking at this construct within this review | (i) Revised Children's Manifest Anxiety Scale (41), which measures anxiety symptoms across 10 items on a binary yes/no Likert scale<br>(ii) State-Trait Anxiety Inventory (42), which measures anxiety symptoms across 20 items on a 4-point Likert Scale<br>(iii) Severity Measure for Generalized Anxiety Disorder (43), which measures anxiety symptoms across 7 items on a 5-point Likert Scale<br>(iv) Generalized Anxiety Disorder Screener 7 (44), which measures anxiety symptoms across 7 items on a 4-point Likert Scale<br>(v) Acholi Psychosocial Assessment Instrument (40), which measures depression-like (two tam, par and kumu) and anxiety like (ma lwor) symptoms across 60 items |
| **Post Traumatic Stress Disorder (PTSD)** | |
| Common symptoms | Exposure to actual or threatened death, serious injury, or sexual violence which may result in recurrent, involuntary and intrusive distressing memories or dreams, dissociative reactions (e.g. flashbacks), distress to internal or external cues resembling said event, avoidance of memories and external reminders, or negative cognitions or emotions (36) |
| Measures looking at this construct within this review | Children's Revised Impact of Event Scale (45), which measures PTSD risk across 8 items on a 4-point Likert scale |
| **Emotional and behavioural difficulties** | |
| Measured constructs | Problem behaviours, Attention-Deficit/ Hyperactivity Disorder, and comorbid disorders[7], emotional difficulties, hyperactivity, peer problems, conduct problems, and prosocial behaviour[8] |
| Measures looking at this construct within this review | (i) Conners' Rating Scales–Revised (46), which measures emotional and behavioural difficulties across 27 items on a 4-point Likert scale<br>(ii) Strengths and Difficulties Questionnaire (47), which measures emotional and behavioural difficulties across 25 items on a 3-point Likert scale |

[7] Conners' Rating Scales–Revised (46)
[8] In the Positive and Negative Affect Scale (48)

| Positive and negative affect | |
|---|---|
| Measured constructs[9] | Positive affect constructs: attentive, active, alert, excited, enthusiastic, determined, inspired, proud, interested, strong<br>Negative affect constructs: hostile, irritable, ashamed, guilty, distressed, upset, scared, afraid, jittery, nervous |
| Measures looking at this construct within this review | Positive and Negative Affect Scale (48), which measures affect across 20 items on a 5-point Likert scale |
| **Internalising and externalising difficulties** | |
| Measured constructs | Varied constructs which cover a wide variety of symptoms, such as:<br>Internalising: anxious/depressed, depressed, somatic complaints, social problems, thought problems<br>Externalising: attention problems, rule-breaking behaviour and aggressive behaviour |
| Measures looking at this construct within this review | (i) Youth Self-Report (49), which measures internalising and externalising difficulties across 112 items on a 3-point Likert scale<br>(ii) Child Behaviour Checklist (50), which measures internalising and externalising difficulties across 113 items on a 3-point Likert scale, reported by parents and teachers<br>(iii) Brief Problem Monitor-Youth (51) measuring internalising and externalising difficulties across 19 items on a 3-point Likert scale |
| **Mental health** | |
| Measured constructs | Services used to support those with mental health difficulties |
| Measures looking at this construct within this review | (i) Receipts from social services of mental health services rendered |
| **Suicide attempts** | |
| Measured constructs | Suicide attempts |
| Measures looking at this construct within this review | (i) Youth Risk Behaviour Survey (52), which explores suicide plans and attempts across 5 questions, with various Likert scales |

[9] In the Positive and Negative Affect Scale (48)

# Main research question: Do youth sector provision activities and programmes impact on mental health, and if so, what outcomes?

## Citizenship, community service and volunteering

***Area description***

Activities and programmes in this area focus on engaging young people with their community or where they provided some form of community service or support (1). For this review, two programmes were included. Both were considered 'social action programmes' which engaged young people in making positive changes to their communities, based on local need.

***Study details, quality assessment and participants***

Both Envision and VAWK were evaluated in the same report (5). Both studies employed a RCT design and used a wait list control. When quality assessed, both studies were deemed weak. Both programmes allowed male and female participants. Mean age or ethnicity data was not provided.

***Measures and outcomes***

In both programmes, anxiety was assessed as part of wellbeing under a quality assessment framework. This was completed by the young person and assessed using a single item question on a 10-point Likert scale. For Envision, there was no impact of the social action programme on anxiety when comparing the intervention (4.00) and control (4.05) groups. However, the VAWK social action programme showed an impact in anxiety with the intervention group (3.34) scoring lower than the control group (3.90) at follow up.

***What does this evidence mean?***

There is inconsistent evidence to suggest that youth sector provision programmes under the category 'citizenship, community service and volunteering' impact on anxiety symptoms. A lack of programme information and diverse range of possible projects young people could undertake also add complexity to these findings. It is possible that adding in mentoring as an additional component may help with lowering anxiety symptoms. The small number of studies (n=2) and weak quality assessments mean conclusions should be treated very cautiously.

## Music, arts, recreation and community activities

***Area description***

Activities and programmes in this area cover music, the arts, community, and recreational activities that allow young people to engage with an activity they enjoy while also engaging socially with others (1). For this review, two programmes were included. One was considered 'music' and consisted of the programme 'Singing and Growing' (6), whilst the other fell under 'arts' and was a group arts-based literacy intervention called 'Pre Text' (7).

***Study details, quality assessment and participants***

Both studies employed a RCT design and had an active control. For 'Singing and Growing' this was a health education class, whilst in 'Pre Text' this was after school study skills. When quality assessed, both studies were deemed moderate. Both programmes allowed both male and female participants. The mean age of participants in 'Singing and Growing' was 17.07, whilst in 'Pre Text' it was 16.36. Ethnicity breakdown was not specified for either programme.

### *Measures and outcomes*

All measures used in both studies relied on young people self-reporting their difficulties. 'Singing and Growing' focused on internalising and externalising difficulties using the Chinese version of the Youth Self Report questionnaire (49). Conversely, 'Pre Text' focused on anxiety and depressive symptoms. Anxiety symptoms were measured using the Generalized Anxiety Disorder 7 questionnaire (44). Depressive symptoms were measured using the Patient Health Questionnaire (39)[10].

Both programmes had a positive impact on the mental health outcomes they measured. For 'Singing and Growing' a positive impact was observed at 1 week follow up on internalising and externalising difficulties, with the intervention group reporting lower scores at follow up when compared to the control group ($F(1.28, 31.93) = 14.22$, $p < .001$). However, there was not sufficient information to calculate the effect size. Similarly, for 'Pre Text', the intervention group reported a greater reduction in depression ($d = 0.52$, 95% CI [0.19, 0.84]) and anxiety ($d = 0.51$, 95% CI [0.20, 0.81]) symptoms at 1 week follow up, compared to the control group. In 'Pre Text' this corresponds to a medium effect size for both depressive and anxiety symptoms. Further analysis of participants in 'Pre Text' with elevated depressive and anxiety symptoms found that the intervention group also reported a greater reduction in depressive ($d = 1.10$, 95% CI [0.46, 1.75]) and anxiety ($d = 0.54$, 95% CI [–0.07, 1.45]) symptoms. This corresponds to a large effect size for depressive symptoms and a moderate effect size for anxiety symptoms.

### *What does this evidence mean?*

There is evidence from two studies to suggest that programmes drawing on music and arts-based methods can impact on short term mental health outcomes one week after the programme has been delivered. Specifically, (i) the role of singing groups at improving internalising and externalising difficulties for those with parental attachment issues, and (ii) using art literacy to improve anxiety and depression outcomes in secondary school age young people in Kenya. The small number of studies mean conclusions should be treated cautiously and further work should replicate and expand upon these findings, as well as explore the longer-term impact of such programmes. As both programmes were conducted abroad, how these may apply to the UK context should also be considered.

[10] Authors stated 8 items (rather than 9) were used as they did not include the item on suicidal ideation.

## Employment, skills and enterprise

### *Area description*

Activities and programmes in this area focus on developing young peoples' knowledge, skills and confidence in relation to business, entrepreneurship, and employment (1). One programme, 'Work Ready' (8), was included.

### *Study details, quality assessment and participants*

Only one study fell under this category. The study was an RCT, and the control group consisted of those who did not have access to the programme. It was quality assessed as moderate. 'Work Ready' was aimed at both male and female participants. The largest ethnic category of participants was those identifying as 'Black American', comprising 77% of the sample. The average age of participants was 15.64.

### *Measures and outcomes*

Mental health service use was measured using receipts from social services for mental health support, indicating which participants had received support from services for mental health difficulties. No difference in service use was observed when comparing participants in 'Work Ready' (0.25) to the control group (0.27).

***What does this evidence mean?***

Currently, there is no evidence to suggest that programmes focusing on employment, skills and enterprise impact those getting support for their mental health. A lack of programme information and diverse range of possible projects that young people could work on, or as part of, also add complexity to these findings. Whilst this study was assessed as moderate in terms of quality, the fact that there is only one means that any conclusions should be treated cautiously. Additionally, the lack of self-report measures also means that any changes in mental health symptoms would have been missed for those that did not seek help from services. The substantial differences in health system contexts also means that applications to the UK remain unclear.

## Mentoring, coaching and/or peer support

### *Area description*

Activities and programmes in this area focus on support networks for young people and/or on the teaching of new skills. The mentoring could be from adults or peers, be as part of a group, or one on one (1). For this review, 12 youth sector provision programmes were included, which ranged in terms of delivery format and target demographics (e.g., age, gender and ethnicity). These are outlined in Table 7.

### *Study details, quality assessment and participants*

All but one study used an RCT design (n=11). When it came to control comparators, six used a wait list control, four used an active control, and for two the control was no intervention. When an active control was used, this was compared to another peer mentoring programme (n=2), or part of the full programme (n=2). On the quality assessment, one study was assessed as strong, nine as moderate, and two as weak.

To aid understanding, youth sector provision studies have been split into the following subcategories depending on their delivery approach: (i) one on one mentoring, (ii) group mentoring, (iii) peer support, and (iv) coaching. These will be explored further below.

### *One on one mentoring*

One on one mentoring programmes included 'Step-It-Up-2-Thrive' (9), 'BBBSA' (10), and the 'Adult Connections Team programme' (11). All one on one mentoring programmes were aimed at both male and female participants. Both 'Step-It-Up-2-Thrive' and 'BBBS America' had lower mean participant ages (12.19 and 11.41, respectively), than the 'Adult Connections Team programme', where the mean age was 18.32. In terms of ethnicity, the largest ethnic category for 'Step-It-Up-2-Thrive' was 'Black or African American' at 50.5%. Similarly, the largest ethnic category of participants receiving the 'Adult Connections Team programme' were those identifying as Black (82%). For 'BBBS America' the largest ethnic category identified as 'White', accounting for 40% of participants.

### *Group mentoring*

Group mentoring programmes included 'Campus Connections' (13), after-school mentoring for African American youth (14), 'Girl Empower+' (15), the 'JIAH Trial' (16), and the 'Inspiring Futures Educate Mentoring Programme' (17). Of the five group mentoring schemes, three included both male and female participants, and two had only female participants. The mean age was not specified for four programmes, however, three were aimed at young people aged 13-14 and the other was aimed at a broader age range of 10–19-year-olds. For 'Campus Connections', the mean age of participants was 14.21, whilst for the after-school group mentoring programme targeting African Americans, the mean age of participants was 11.12. Ethnic category was not specified in two programmes. Two other programmes, 'Campus Connections' and 'Inspiring Futures Educate Mentoring Programme' had 'White' participants as the largest ethnic category (59% and 88%, respectively), whilst the targeted intervention at African Americans had African Americans as the largest participant ethnic category (97.91%).

### *Peer support*

One programme, 'HOPC' (18), fell under peer support. Participants in 'HOPC' (18) were both male and female with an average age of 20.8 years. The largest ethnic category of participants involved in the programme identified as 'White' (68.6%).

### *Coaching*

Three programmes were included under coaching: 'EFC' (19), 'GRS' (20) and 'Uplift Peer Support Training' (21). Two of the three programmes, 'EFC' and 'Uplift Peer Support Training', were aimed at both male and female participants, whilst 'GRS' participants were all male. The mean age of participants in 'EFC' was not specified, but the target age was 13-14 years old. The mean age of participants in 'Uplift Peer Support Training' was 16.39, whereas participants in 'GRS' were older, with a mean age of 21.9. The largest ethnic grouping in both 'EFC' and 'Uplift Peer Support Training' identified as 'White' (64% and 46%, respectively). Participant ethnicity was not outlined in 'GRS'.

### *Measures and outcomes*

### *One on one mentoring*

Depressive symptoms were examined in both 'BBBS America' and the 'Adult Connections Team programme'. The former used the Short Mood and Feelings Questionnaire (38), whilst the latter used the Centre for Epidemiological Studies of Depression measure (37).

Conduct difficulties were assessed using the Youth Problem Behaviour (conduct subscale) in 'Step-It-Up-2-Thrive'. Conduct difficulties were also assessed in 'BBBS America', along with emotional difficulties, hyperactivity, and total difficulties reported by parents/guardians, using the Strengths and Difficulties Questionnaire (47).

### *Depressive symptoms*

In 'BBBS America', when compared to a waitlist control, young people reported a positive effect of one on one mentoring for depressive symptoms ($d = 0.146$, $p < .05$), which indicates a very small effect size. The 'Adult Connections Team programme' also used a wait list control, however, unlike 'BBBS America', there was no effect of the intervention group on depressive symptoms when compared to the control group ($p = .51$).

### *Emotional and behavioural difficulties*

'Step-It-Up-2-Thrive' was compared to a standard peer mentoring programme. When controlling for variables, such as gender and location, there was no difference between those in the 'Step-It-Up-2-Thrive' programme, compared to standard peer mentoring on conduct difficulties ($p > .25$). As a similar active control was used, this means that 'Step-It-Up-2-Thrive' does not produce better outcomes than standard peer mentoring. However, in 'BBBS America', there was an impact for the intervention compared to the wait list control on parent reported outcome measures for emotional symptoms ($d = 0.212$, $p < .01$), peer problems ($d = 0.253$, $p < .001$), conduct problems ($d = 0.138$, $p < .10$), and the Strengths and Difficulties Questionnaire total difficulties score ($d = 0.220$, $p < .001$). Each of these correspond to a small effect size.

### *Group mentoring*

Measures used in two studies relied on young people self-reporting their difficulties. Adult reported outcome measures were also used in two studies, whilst one study used both adult and young person reported measures. The following difficulties were explored: anxiety and depressive symptoms, emotional and behavioural difficulties, internalising and externalising difficulties, and post-traumatic stress disorder risk. These are detailed further below and shown in Table 7.

Anxiety symptoms were explored in one programme, 'Campus Connections', using the Revised Children's Manifest Anxiety Scale (41), which is reported by the young person. Compared to the active control where participants were not actively matched to mentors, there were no differences in participants who received 'Campus Connections' on anxiety symptoms at 12 week follow up. However, improvements were seen on anxiety symptoms within both the control (mentees not matched to mentors) and intervention ('Campus Connections' where mentors were matched to mentees) groups. This suggests that whilst mentoring can impact anxiety symptoms, the matching of mentors does not make a difference.

Depressive symptoms were also explored in 'Campus Connections' using the Centre for Epidemiologic Studies Depression Scale for Children (37). It was also explored as an outcome in 'Girl Empower+' using the Short Mood and Feelings Questionnaire (38). Both were reported by the young person. Compared to the active control (where mentees and mentors were not matched), there were no differences in depressive symptoms for participants who received 'Campus Connections' versus the control group at 12 week follow up. However, improvements were seen on depressive symptoms within both the control (mentees not matched to mentors) and intervention ('Campus Connections' where mentors were matched to mentees) groups. Again, this suggests that whilst mentoring can impact depressive symptoms, the matching of mentors does not make a difference. Conversely, for 'Girl Empower+' there was no impact on depressive symptoms at follow up when comparing the intervention and control groups.

Emotional and behavioural difficulties were explored in 'Campus Connections' and 'Inspiring Futures Educate Mentoring Programme', both using the Strengths and Difficulties Questionnaire (47). However, in 'Campus Connections' this was reported by parents/guardians. No difference was found between the intervention and control arms for the 'Inspiring Futures Educate Mentoring Programme' at follow up ($B = -1.44$, $p = 0.436$). The control group did not receive any intervention. 'Campus Connections' also did not find a difference between groups, however, within both the active control and intervention arms, reductions in emotional and behavioural difficulties were found. Again, suggesting that whilst mentoring can impact emotional and behavioural symptoms, the matching of mentors does not make a difference.

A broader construct of internalising and externalising difficulties was used to measure parent/guardian's views in 'Campus Connections' and also in the programme targeting African American youth, both using the Child Behaviour Checklist (50). Parent/guardian reports on internalising and externalising difficulties for both 'Campus Connections' and the targeted intervention for African American students, did not find any differences between the intervention and control groups at 12 week follow up (exact statistics not available). However, in 'Campus Connections' there were improvements within both the active control and intervention arms. This suggests that whilst mentoring can impact internalising and externalising difficulties, the matching of mentors does not make a difference. Internalising and externalising difficulties were also explored as part of the 'JIHR trial' using the Brief Problem Monitor-Youth Questionnaire (51), which was completed by an unspecified adult (parents or teachers). On the JIHR evaluation, when the whole intervention was compared to the control group who received the livelihood component only, there was no effect of the intervention on internalising and externalising difficulties ($d = 0.02$, 95% CI [-0.06, 0.13], $p = 0.610$).

Post-traumatic stress disorder risk was assessed using the Children's Revised Impact of Event Scale (45). This was used in 'Girl Empower+' and reported by the young person. 'Girl Empower+' did not find a difference when compared to the control group at 24 month follow up.

***Peer support***

Two measures of mental health were used in 'HOPC'. Depressive symptoms were explored using the Centre for Epidemiological Studies of Depression measure (37) and the Generalized Anxiety Disorder 7 (44). Both were completed by the young person. Compared to the wait list control, there was no difference in either outcome measures for the intervention group (depressive symptoms: $F_{2,92} = 0.30$, $p = 0.743$; anxiety symptoms: $F_{2,92} = 1.56$, $p = 0.213$).

***Coaching***

Mental health constructs related to emotional and behavioural difficulties, as well as depressive symptoms were explored in relation to coaching. All outcomes were reported by the young person. For 'EFC', emotional and behavioural difficulties were assessed using the Strengths and Difficulties Questionnaire (47). The Strengths and Difficulties Questionnaire was also used to evaluate 'Uplift Peer Support', however, only the emotional subscale was used (which consists of 5 items on a 3-point Likert scale). Lastly, in 'GRS', depressive symptoms were explored using the Centre for Epidemiological Studies of Depression measure (37).

In 'EFC', compared to the wait list control, there was no impact of the intervention on emotional and behavioural difficulties. Similarly, in 'GFS', there was also no impact on depressive symptoms at 6 month follow up, when comparing the programme to those on the wait list control. Conversely, 1 week after 'Uplift Peer Support' was completed, those who received the programme had lower emotional difficulties compared to the wait list control ($F_{1,95} = 8.26$, $p = 0.005$, $\eta p^2 = 0.08$), which corresponds to a medium effect size.

***What does the evidence mean?***

***One on one mentoring***

There is mixed evidence of impact for both depressive symptoms and conduct difficulties. The small number of studies mean conclusions should be treated cautiously and considerations as to how these may apply to the UK context are also unknown.

***Group mentoring***

There is tentative evidence of impact for anxiety symptoms, and mixed evidence of impact for depressive symptoms, emotional and behavioural difficulties, as well as internalising and externalising difficulties. The small number of studies mean conclusions should be treated cautiously and further work should be undertaken to replicate these findings. Considerations as to how these may apply to the UK context are also unknown.

***Peer support***

There is currently no evidence that peer support interventions for those with mental health difficulties in campus settings improve anxiety or depressive symptoms. However, as this is only one study, findings should be treated cautiously.

***Coaching***

Targeted coaching programmes, which include sport elements, do not appear to impact emotional and behavioural difficulties or depressive symptoms for young people. There is tentative evidence from one study to suggest that the universal coaching and training programme 'Uplift Peer Support' impacts on emotional difficulties 1 week after the programme has been delivered. The small number of studies mean conclusions should be treated cautiously.

## Residentials and camps

***Area description***

Activities and programmes in this area focus on residentials and camps, which included activities such as wilderness adventure, outdoor pursuits and entrepreneurship-focused residentials (1). For this review, 6 programmes across four studies were included (22–25), most did not have a specific name.

***Study details, quality assessment and participants***

Two studies corresponding to two programmes used an RCT design. The remaining two studies detailing four programmes, used a QED. Both RCTs used an active control group. One QED study, outlining three programmes, compared individuals to a prospective control of young people attending the residential the following term, whilst the other used a cross over control design. All studies were rated as moderate on the quality assessment.

To aid understanding, youth sector provision studies have been split into the following subcategories depending on their topic area: those with a substantial outdoor component (22–24), and one where the focus was around employment and enterprise skills (25).

*Outdoor residentials*

Both male and female participants were included in all residentials. For one study detailing three residentials, the mean age was not specified, however the age range of participants was 11-14. In the other two studies, the mean ages of participants were 13.00 and 14.87. For two, ethnicity was not specified whilst for the other study detailing three residentials, the largest ethnic category was those identifying as Black African American (84-100% depending on the residential).

*Employment skills and enterprise residential*

Both male and female participants were included in this residential and the mean age of participants was 14.38. This was an intervention targeted at those who identified as Native American, and all (100%) identified as Native American.

*Measures and outcomes*

*Outdoor residentials*

All studies relied on young person reported measures. Depressive symptoms were explored in two studies. In both, this was explored using the Centre for Epidemiologic Studies Depression Scale for Children (37) and both were reported by young people. Additionally, one study explored anxiety using the State-Trait Anxiety Inventory (42), as well as emotional and behavioural difficulties using the Strengths and Difficulties Questionnaire (47). Whilst positive and negative affect was explored using The Positive and Negative Affect Schedule (48).

*Depressive symptoms*

In one study, compared to the control group who participated in two days of leisure activities, the adventure-based training had an impact on depressive symptoms at 3 ($\eta 2 = 0.03$) and 6 month ($\eta 2 = 0.02$) follow up. Both these effect sizes indicate a small effect. However, in another study looking at a different residential, there was no difference between the intervention and control groups, who were a wait list control, on depression at any follow up point (post intervention, 25 days and 180 days).

*Anxiety symptoms*

In the one study that looked at anxiety symptoms, there were no differences between the intervention and wait list control group at follow up (post intervention, 25 days and 180 days follow up).

*Positive and negative affect*

When comparing the EEC to the control group, an increase in negative affect was observed ($d = -.64$, $p = .03$). This corresponds to a medium negative effect size. Whilst for the IC, youths reported positive differences for negative affect ($d = 0.49$, $p = .047$) when compared to the control group. This corresponds to a medium effect size. Lastly, for the RC, when compared to the control, no differences were found on positive ($t$ 0.02, $p = .99$) or negative affect ($t$ −0.21, $p = .83$).

*Emotional and behavioural difficulties*

Compared to the cross over control group, results indicated both a short-term programme effect (6 days) and a medium-term programme effect (25 days) on emotional and behavioural difficulties (Strengths and Difficulties Questionnaire-Dif 95% CIs [1.00, 2.48], [−0.49, −0.003], respectively).

*Employment skills and enterprise residential*

One study was included and explored reported suicide attempts over the last 12 months, using the Youth Risk Behaviour Survey (52). Outcomes were reported by the young person. Compared to the active control that received three days of sporting activities for 3-4 hours per day, those on the residential reported suicide attempts decreased within the intervention group from baseline (15.4%) to 12 months (9.4%, $p = 0.0294$) and 24 months (8.8%, $p = 0.0108$) post-intervention. While there were also decreases observed in the control group, they were smaller and not statistically significant.

***What does the evidence mean?***

***Outdoor residentials***

There is a mixed effect of the impact of outdoor camps and residentials on depressive symptoms. Both programmes looking at depressive symptoms were universal. However, the residential that showed a positive impact was targeted at a lower age range (11-14 versus 14-16), which could suggest younger age groups benefit, particularly as depression becomes more prevalent as age increases. Another possibility is the consideration of cultural differences, as a positive impact on depressive symptoms was observed in young people from Hong Kong.

Camps and residentials incorporating social and emotional learning elements may be more effective on negative affect when reflective practice is fully embedded in activities. Given the small number of studies, the findings should be treated cautiously. All studies were also conducted outside the UK, meaning that how this applies to a UK context remains unclear.

***Employment skills and enterprise residential***

There is tentative evidence from one study that this type of residential can reduce self-reported suicide attempts for marginalised young people. In this instance, Native Americans. As this is one study, findings should be treated cautiously, and future research and replication would be beneficial. As the population studied have unique and culturally specific historical challenges, considerations as to how these may apply to the UK population are unknown.

## Sports and physical health

***Area description***

Activities and programmes in this area focus on sport to support the health of young people (1). For this review, five programmes were included. This included two programmes focused around football: 'Football United' (27) and 'Gum Marom Kids League (GMKL)' (28), an Extracurricular Sports-Related Game (29), a sport residential aimed at young people with Type 1 diabetes (T1D) (30), and 'Home Goals', an online exercise intervention delivered to young people at home waiting for mental health treatment (31).

***Study details, quality assessment and participants***

Four studies used an RCT design and the other a QED. One study used a wait list control, two studies compared the programme to no intervention, one study compared the programme to an active control, which was a family vacation, and one study had two control arms, a wait list control and comparing the programme to no intervention. On the quality assessment, one study was rated strong, two as moderate and two as weak. Four of the studies included both male and female participants, whilst the remaining one did not specify details on participants. The mean age range for 'Football United' was 14.7 years old, whilst for the sport activities camp for young people with T1D this was 12.65 years old. The other three interventions did not specify mean ages, but ranged from 11-14 for 'GMKL', 14-15 for the Extracurricular Sports-Related Game programme for high school students, and 11-17 for 'Home Goals'. Ethnicity data were provided only for 'GMLK', where the largest ethnic category were those identifying as Afghan at 23%.

***Measures and outcomes***

Depressive symptoms were explored in three studies. In 'GMKL', this was explored using the Acholi Psychosocial Assessment Instrument (40). Whilst in the summer sport camp for individuals with T1D study researchers used the Centre for Epidemiologic Studies Depression Scale for Children. In 'Home Goals', depressive symptoms were explored using the PHQ-9 (39). All were self-reported by the young person.

Anxiety symptoms were assessed in two studies. In 'GMKL', this was explored using the Acholi Psychosocial Assessment Instrument (40), whilst in 'Home Goals' this was explored using the Severity Measure for Generalized Anxiety Disorder (43). These were both self-reported by the young person.

Other studies used constructs such as emotional and behavioural difficulties using the Strengths and Difficulties Questionnaire (47), as well as internalising and externalising difficulties using the Youth Self Report (49). Again, these were all self-reported by the young person.

For depressive symptoms, findings from 'GMKL' showed that there was a negative effect when comparing males in the intervention versus wait-listed groups (ES = 0.67 [0.33 to 1.00]) and intervention versus non-registered (ES = 0.25 [0.00 to 0.49]) groups. These correspond to a medium effect size. Whilst for 'Home goals', no differences between groups at any time point were found, apart from at T3, after the delayed intervention group (Group 2) had received the training, with Group 2 reporting lower depressive symptom scores compared to the immediate intervention group.

For anxiety symptoms, both 'GMKL' and 'Home Goals' found similar results as for depressive symptoms. For 'GMKL', there was a negative effect for males in the intervention versus wait-listed groups (ES = 0.63 [0.30 to 0.96]) and intervention versus non-registered (ES = 0.26 [0.01 to 0.50]) groups. Whilst for 'Home Goals', the delayed intervention (control) group had lower anxiety symptom scores compared to the immediate intervention group at baseline and all subsequent time points.

For other constructs, the Youth Self-report indicated that that for the internalising score and total problems behaviour score, the values were different (p < .05) and lower than control group. Lastly for the targeted intervention at those from culturally diverse areas with high levels of refugee settlement, the Strengths and Difficulties Questionnaire indicated that compared to those who did not receive the intervention, those in the programme did not have improvements for emotional difficulties overall (t 0.13, p = 0.9), or for males (t 0.53, p < 0.6). This was also the case for hyperactivity both overall (t 0.24, p = 0.82), or for males (t 0.40, p <0.69). However, the intervention group showed a positive difference on peer problems overall (t 0.75, p = 0.46), and for males (t 2.02, p < 0.04), compared to the control group (effect size not calculable).

***What does this evidence mean?***

There is tentative evidence from one study that sports and physical health activities can help improve internalising and externalising difficulties. There is also tentative evidence for the role of sports and physical health activities positively impacting on peer problems. There is also tentative evidence that there may be a negative impact of sports and physical health activities for those with mental health difficulties or living in post conflict areas. However, as each of these findings are only present in one study, findings should be treated cautiously.

# Sub Research Question: Does the length of time of youth sector provision activities and programmes impact on mental health outcomes?

For this sub-question, activities and programmes were separated into: one-off activities or programmes, which consisted of a standalone youth sector provision activity occurring over a short time period (often less than 1 week), time limited activities or programmes, which tended to be a specified number of weeks in duration, and regular activities or programmes, which consisted of ongoing activities which spanned longer than 6 months.

## One-off activities or programmes

Six studies exploring eight programmes fell into the category of one-off activities or programmes (7,21–24,30). The majority of studies (n=4) fell under 'residentials and camps'. See Table A1 in the Appendix.

***Study details***

Four studies employed an RCT design and two used a QED.

***Measures and outcomes***

Depressive symptoms were explored in four studies, anxiety symptoms in two studies, broader emotional and behavioural difficulties in two studies, and positive and negative affect in one study.

***Depressive symptoms***

Two studies reported an impact on depressive symptoms, whilst two did not. For those that did, both were in favour of the intervention group, used active controls and reported improvements at either 1 week follow up or 3 month follow up.

***Anxiety symptoms***

One study reported an impact on anxiety symptoms, whilst one did not. For the study where a difference was found between the intervention and active control group, this was in favour of the intervention group at 1 week follow up.

***Emotional and behavioural difficulties***

One study reported on emotional difficulties and one study reported on a combined score of emotional and behavioural difficulties. Both indicated that the intervention group had lower rates of difficulties compared to the control groups (a wait list control and cross over control) at six and seven days after the programme was delivered.

***Positive and negative affect***

There is a mixed picture when exploring positive and negative affect. This was only explored in one study, across three programmes, all of which were a similar length of time, but emphasised different activities/elements. This study found that when comparing the activities to a prospective control post intervention, one improved affect for the intervention group, one made affect worse in the intervention group, and for the other there was no difference. The one showing a difference in favour of the intervention had a more embedded social and emotional learning component.

## Time limited activities or programmes

Thirteen youth sector provision activities and programmes fell into the category of 'time limited' (6,8,11,13,17–20,27–29,31,53). See Table A2 in the Appendix.

***Study details***

12 studies employed an RCT design and one used a QED.

***Measures and outcomes***

Depressive symptoms were explored in six studies, anxiety symptoms in four studies, emotional and/or behavioural difficulties in four studies, internalising and externalising difficulties in three studies, use of mental health services in one study, and suicide attempts in one study.

*Depressive symptoms*

Four studies did not find an impact on depressive symptoms between the control and intervention group. However, one of these used an active control comparing a similar intervention and improvements to depressive symptoms were seen within each group (intervention and control). For the two studies that found a difference, differences this favoured the control group. For one, this was at 6 weeks follow up and the other this was at 4 month follow up. Both these studies used a wait list control

*Anxiety symptoms*

Two studies did not find an impact on anxiety symptoms between the control and intervention group. However, one of these used an active control comparing a similar intervention and improvements to anxiety symptoms were seen within each group (intervention and control). For the two studies that found a difference, differences favoured the control group. For one, this was at 6 weeks follow up and the other this was at 4 month follow up. Both these studies used a wait list control.

*Emotional and behavioural difficulties*

Emotional and behavioural difficulties were explored in four studies. No impact was seen between the control and intervention groups on overall emotional and behavioural difficulties. However, one of these used an active control comparing a similar intervention and improvements to emotional and behavioural difficulties were seen within each group (intervention and control). Additionally, one of these studies explored peer difficulties as part of this construct and found an impact in favour of the intervention group at follow up (time unspecified).

*Internalising and externalising difficulties*

Three studies looked at internalising and externalising difficulties. Of these, two found an impact on these difficulties, in favour of the intervention group. This was between 1 week and 10 weeks post intervention. For the study where a difference was not found between the control and intervention group, an active control group consisting of a similar mentoring scheme was used. However, a reduction in internalising difficulties in both arms was observed.

*Mental health service use*

One study exploring use of mental health services did not find an impact when comparing the intervention to the control group, which consisted of no activity or programme, the following year.

*Suicide attempts*

One study explored self-reported suicide attempts, and the intervention group reported reduced suicide attempts over a 24-month period. The control group also reported reduced suicide attempts, but unlike the intervention group, this was not statistically significant. The active control used was engagement in sport activities.

## Regular activities and programmes

Seven activities and programmes across six studies were classed as 'regular'. Most (n=5) had a strong mentoring, coaching or peer support element (5,9,10,14–16). See Table A3 in the Appendix.

*Study details*

Six studies utilised an RCT design and one a QED.

*Measures and outcomes*

Two studies explored depressive symptoms. Two studies also explored emotional and behavioural difficulties, one study, focusing on two programmes, explored anxiety symptoms, two explored internalising and externalising difficulties, and one post-traumatic stress disorder risk.

*Depressive symptoms*

Two studies looked at depressive symptoms. One study did not find an impact between the intervention and control group at follow up, whilst one study found a positive impact at 12 month follow up, favouring the intervention group. In this instance, the study used a wait list control.

*Anxiety symptoms*

The one study exploring two programmes produced mixed findings. One programme did not find an impact on anxiety symptoms between the wait list control and intervention group at follow up (time unclear), whilst the other found an impact favouring the intervention group at follow up (time also unclear).

***Emotional and behavioural difficulties***

One study did not find an impact on conduct difficulties at 15 month follow up. Whilst one study found an impact, on emotional, conduct, and total difficulties, and peer problems, favouring the intervention group at 12 month follow up and used a wait list control.

***Internalising and externalising difficulties***

Two studies explored this construct and did not find an impact between the control and intervention group at follow up. For one study, this was at 12 months and for the other the follow up time was unclear.

***Post traumatic stress disorder risk***

One study looked at risk of post-traumatic stress disorder and did not find any differences between the control and intervention groups at 24 month follow up.

***What does the evidence tell us?***

***One-off and regular activities***

There is mixed evidence for one-off and regular activities on mental health outcomes such as depressive and anxiety symptoms and affect.

***One-off and regular activities***

There is evidence that time limited activities can impact on internalising and externalising difficulties.

Where outcomes show inconclusive results, this may point towards intervention content, rather than length in itself being an important factor. Such suppositions are supported by the study comparing 3 residentials of a similar length and where embeddedness of the social and emotional learning component impacted outcomes pertaining to positive and negative affect (22).

# Sub Research Question: Does location of activities impact on mental health outcomes?

To explore this sub-question, places were separated into: activities and programmes linked to the school premises, activities and programmes in the community, activities and programmes that are online, and activities and programmes that are outdoors or away from home.

## Activities and programmes linked to the school premises

***Study details***

Four studies were included (17–19,29) and all utilised an RCT design. See Table A4 in the Appendix.

***Measures and outcomes***

Two studies explored emotional and behavioural difficulties, one study explored depressive and anxiety symptoms, and the other internalising and total difficulties.

***Depressive and anxiety symptoms***

The study that explored both depressive and anxiety symptoms did not find any impact between the wait list control and intervention group at 1 week follow up.

***Emotional and behavioural difficulties***

Two studies explored emotional and behavioural difficulties and neither found any impact between the control and intervention group at follow up (time unclear). In both instances, the control group did not receive any intervention.

***Internalising and externalising difficulties***

One study explored the impact of internalising and externalising difficulties. An impact between the control and intervention groups was found that favoured the intervention group at 10 week follow up. In this instance, the control group received no intervention.

## Activities and programmes based in the community

***Study details***

Fourteen studies (exploring 15 programmes) were included (5–11,13–16,20,27,28). Twelve studies used an RCT design and two used a QED. See Table A5 in the Appendix.

***Measures and outcomes***

Seven studies explored depressive symptoms, four studies (detailing five programmes) explored anxiety symptoms, four studies explored emotional and behavioural difficulties, four explored internalising and externalising difficulties, one explored post-traumatic stress disorder risk, and one explored mental health service use.

***Depressive symptoms***

Four studies did not show a difference in depressive symptoms between the control and intervention groups. However, one of these, which used a similar matched control, showed differences in depressive symptoms within each group (intervention and control). Two studies showed a difference between the control and intervention groups, which favoured the intervention group at follow up. For one this was at 1 week follow up and an active control was used. For the other this was at 12 month follow up and a wait list control was used.

***Anxiety symptoms***

One study, detailing two programmes, showed mixed results for anxiety symptoms, with one programme showing an impact on anxiety symptoms favouring the intervention group, whilst the other programme reported no impact. In these programmes, follow up was not reported and both were compared to no intervention. One other study showed a difference between the control and intervention groups, which favoured the intervention group at 1 week follow up and used an active control. Conversely, one other study showed a difference between the control and intervention groups, but in favour of both the wait list control and those who did not receive any intervention at 4 month follow up. Lastly, one study did not show a difference between the control and intervention groups. However, this used a similar matched control and decreases in anxiety symptoms within each group (intervention and control) were found.

***Emotional and behavioural difficulties***

One study did not find a difference between the control and intervention group at follow up for emotional and behavioural difficulties. However, this study used an active control comparing a similar intervention and improvements to emotional and behavioural difficulties were seen within each group (intervention and control). In another study, there was no impact specifically on conduct difficulties when comparing the active control and intervention group at 15 month follow up. Whilst in another study, there was an impact only for peer problems favouring the intervention group at follow up (time unclear) and the control group received no intervention. Lastly, one study found an impact when parents/guardians were reporting youth difficulties when comparing the intervention to a wait list control at 12 month follow up. This was for emotional and conduct difficulties, peer problems and total difficulties.

***Other constructs***

Three studies did not find an impact on internalising (n=1) or internalising and externalising difficulties (n=2) when comparing the intervention and control groups. However, one of these used an active control comparing a similar intervention and improvements to internalising difficulties were seen within each group (intervention and control). One study showed a difference between the control and intervention groups for internalising and externalising difficulties at 1 week follow up, favouring the intervention group and an active control group was used.

One study looked at mental health service use and one at post-traumatic stress disorder risk and for both, no impact was found between the control and intervention groups.

## Activities and programmes that are online

***Study details***

Two studies were included (21,31). Both used an RCT design. See Table A6 in the Appendix.

***Measures and outcomes***

One study explored depressive and anxiety symptoms, and one study explored emotional and behavioural difficulties.

***Depressive and anxiety symptoms***

One study explored both these constructs, and no differences were found between the control and intervention groups at six week follow up when compared to a wait list control.

***Emotional and behavioural difficulties***

One study explored emotional and behavioural difficulties, and an impact was found between the control and intervention groups, favouring the intervention group at 1 week follow up. This study used a wait list control.

## Activities and programmes that are outdoors or away from home

***Study details***

Five studies detailing 7 programmes were included (22–24,30,53). Three used an RCT design and four a QED. Six of these fell under the category 'residentials and camps'. See Table A7 in the Appendix.

***Measures and outcomes***

Three studies explored depressive symptoms, one explored anxiety symptoms, one explored emotional and behavioural difficulties, one explored positive and negative affect and one explored self-reported suicide attempts.

***Depressive symptoms***

Two studies did not show a difference in depressive symptoms between the control and intervention groups. However, another study showed an impact between the active control and intervention groups at 3 month follow up, favouring the intervention group.

***Anxiety symptoms***

One study explored anxiety symptoms, and no differences were found between the control and intervention group at 6 days post intervention.

Emotional and behavioural difficulties

One study explored emotional and behavioural difficulties, and differences were found between the control and intervention groups, favouring the intervention group at 6 days post intervention.

***Suicide attempt***

One study explored self-reported suicide attempts, and the intervention group reported reduced

suicide attempts over a 24-month period. The control group also reported reduced suicide attempts, but unlike the intervention group, this was not statistically significant. The active control used was engagement in sport activities, which was different from the intervention.

***Positive and negative affect***

There is a mixed picture when exploring positive and negative affect. This was only explored in one study, across three programmes, all of which were a similar length of time, but emphasised different activities/elements. The study found that when comparing the activities to a prospective control post intervention, one programme improved affect for the intervention group, one made affect worse in the intervention group, and for the other there was no difference. For the one where there was a positive impact favouring the intervention, an embedded social and emotional learning approach was used.

***What does this evidence tell us?***

Overall, there is no clear indication that location of the youth sector provision activities and programmes impacts mental health outcomes for young people. Most studies show mixed results and others show tentative evidence of support as they only include one study demonstrating a positive impact (e.g. suicide attempts in the residential targeted at Native American youth). As previously outlined, this may point towards the content of the intervention, rather than the category it falls under, being important. Three of the four studies under the category 'activities and programmes linked to the school premises' were rated as weak, so any findings and conclusions here should be treated very cautiously.

# Sub Research Question: Is there a difference in mental health outcomes when youth sector provision activities and programmes are universal versus targeted?

To explore this sub-question, youth sector provision activities and programmes were separated into universal and targeted activities and programmes.

## Universal activities and programmes

***Study details***

Eight studies were included, detailing nine youth sector provision activities and programmes (5,7,8,10,21,22,24,29). Seven used an RCT design and 1 used a QED. See Table A8 in the Appendix.

***Measures and outcomes***

Four studies explored depressive symptoms, three studies (detailing four programmes) explored anxiety symptoms, three studies explored emotional and behavioural difficulties, one explored mental health service use, and one explored internalising difficulties.

***Depressive symptoms***

One study did not show a difference in depressive symptoms between the control and intervention groups. Conversely, three showed differences between the control and intervention groups favouring the intervention group, two of which used an active control group and the other used a wait list control. Follow up where differences were found ranged from 1 week to 12 months.

***Anxiety symptoms***

One study, detailing two programmes showed mixed results for anxiety symptoms, with one programme showing an impact on anxiety symptoms favouring the intervention group, whilst the other programme reported no impact. In these programmes, follow up was not reported and both were compared to no intervention. In another programme, no difference was found between the intervention and control group at 6 days follow up and the control group received no intervention. Lastly, one study found a difference between the intervention and control groups, favouring the control group at 1 week follow up. This study used an active control group.

***Emotional and behavioural difficulties***

All three studies that explored emotional and behavioural difficulties found differences between the control and intervention groups, favouring the intervention group at follow up. One study only focused on emotional difficulties, whilst the other two focused on emotional and behavioural difficulties. Follow up for these studies was between 6 days and 12 months. Two of these studies used a wait list control and the other control group received no intervention.

***Other constructs***

The study that explored mental health service use did not find differences between the control and intervention group. Conversely, the study that explored internalising and total difficulties did find a difference between the control and intervention groups, favouring the intervention group at 10 weeks post intervention. In this study, the control received no intervention.

## Targeted activities and programmes

***Study details***

Seventeen studies were included, detailing nineteen youth sector provision activities and programmes (6,10,11,13–20,23,27,28,30,31,53). Fourteen used an RCT design and three used a QED. See Table A9 in the Appendix.

***Measures and outcomes***

Eight studies explored depressive symptoms, four studies explored anxiety symptoms, five studies explored emotional and behavioural difficulties, four internalising and externalising difficulties, one explored mental health service use, one explored suicide attempts, one post-traumatic stress symptoms, and one explored positive and negative affect.

***Depressive symptoms***

Six studies did not show any difference between the control and intervention groups on depressive symptoms. For the two that did, differences between

the intervention group and control group favoured the control. For one, this was at 6 week follow up and for one this was at 4 month follow up. Both these studies used a wait list control.

***Anxiety symptoms***

Two studies did not show any difference between the control and intervention groups on anxiety symptoms. For the two that did, differences between the intervention group and control group favoured the control. For one, this was at 6 week follow up and for one this was at 4 month follow up. Both these studies used a wait list control.

***Emotional and behavioural difficulties***

Four studies did not show any difference between the control and intervention groups on emotional and behavioural symptoms, with one study only exploring conduct difficulties. However, one of these studies used an active control comparing a similar intervention, and improvements to emotional and behavioural difficulties were seen within each group (intervention and control). For another study, no difference was observed on emotional or behavioural difficulties. However, a difference in peer problems, favouring the intervention group was found at follow up (length of time unclear). In this instance, the control group received no intervention.

***Internalising and externalising difficulties***

Two studies did not show any difference between the control and intervention groups in internalising and externalising difficulties. However, an active control group of a similar intervention was used in one of these studies and found a reduction in internalising difficulties in both arms. One study only looking at internalising difficulties also did not show any difference between the control and intervention group. In another study, a difference favouring the intervention group for internalising and externalising difficulties was found at 1 week follow up. This study used an active control.

***Other constructs***

The study that explored mental health service use did not find differences between the control and intervention group. One study that explored self-reported suicide attempts, found that the intervention group reported reduced suicide attempts over a 24-month period. The control group also reported reduced suicide attempts, but unlike the intervention group, this was not statistically significant. An active control was used in this study.

There is a mixed picture when exploring positive and negative affect. This was only explored in one study, across three programmes, all of which were a similar length of time, but emphasised different activities/elements. The study found that when comparing the activities to a prospective control post intervention, one programme improved affect for the intervention group, one made affect worse in the intervention group, and for the other there was no difference. For the one where there was a positive impact favouring the intervention, an embedded social and emotional learning approach was used.

***What does the evidence tell us?***

***Universal programmes and activities***

There is evidence to suggest that universal youth sector provision activities and programmes impact on emotional and behavioural difficulties, as well as some evidence to suggest that such programmes may also help with depressive symptoms with three of four studies showing an impact, favouring the intervention group.

***Targeted programmes and activities***

For targeted activities and programmes, there are inconclusive findings, which likely reflect the broad range of socio-demographic and clinical characteristics being targeted. Studies where differences were observed were conducted outside the UK and sample sizes within each defined category tended to be small, so findings should be treated cautiously.

# Sub Research Question: Is there a difference in mental health outcomes when youth sector provision activities and programmes are aimed at particular age groups?

To explore this sub-question, the young people were split into those aged 11-15[11] 'young adolescents' and those aged 15-256 'older adolescents and young adults'. Where mean age of participants was provided, this was used to select the category. Where mean age was not available, the advertised age range for the youth sector provision activities and programmes were used, providing it did not span both categories. Two programmes were excluded as mean age was not provided and a wide age range of young people spanning both categories was possible.

## Activities and programmes aimed at those aged 11-15 'young adolescents'

***Study details***

Fifteen studies were included, detailing seventeen youth sector provision activities and programmes (9,10,13–15,17,19,22–24,27–30,53). Twelve studies used an RCT design and four used a QED. See Table A10 in the Appendix.

***Measures and outcomes***

Seven studies explored depressive symptoms, three studies explored anxiety symptoms, seven studies explored emotional and behavioural difficulties, three internalising difficulties, one mental health service use, one self-reported suicide attempts, one post-traumatic stress disorder, and one explored positive and negative affect.

***Depressive symptoms***

Four studies did not show a difference in depressive symptoms between the control and intervention groups. However, one of these, which used a similar matched control, showed differences in depressive symptoms within each group (intervention and control). Two studies showed a difference between the control and intervention groups, which favoured the intervention group at follow up. One used an active control and follow up was at 3 months, whilst the other used a wait list control and follow up was at 12 months. One study also found a difference between the control and intervention groups, which favoured the control group at 4 month follow up, with the control group receiving no intervention.

***Anxiety symptoms***

Two studies did not show a difference in anxiety symptoms between the control and intervention groups. However, as outlined above, one of these, which used a similar matched control, showed differences in anxiety symptoms within each group (intervention and control). The remaining study also showed a difference between the control and intervention group. However, it favoured the control group, who received no intervention, at 4 month follow up.

***Emotional and behavioural difficulties***

Four studies did not show a difference in emotional and behavioural difficulties between the control and intervention groups, with one of these only exploring conduct difficulties. However, in one of the studies looking at emotional and behavioural difficulties an active control group of the same intervention was used and found a reduction in emotional and behavioural difficulties in both arms. In another study, no difference was observed on emotional or behavioural difficulties. However, a difference in peer problems, favouring the intervention group was found at follow up (length of time unclear). In this instance, the control group received no intervention.

In the other two studies, a difference in emotional and behavioural difficulties, favouring the intervention group was found. In one of these studies, this was at 6 days post intervention and the control group received no intervention. In the other, this was at 12 month follow up and a wait list control was used.

[11] Age ranges requested by the NCST

***Internalising and externalising difficulties***

One study did not show any difference between the control and intervention groups on internalising difficulties. However, an active control group of the same intervention was used and found a reduction in internalising difficulties in both arms. One study found no difference on internalising and externalising difficulties between the intervention and control at 12 month follow up. In this instance, the control group received no intervention. In another study, a difference favouring the intervention group for overall internalising and externalising difficulties was found at 10 week follow up. The control group received no intervention.

***Other constructs***

One study that explored mental health service use did not find differences between the control and intervention group. One study explored self-reported suicide attempts, and the intervention group reported reduced suicide attempts over a 24-month period. The active control group also reported reduced suicide attempts, but unlike the intervention group, this was not statistically significant.

There is a mixed picture when exploring positive and negative affect, this was only explored in one study, across three programmes, all of which were a similar length of time, but emphasised different activities/ elements. The study found that when comparing the activities to a prospective control post intervention, one programme improved affect for the intervention group, one made affect worse in the intervention group, and for the other there was no difference. For the one where there was a positive impact favouring the intervention, an embedded social and emotional learning approach was used.

## Activities and programmes aimed at those aged 15-25 'older adolescents and young adults'

***Study details***

Eight studies were included, detailing nine youth sector provision activities and programmes (5–8,11,18,20,21). All studies used an RCT design. See Table A11 in the Appendix.

***Measures and outcomes***

Four studies explored depressive symptoms, three studies examining four programmes explored anxiety symptoms, one study explored emotional difficulties, one internalising and externalising difficulties, and one mental health service use.

***Depressive symptoms***

Three studies exploring depressive symptoms showed no difference between the control and intervention groups. One study found a difference in favour of the intervention group at 1 week follow up. In this instance, an active control was used.

***Anxiety symptoms***

One study did not show a difference in anxiety symptoms between the control and intervention group. Another study, detailing two programmes, showed mixed results, with one programme showing an impact on anxiety symptoms favouring the intervention group, whilst the other programme reported no impact. Follow up was not reported and both were compared to no intervention. Lastly, one study found a difference, in favour of the intervention group at 1 week follow up and used an active control.

***Emotional difficulties***

One study explored emotional difficulties, and differences were found between the control and intervention groups, favouring the intervention group at 1 week follow up. This study used a wait list control.

***Internalising and externalising difficulties***

One study explored internalising and externalising difficulties, and differences were found between the control and intervention groups, favouring the intervention group at 1 week follow up. This study used an active control.

***Mental health service use***

One study that explored mental health service use did not find differences between the control and intervention group.

***What does this evidence tell us?***

Overall, there is no clear indication that age of the young people receiving the youth sector activity or provision impacts mental health outcomes. Most studies show mixed results and others show tentative evidence of support as they only include one study demonstrating a positive impact (e.g. for emotional difficulties, as well as internalising and externalising difficulties for those aged 15-25).

# Discussion

This review set out to answer if youth sector provision activities and programmes impacted on mental health outcomes. A wide range of outcomes were explored, however, common constructs across multiple studies included anxiety symptoms, depressive symptoms, emotional and behavioural difficulties, as well as internalising and externalising difficulties. Similarly, there were not only a wide range of activities and programmes, but also a wide range of socio-demographic and clinical characteristics being targeted. When it came to the range of activities and programmes, a greater number were geared towards 'Mentoring, coaching and peer support', Sports and physical health', and 'Residentials and camps'. There was also a greater frequency of programmes aimed at young people aged 11-14.

## What do the findings of this review show?

In most instances, only a small number of studies fell under each category, so any findings and conclusions should be treated cautiously. However, there is some evidence that activities and programmes which fell under the category **'music, arts, recreation and community activities' can positively impact on internalising and externalising difficulties, as well as anxiety and depressive symptoms,** at least in the short term. There is also evidence to suggest that in certain instances, both **one on one and group mentoring can impact on depressive symptoms, as well as emotional and behavioural difficulties. Evidence from studies also indicated that universal activities and programmes can positively impact emotional and behavioural difficulties,** as well as some evidence to suggest that such universal programmes may also **help with depressive symptoms.**

A previous review that this work built upon (1) identified 29 studies that focused on both mental health and wellbeing outcomes in relation to youth sector provision. It concluded that **'music, arts, recreation and community activities' could positively impact on mental health and wellbeing**. Our review lends support to this specifically for mental health. Our findings for 'music, arts, recreation and community activities' are in also in line with wider reviews where there is evidence of impact, but previous reviews have also cautioned over-interpretation due to the small number of studies (54). Similarly, the previous review (1) also found that **some mentoring programmes positively impacted mental health and wellbeing outcomes, whilst others did not**. Our review also supports this finding specifically for mental health.

Conversely, the previous review (1) concluded that both **'residentials and camps', as well as 'sport and physical health'** positively impact on mental health and wellbeing. This review does not support these findings due to the **small number of studies and outcomes** but does suggest that there are **tentative results on specific outcomes,** which require further work for more definitive conclusions. Taking these reviews together, this may suggest that 'residentials and camps', as well as 'sport and physical health' may have a greater impact on wellbeing, rather than mental health symptoms, as the previous review included concepts such as self-efficacy, self-concept and positive adjustment when making their conclusions.

Differences between our findings and the previous review (1) may also in part be explained by whether the intervention was universal or targeted. Whilst this was not explicitly examined in the previous review (1), our findings suggest that universal activities and programmes can positively impact on emotional and behavioural difficulties, as well as some evidence to suggest that such universal programmes may also help with depressive symptoms. Such findings fit with the wider literature on universal, youth programmes based in schools for tackling anxiety and depressive symptoms which have been found to have small or modest effects (55–57). This may also suggest that such **universal youth sector provision activities and programmes** are better suited to tackling such symptoms before young people become clinically symptomatic and therefore **are 'immunising' or 'protecting' young people from later difficulties.**

Other categories and questions asked in this review have produced **mixed, or inconclusive findings**. Some possible **reasons** for this are outlined below:

- For targeted interventions, there were a **broad range of socio-demographic and clinical characteristics being targeted,** including specific genders, ethnicities, ages and those with and without clinical symptoms. This makes direct comparisons across this area difficult. Where a positive impact has been found with a specific population, but there is only one study exploring this, further research should be undertaken to see if similar youth sector provision activities and programmes can also produce a positive impact.
- **Whether mental health constructs were the primary or secondary aim and focus of the intervention were not examined.** This means that programmes whose primary focus was to improve mental health outcomes were also explored alongside those where such outcomes were less of a focus and may be more tangentially related to the activity or programme. Future research should investigate any differences between primary and secondary outcomes on youth sector provision and mental health.

## Methodological issues in the field

Activities and programmes in this review, as well as previous reviews (1), were **skewed towards 'mentoring, coaching and/or peer support',** which were in general, funded by established organisations and tended to have more resources, as well as more participants involved. Over the next few years, this may begin to change with the national and international rollout of social prescribing (58) including the use of studies with control groups (59,60) which are directly young people to a plethora of different activities, including arts, sports, outdoor and cultural activities (61).

Outside of 'mentoring, coaching and/or peer support', many activities and programmes that were studied had **short follow up periods** for assessing impact, including immediately post intervention, 1 week and 3 months. Whilst this is useful in assessing initial impact, further research should be undertaken to understand if effects, where found, can be maintained, or whether top up, or booster sessions are needed, and what the frequencies of these may be. Similarly, longer follow up would also be beneficial for activities and programmes which did not show an initial impact, as it may be that some time is needed for the intervention effects to be felt as young people embed the skills and opportunities the programmes provided them.

**Most activities and programmes were not underpinned by theory.** The use of theory is important as it not only allows for the identification of causal determinants of change and mediators but also allows a space in which theories (and therefore components of activities and programmes) can be comprehensively tested and evaluated (62). Importantly, reviews of interventions linked to health outcomes indicate that the use of theory can lead to better outcomes (63,64).

In the majority of studies, **fidelity and dosage to the activity and programme were not examined**. Thus, the degree to which young people engaged or participated in a particular activity or programme was often unclear. Previous studies looking at school-based interventions on mental health outcomes have found differences in intervention effects, depending on whether programmes and activities were fully implemented as intended or not (65). Thus, researchers and intervention developers should consider how to measure fidelity and dosage when developing and evaluating youth sector provision activities and programmes.

## Strengths and limitations

The term 'youth sector provision' is broad and can encapsulate many different activities and programmes. To try and capture the literature that may fall under 'youth sector provision', the review team worked with both NCST and built upon previous in-depth work (1) that worked with a wide range of stakeholders, including young people, to come up with agreed definitions, which have been used as categories in this review. We also undertook an extensive search strategy, including searching data archives and websites. However, despite this, it is possible that some studies focusing on activities and programmes were missed due to them being named differently. We were also limited to studies and programmes published in English, which also may mean some records may have been missed.

**Most studies and programmes included** in this review **were conducted outside the UK,** with the US being the most common country where evaluations were conducted. Thus, any conclusions drawn from this review need to be treated cautiously as it is **unclear on how these programmes may translate across or need to be adapted to be implemented in UK settings,** which can impact effectiveness (66). Moreover, there are some populations that have been targeted with youth sector provision activities (e.g. Native Americans), which have unique historical and cultural considerations. How and if, findings may translate across to other underserved and minority populations is unclear.

**Sample sizes of included studies varied** quite **substantially**, ranging from 34 to 4,497. For the larger studies, this means that participant numbers were likely big enough to ensure adequate power. Simply put, power is the probability of not making a Type II error (i.e. failing to reject a false null hypothesis in favour of a true alternative hypothesis) (67). However, for some of the smaller studies, it is likely that studies were underpowered and thus, findings should be treated cautiously.

More positively, in terms of the studies included, the majority (n=18) were rated as moderate and a further two rated as strong. This means that studies, and thus **conclusions, drawn in this review are underpinned by reasonable scientific robustness.** When it comes to specific quality assessment metrics, both 'study design' and 'data collection methods' received a high number of strong ratings'. However, 'blinding of study participants and outcome assessors' received a high number of weak ratings, whilst the majority of studies scored moderate when it came to selection bias. To improve overall ratings, future evaluators may wish to employ blinding of outcome assessors (where possible), as well as to make sure that participants are representative of the populations they are intended to measure and use strategies such as opt out consent, where ethically valid.

## Future directions for research, practice and policy

When it comes to research, the overall **evidence base is underdeveloped, particularly in areas such as 'citizenship, community service and volunteering, 'music, arts, recreation and community', and 'employment, skills and enterprise',** which makes it difficult to draw robust conclusions about the impact of such activities and programmes. On top of this, the majority of activities and programmes were conducted outside the UK, and thus, the transportability of such interventions, and the effect of any adaptations on outcomes, needs to be carefully examined (66). As such, there needs to be **better investment, particularly in the UK when it comes to investigating youth sector provision activities, drawing on robust scientific methods**. Moreover, given the lack of longer term follow up, studies should aim to look at programmes over a year long period, to see if initial effects are sustained, or if a delayed impact occurs once young people have embedded the skills and opportunities the programmes provided them.

Given the diversity in activities and programmes even within the same overarching category, **researchers may wish to focus on measuring the 'active ingredients'** (i.e. the smallest components of activities or programmes that, on their own and in favourable circumstances, can bring about change) (68). This is because grouping interventions by overarching approach neglects the unique features within each, which may cause individuals to behave and respond in different ways. If, youth sector provision activities and programmes are aimed at creating new skills, behaviours and opportunities then it is important, within each approach, to understand the specific ways in activities and programmes facilitate this. Additionally, **researchers should also measure what the mechanisms of action** are by which engagement with youth sector provision leads to improved mental health. Frameworks, such as the Behaviour Change Wheel (68), the Multi-Level Framework of Mechanisms of Action for Leisure activities (69), and INNATE framework (70) are some proposed solutions to addressing and measuring active ingredients and mechanisms of action.

When it comes to **practitioners and those involved with service design, a solid understanding of all aspects of the activity or programme that can be communicated with evaluators** would be beneficial. This would help address issues such as a lack of underlying theory, or theory of change, as well as help researchers understand and record data on fidelity and dosage. Tool such as the EBPU logic model (71), TIDieR checklist (72), INNATE framework (70) and Skills Builder Framework (73) may be helpful resources for practitioners and those involved with service design into breaking down the activity or its programme into its component parts.

When it comes to policy, we suggest that to increase the evidence base, there should be a **commitment from those investing in youth sector provision that there should be high quality, robust scientific evaluations of such services, drawing on a RCT or QED design**. Importantly, this should include longer term follow up to adequately assess the impact of the activity or programme. Second, **as youth social prescribing is beginning to receive both national and international attention** (74), **policy makers should consider how best to include youth sector provision within this,** particularly as there is evidence of promise in social prescribing for youth mental health (75). For example, this could be via connecting youth sector provision with local link workers, via a national directory or local communities of practice, as well as making sure there are funds available to help address any health inequalities (e.g. for travelling to the activity or for a piece of clothing or equipment) so that young people can fully engage in youth sector provision.

# References

1. SQW. Youth provision and life outcomes. London; 2024.
2. Department of Health. The relationship between wellbeing and health . London; 2014.
3. Wallace SS, Barak G, Truong G, Parker MW. Hierarchy of Evidence Within the Medical Literature. Hosp Pediatr. 2022 Aug 1;12(8):745–50.
4. Thomas BH, Ciliska D, Dobbins M, Micucci S. A process for systematically reviewing the literature: Providing the research evidence for public health nursing interventions. Worldviews on Evidence Based Nursing. 2004;1(3):176–84.
5. Kirkman E, Saunders M, Emanuel N, Larkin C. Evaluating Youth Social Action: Does Participating in Social Action Boost the Skills Young People Need to Succeed in Adult Life? London; 2019.
6. Chen CJ, Chen YC, Lee MY, Wang CH, Chang LC, Chen MF. Effects of a group music-based intervention in improving attachment and psychosocial adaptation in adolescents with parental attachment insecurity: A randomized trial. Psychol Music. 2022 Sep 1;50(5):1616–36.
7. Osborn TL, Ndetei DM, Sacco PL, Mutiso V, Sommer D. An arts-literacy intervention for adolescent depression and anxiety symptoms: outcomes of a randomised controlled trial of Pre-Texts with Kenyan adolescents. EClinicalMedicine. 2023 Dec 1;66.
8. Heller SB. When scale and replication work: Learning from summer youth employment experiments. J Public Econ. 2022 May 1;209.
9. DuBois DL, Keller TE. Investigation of the Integration of Supports for Youth Thriving Into a Community-Based Mentoring Program. Child Dev. 2017 Sep 1;88(5):1480–91.
10. Herrera C, DuBois DL, Heubach J, Grossman JB. Effects of the Big Brothers Big Sisters of America Community-Based Mentoring Program on social-emotional, behavioral, and academic outcomes of participating youth: A randomized controlled trial. Child Youth Serv Rev. 2023 Jan 1;144.
11. Leathers SJ, Holtschneider C, Ludington M, Ross E V., Barnett JL. Mentoring, employment assistance, and enhanced staff outreach for older youth in care: Outcomes from a randomized controlled trial. Child Youth Serv Rev. 2023 Oct 1;153.
12. Lerner RM, Freund AM, De Stefanis I, Habermas T. Understanding Developmental Regulation in Adolescence: The Use of the Selection, Optimization,and Compensation Model. Hum Dev. 2001;44(1):29–50.
13. Haddock SA, Weiler LM, Lee H, Henry KL, Lucas-Thompson R, Zimmerman TS, et al. Does Organizing Mentor-Mentee Matches into Small Groups Enhance Treatment Effects in a Site-Based Mentoring Program for Adolescents? Results of a Randomized Controlled Trial. J Youth Adolesc. 2020 Sep 1;49(9):1864–82.
14. Hanlon TE, Simon BD, O'Grady KE, Carswell SB, Callaman JM. The effectiveness of an after-school program targeting urban African American youth. Educ Urban Soc. 2009 Nov;42(1):96–118.
15. Özler B, Hallman K, Guimond MF, Kelvin EA, Rogers M, Karnley E. Girl Empower – A gender transformative mentoring and cash transfer intervention to promote adolescent wellbeing: Impact findings from a cluster-randomized controlled trial in Liberia. SSM Popul Health. 2020 Apr 1;10.
16. Bhatia K, Rath S, Pradhan H, Samal S, Copas A, Gagrai S, et al. Effects of community youth teams facilitating participatory adolescent groups, youth leadership activities and livelihood promotion to improve school attendance, dietary diversity and mental health among adolescent girls in rural eastern India (JIAH trial): A cluster-randomised controlled trial. SSM Popul Health. 2023 Mar 1;21.
17. Wong K, Morris S, Wallace S, Roberts A, Gray P, Burchell E. Rugby Football League-Inspiring Futures Educate Mentoring Programme Feasibility and pilot trial report About the Youth Endowment Fund

[Internet]. 2023. Available from: www.youthendowmentfund.org.uk

18. Conley CS, Hundert CG, Charles JLK, Huguenel BM, Al-khouja M, Qin S, et al. Honest, open, proud–college: Effectiveness of a peer-led small-group intervention for reducing the stigma of mental illness. Stigma Health. 2020 May;5(2):168–78.
19. Wong K, Morris S, Wallace S, Roberts A, Gray P, Burchell E. Empire Fighting Chance: Boxing-based mentoring Feasibility and pilot trial report About the Youth Endowment Fund [Internet]. 2023. Available from: www.youthendowmentfund.org.uk
20. Rotheram-Borus MJ, Tomlinson M, Durkin A, Baird K, DeCelles J, Swendeman D. Feasibility of Using Soccer and Job Training to Prevent Drug Abuse and HIV. AIDS Behav. 2016 Sep 1;20(9):1841–50.
21. Pavarini G, Reardon T, Hollowell A, Bennett V, Lawrance E, Brooks-Hall E, et al. Online peer support training to promote adolescents' emotional support skills, mental health and agency during COVID-19: Randomised controlled trial and qualitative evaluation. Eur Child Adolesc Psychiatry. 2023 Jun 1;32(6):1119–30.
22. Chung JOK, Li WHC, Ho KY, Lam KKW, Cheung AT, Ho LLK, et al. Adventure-based training to enhance resilience and reduce depressive symptoms among juveniles: A randomized controlled trial. Res Nurs Health. 2021 Jun 1;44(3):438–48.
23. Smith BH, Kim H, Esat G, Izuno-Garcia AK, Meinert A, Banks Hawthorne D, et al. Comparing Three Overnight Summer Camp Experiences for Marginalized Middle School Students: Negative, Neutral, and Positive Results. Journal of Experiential Education. 2022 Jun 1;45(2):136–56.
24. Williams IR, Rose LM, Raniti MB, Waloszek J, Dudgeon P, Olsson CA, et al. The impact of an outdoor adventure program on positive adolescent development: a controlled crossover trial. Journal of Outdoor and Environmental Education. 2018 Jul 1;21(2):207–36.
25. Tingey L, Larzelere F, Goklish N, Rosenstock S, Jennings Mayo-Wilson L, O'Keefe V, et al. Behavioral and Mental Health outcomes from an RCT of a Youth Entrepreneurship Intervention among Native American Adolescents. Child Youth Serv Rev. 2020 Dec 1;119.
26. Williams IR. Depression Prevention and Promotion of Emotional Wellbeing in Adolescents Using a Therapeutic Outdoor Adventure Intervention: Development of a Best Practice Model [Doctoral thesis]. [Melbourne]: University of Melbourne; 2009.
27. Nathan S, Kemp L, Bunde-Birouste A, Mackenzie J, Evers C, Shwe TA. "We wouldn't of made friends if we didn't come to Football United": the impacts of a football program on young people's peer, prosocial and cross-cultural relationships [Internet]. 2013. Available from: http://www.
28. Richards J, Foster C, Townsend N, Bauman A. Physical fitness and mental health impact of a sport-for-development intervention in a post-conflict setting: Randomised controlled trial nested within an observational study of adolescents in Gulu, Uganda. BMC Public Health. 2014 Jun 18;14(1).
29. Soytürk M, Öztürk ÖT. Ders Disi Sporla Ilgili Oyunlarin Lise Ögrencilerinin Davranis Örüntülerine Etkisi. Egitim ve Bilim. 2020;45(202):327–43.
30. Skoufa L, Makri E, Barkoukis V, Papagianni M, Triantafyllou P, Kouidi E. Effects of a Diabetes Sports Summer Camp on the Levels of Physical Activity and Dimensions of Health-Related Quality of Life in Young Patients with Diabetes Mellitus Type 1: A Randomized Controlled Trial. Children. 2023 Mar 1;10(3).
31. Davis O, Watson R, Dias R, Zia K, Laker V. Home Goals: A randomised controlled trial to examine the feasibility of implementing a combined mental health psychoeducation and exercise-based intervention in young people and adolescents. . Draft provided by NCST. 2024;
32. Australian Sports Comission. Active after-school communities. Playing for life: A guide to help coaches and teachers improve sport-related games. . 2007.

33. Hayes SC, Luoma JB, Bond FW, Masuda A, Lillis J. Acceptance and Commitment Therapy: Model, processes and outcomes. Behaviour Research and Therapy. 2006 Jan;44(1):1–25.
34. Mind. Mind. 2017 [cited 2025 Jan 5]. Mental health problems - and introduction . Available from: https://www.mind.org.uk/information-support/types-of-mental-health-problems/mental-health-problems-introduction/about-mental-health-problems/
35. World Health Organisation. World Health Organisation. 2022 [cited 2025 Jan 5]. Mental disorders. Available from: https://www.who.int/news-room/fact-sheets/detail/mental-disorders
36. American Psychiatric Association. Diagnostic and statistical manual of mental disorders [Internet]. 5th ed. 2013 [cited 2024 Dec 29]. Available from: https://doi.org/10.1176/appi.books.9780890425596
37. Weissman MM, Orvaschel H, Padian N. Center for Epidemiological Studies Depression Scale for Children. PsycTESTS Dataset. 2013.
38. Angold A, Costello EJ, Messer SC, Pickles A, Winder, F. &, Silver D. Development of a short questionnaire for use in epidemiological studies of depression in children and adolescents. Int J Methods Psychiatr Res. 1995;5:237– 249.
39. Kroenke K, Spitzer RL, Williams JBW. The PHQ-9. J Gen Intern Med. 2001 Sep;16(9):606–13.
40. Betancourt TS, Bass J, Borisova I, Neugebauer R, Speelman L, Onyango G, et al. Assessing local instrument reliability and validity: a field-based example from northern Uganda. Soc Psychiatry Psychiatr Epidemiol. 2009 Aug;44(8):685–92.
41. Reynolds CecilR, Richmond BO. Revised Children's Manifest Anxiety Scale. PsycTESTS Dataset. 2011.
42. Spielberger CD. State-Trait Anxiety Inventory for Adults. PsycTESTS Dataset. 2012.
43. Craske M, Wittchen U, Bogels S, Stein M, Andrews G, Lebeu R. Severity Measure for Generalized Anxiety Disorder—Child Age 11–17 [Measurement instrument]. . 2013.
44. Spitzer RL, Kroenke K, Williams JBW, Löwe B. Generalized Anxiety Disorder 7. PsycTESTS Dataset. 2011.
45. Perrin S, Meiser-Stedman R, Smith P. The Children's Revised Impact of Event Scale (CRIES): Validity as a Screening Instrument for PTSD. Behavioural and Cognitive Psychotherapy. 2005 Oct 14;33(4):487–98.
46. Conners CK. Conners Rating Scales-Revised. In: Maruish ME, editor. The use of psychological testing for treatment planning and outcomes assessment. 2nd ed. Lawrence Erlbaum Associates Publishers.; 1999. p. 467–95.
47. Goodman R. The strengths and difficulties questionnaire: A research note. Journal of Child Psychology and Psychiatry. 1997;38(5):581–6.
48. Watson D, Clark LA, Tellegen A. Development and validation of brief measures of positive and negative affect: The PANAS scales. J Pers Soc Psychol. 1988;54(6):1063–70.
49. Song L yu, Singh J, Singer M. The Youth Self-Report inventory: A study of its measurements fidelity. Psychol Assess. 1994 Sep;6(3):236–45.
50. Achenbach TM. The Child Behavior Checklist and related instruments. . In: Maruish ME, editor. The use of psychological testing for treatment planning and outcomes assessment. 2nd ed. Lawrence Erlbaum Associates Publishers.; 1999. p. 429–66.
51. Achenbach TM, McConaughy SH, Ivanova MY, Rescorla LA. Manual for the ASEBA Brief Problem Monitor (BPM). . Burlington, VT: : University of Vermont, Research Center for Children, Youth, & Families; 2011.
52. US Centres for Disease Control and Prevention. 2021 State and Local Youth Risk Behavior Survey. 2021. Youth Risk Behavior Surveillance System (YRBSS).

53. Tingey L, Larzelere F, Goklish N, Rosenstock S, Mayo-Wilson LJ, Pablo E, et al. Entrepreneurial, economic, and social well-being outcomes from an RCT of a youth entrepreneurship education intervention among native American adolescents. Int J Environ Res Public Health. 2020 Apr 1;17(7).

54. Fancourt D, Warran K, Aughterson H. Evidence Summary for Policy The role of arts in improving health & wellbeing [Internet]. London; 2020 [cited 2025 Jan 15]. Available from: https://assets.publishing.service.gov.uk/media/5f9812268fa8f543f786b37f/DCMS_report_April_2020_finalx__1_.pdf

55. Stockings EA, Degenhardt L, Dobbins T, Lee YY, Erskine HE, Whiteford HA, et al. Preventing depression and anxiety in young people: a review of the joint efficacy of universal, selective and indicated prevention. Psychol Med. 2016 Jan 28;46(1):11–26.

56. Johnstone KM, Kemps E, Chen J. A Meta-Analysis of Universal School-Based Prevention Programs for Anxiety and Depression in Children. Clin Child Fam Psychol Rev. 2018 Dec 14;21(4):466–81.

57. Werner-Seidler A, Perry Y, Calear AL, Newby JM, Christensen H. School-based depression and anxiety prevention programs for young people: A systematic review and meta-analysis. Clin Psychol Rev. 2017 Feb;51:30–47.

58. National Academy for Social Prescribing. Social Prescribing Around the World [Internet]. London; 2014 [cited 2024 Nov 12]. Available from: https://socialprescribingacademy.org.uk/media/thtjrirn/social-prescribing-around-the-world-2024.pdf

59. Fancourt D, Burton A, Bu F, Deighton J, Turner R, Wright J, et al. Wellbeing while waiting evaluating social prescribing in CAMHS: study protocol for a hybrid type II implementation-effectiveness study. BMC Psychiatry. 2023 May 10;23(1):328.

60. Hayes D, Burton A, Bu F, Qualter P, Humphrey N, Fancourt D. The Social Biobehavioual Research Group (University College London). 2024 [cited 2025 Jan 5]. INcreasing AdolesCent social and community supporT (INACT). Available from: https://sbbresearch.org/projects/inact-increasing-adolescent-social-and-community-support/

61. National Academy for Social Prescribing. National Academy for Social Prescribing,. 2021 [cited 2023 Aug 13]. What is Social Prescribing? Available from: https://socialprescribingacademy.org.uk/what-is-social-prescribing/#:~:text=Social%20prescribing%20connects%20people%20to,on%20what%20works%20for%20them.https://www.england.nhs.uk/personalisedcare/workforce-and-training/social-prescribing-link-workers/#:~:text=Social%20prescribing%20link%20workers%20connect,housing%2C%20financial%20and%20welfare%20advice.

62. Davis R, Campbell R, Hildon Z, Hobbs L, Michie S. Theories of behaviour and behaviour change across the social and behavioural sciences: A scoping review. Health Psychol Rev. 2015;9(3):323–44.

63. Albada A, Ausems MG, Bensing JM, van Dulmen S. Tailored information about cancer risk and screening: A systematic review. Patient Educ Couns. 2009;77(2):151–71.

64. Noar SM, Benac CN, Harris MS. Does tailoring matter? Meta-analytic review of tailored print health behavior change interventions. Psychol Bull. 2007;133(4):673.

65. Ashworth E, Panayiotou M, Humphrey N, Hennessey A. Game On—Complier Average Causal Effect Estimation Reveals Sleeper Effects on Academic Attainment in a Randomized Trial of the Good Behavior Game. Prevention Science. 2020 Feb 20;21(2):222–33.

66. McKleroy VS, Galbraith JS, Cummings B, Jones P, Harshbarger C, Collins C, et al. Adapting Evidence–Based Behavioral Interventions for New Settings and Target Populations. AIDS Education and Prevention. 2006 Aug;18(supp):59–73.

67. Suresh K, Chandrashekara S. Sample size estimation and power analysis for clinical research studies. J Hum Reprod Sci. 2012;5(1):7.

68. Michie S, Atkins L, West W. The Behaviour Change Wheel: A guide to designing interventions. London: Silverback Publishing; 2014.

69. Fancourt D, Aughterson H, Finn S, Walker E, Steptoe A. How leisure activities affect health: a narrative review and multi-level theoretical framework of mechanisms of action. Lancet Psychiatry [Internet]. 2021 Apr;8(4):329–39. Available from: https://linkinghub.elsevier.com/retrieve/pii/S2215036620303849
70. Warran K, Burton A, Fancourt D. What are the active ingredients of 'arts in health' activities? Development of the INgredients iN ArTs in hEalth (INNATE) Framework. Wellcome Open Res. 2022 Apr 29;7:10.
71. Wolpert M, Sharpe H, Humphrey N, Patalay P, Deighton J. EBPU Logic Model. London: CAMHS Pre. London; 2016.
72. Hoffmann TC, Glasziou PP, Boutron I, Milne R, Perera R, Moher D, et al. Better reporting of interventions: template for intervention description and replication (TIDieR) checklist and guide. BMJ [Internet]. 2014 Mar 7;348(mar07 3):g1687–g1687. Available from: https://www.bmj.com/lookup/doi/10.1136/bmj.g1687
73. Ravenscroft T, Baker L. Towards a Universal Framework for Essential Skills A Review of the Skills Builder Framework [online] [Internet]. 2020 [cited 2025 Jan 15]. Available from: https://uploadsssl.webflow.com/5a86b2cd68b41700017162ca/5ec2b44c1cac8f93cea68444_Essential%20 Skills%20 Taskforce%20Report%20-%20Final%20(May%202020).pdf
74. National Academy for Social Prescribing. Social Prescribing Around the World: A World Map of Global Developments in Social Prescribing Across Different Health System Contexts. London; 2023.
75. Hayes D, Jarvis-Beesley P, Mitchell D, Polley M., Husk K., [On behalf of the NASP Academic Partners Collaborative]. The impact of social prescribing on children and young people's mental health and wellbeing'. [Internet]. London; 2023 [cited 2023 Jun 21]. Available from: https://socialprescribingacademy.org.uk/media/lrif2emh/evidence-review-the-impact-of-social-prescribing-on-children-and-young-peoples-health-and-wellbeing.pdf

# Appendices

Si Search strategy S1

Databases: PsycINFO, Embase, Medline, Cochrane Libraries, and ProQuest.

Search fields: Title, Abstract, Keyword

1. Young people

(youth OR "young pe*" OR teen* OR adolescen* OR "young adult")

AND

2. Comparison group

(RCT OR experiment* OR randomi* OR "propensity score matching" OR "difference-in-difference" OR "difference in difference" OR "regression discontinuity" OR "quasi-ex*" OR "time series" OR “instrumental variable” OR “impact OR effectiveness OR (trial OR evaluation)”)

AND

3. Youth sector provision

(Citizenship OR “community service” OR volunteer* OR Music OR art(s)* recreation OR communit* OR employ* OR skill* OR enterprise OR mentor* OR coach* OR “peer support” OR residential* and camp* OR sport*

AND

4. Mental health

("mental health" OR "mental wellness" OR anxiety OR depression OR stress OR Psychological health OR Psychological adjustment)

*Table A0: Quality Assessment Method for risk of bias*

| Author | Design | Selection Bias | Study design | Confounders | Blinding | Data Collection | Withdrawal and Dropout | Total Score |
|---|---|---|---|---|---|---|---|---|
| Bhatia, 2023 | RCT | Strong | Strong | Weak | Moderate | Strong | Strong | Moderate |
| Chen, 2022 | RCT | Moderate | Strong | Strong | Weak | Strong | Strong | Moderate |
| Chung, 2021 | RCT | Moderate | Strong | Strong | Weak | Strong | Strong | Moderate |
| Conley, 2020 | RCT | Moderate | Strong | Strong | Weak | Strong | Moderate | Moderate |
| Davis, 2024 | RCT | Moderate | Strong | Strong | Weak | Strong | Moderate | Moderate |
| DuBois, 2017 | RCT | Moderate | Strong | Strong | Weak | Strong | Moderate | Moderate |
| Haddock, 2020 | RCT | Moderate | Strong | Strong | Weak | Strong | Strong | Moderate |
| Hanlon, 2009 | QED | Moderate | Strong | Strong | Weak | Strong | Strong | Moderate |
| Heller, 2022 | RCT | Moderate | Strong | Strong | Weak | Strong | Moderate | Moderate |
| Herrera, 2023 | RCT | Moderate | Strong | Strong | Weak | Strong | Moderate | Moderate |
| Kirkman 2019 | RCT | Weak | Strong | Weak | Weak | Weak | Weak | Weak |
| Leathers, 2023 | RCT | Moderate | Strong | Strong | Weak | Strong | Strong | Moderate |
| Nathan, 2013 | QED | Moderate | Strong | Weak | Weak | Strong | Weak | Weak |
| Osborn, 2023 | RCT | Moderate | Strong | Strong | Weak | Strong | Strong | Moderate |
| Ozler, 2020 | RCT | Strong | Strong | Strong | Weak | Strong | Strong | Moderate |
| Pavarini, 2023 | RCT | Moderate | Strong | Strong | Moderate | Strong | Strong | Strong |
| Richards, 2014 | RCT | Strong | Strong | Strong | Moderate | Strong | Strong | Strong |
| Rotheram-Borus, 2016 | RCT | Moderate | Strong | Strong | Weak | Strong | Moderate | Moderate |
| Skoufa, 2023 | RCT | Moderate | Strong | Strong | Weak | Strong | Strong | Moderate |
| Smith 2022 | QED | Moderate | Strong | Strong | Weak | Strong | Moderate | Moderate |
| Soyturk, 2020 | RCT | Weak | Strong | Strong | Weak | Strong | Weak | Weak |
| Tingey, 2020 | RCT | Moderate | Strong | Strong | Weak | Strong | Strong | Moderate |
| Williams, 2018 | QED | Moderate | Strong | Strong | Weak | Strong | Strong | Moderate |
| Wong, 2023a | RCT | Moderate | Strong | Weak | Weak | Strong | Moderate | Weak |
| Wong 2023b | RCT | Moderate | Strong | Weak | Weak | Strong | Strong | Weak |

Total score:

Strong = no weak ratings

Moderate = one weak rating

Weak = two or more weak ratings

## Table A1: One-off activities and programmes

| Author, year | Country | Design | Control | Gender | Age range (mean) | Ethnicity (% largest category) | Intervention | Youth Sector Category | Outcome | Questionnaire | Outcome reporter | Depressive symptoms | Anxiety symptoms | Emotional and behavioural difficulties | Positive and Negative affect |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chung, 2021 | Hong Kong | RCT | Active control: 2 days of leisure activities | Mixed | Aged 12-15 (M = 13.00) | Not specified | Adventure based-residential | Residentials and camps | Depressive symptoms | Centre for Epidemiologic Studies Depression Scale for Children (CES-DC) | Young person | ✓ | | | |
| Osborn, 2023 | Kenya | RCT | Active control: study skills | Mixed | Aged 12-19 (M = 16.36) | Not specified | A creative arts-literacy intervention that involves five 1-h sessions spaced 1 day apart, including between-session homework exercises that encourage students to go off on tangents | Music, arts, recreation and community | Anxiety symptoms | Generalized Anxiety Disorder Screener 7 | Young person | ✓ | ✓ | | |
| | | | | | | | | | Depressive symptoms | Centre for Epidemiologic Studies Depression Scale for Children | Young person | | | | |
| Pavarini, 2023 | UK | RCT | Waitlist control | Mixed | Aged 16-18 (M = 16.39) | Mixed (46% White British) | Interactive and informative sessions were delivered by peer support experts to the full group of 50 youth, and sharing and hands-on activities were mostly delivered in small groups of 7 via breakout rooms or WhatsApp, each led by a group facilitator (Uplift Peer Support Training). | Mentoring, coaching and/or peer support | Emotional symptoms | Strengths and Difficulties Questionnaire | Young person | | | ✓ (emotional) | |
| Skoufa, 2023 | Greece | RCT | Active control: Family vacation | Mixed | Aged 7-18 (M = 12.65) | Not specified | 10-day diabetes summer sports camp | Sports and physical health AND Residentials and camps | Depressive symptoms | Centre for Epidemiologic Studies Depression Scale for Children | Young person | - | | | |
| Smith, 2022a | United States | QED | Prospective control: Those going to camp the next term | Mixed | Aged 11-14 (M = not specified | Mainly Black African Americans (84-100% depending on camp) | 3 different summer camps: (1) Experiential education camp [EEC] | Residentials and camps | Positive and negative affect | The Positive and Negative Affect Schedule | Young person | | | | X |
| Smith, 2022b | United States | QED | Prospective control: Those going to camp the next term | Mixed | Aged 11-14 (M = not specified) | Mainly Black African Americans (84-100% depending on camp) | (2) integrated and didactic education camp [IC] | Residentials and camps | Positive and negative affect | The Positive and Negative Affect Schedule | Young person | | | | ✓ |
| Smith, 2022c | United States | QED | Prospective control: Those going to camp the next term | Mixed | Aged 11-14 (M = not specified | Mainly Black African Americans (84-100% depending on camp) | (3) Recreational Camp [RC] | Residentials and camps | Positive and negative affect | The Positive and Negative Affect Schedule | Young person | | | | - |
| Williams, 2018 | Australia | QED | No intervention (cross over control) | Mixed | Aged 14-16 (M = 14.87) | Not specified | Seven-day outdoor adventure program intended to promote positive adjustment in young people | Residentials and camps | Anxiety symptoms | State-Trait Anxiety Inventory | Young person | - | - | ✓ | |
| | | | | | | | | | Depressive symptoms | Center for Epidemiologic Studies Depression scale | Young person | | | | |
| | | | | | | | | | Emotional and behavioural difficulties | Strengths and Difficulties Questionnaire | Young person | | | | |

RCT = Randomised Control Trial, QED = Quasi Experimental Design, EEC = Experiential Education camp, IC = Integrated Didactic and Experimental Camp, RC = Recreational Camp. integrated didactic and experimental camp. ✓ = Significant difference between the intervention and control group favouring the intervention,
- = No difference between the intervention and control group, X = Significant difference between the intervention and control group favouring the control

## Table A2: Time limited activities and programmes

| Author, year and Country | Design | Control | Gender | Age range (mean) | Ethnicity (% largest category) | Intervention | Youth Sector Category | Outcome | Questionnaire | Outcome reporter | Depressive symptoms | Anxiety symptoms | Emotional and behavioural difficulties | Internalising and externalising difficulties | Mental health service use | Suicide attempt |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chen, 2022<br>Taiwan | RCT | Active control: health education | Mixed | Aged 10-19<br>(M =17.07) | Not broken down but specified as Chinese and Taiwanese | Music group | Music, arts, recreation and community activities | Internalising and externalising difficulties | Chinese version of the Youth Self-Report (C-YSR) | Young person | | | | ✓ | | |
| Conley, 2020<br>United States | RCT | Wait list control | Mixed | Age range unspecified<br>(M =20.8) | Mixed (68.6% White) | Honest, Open, Proud–College - peer support group | Mentoring, coaching and peer support | Anxiety symptoms | Generalized Anxiety Disorder Screener | Young person | - | - | | | | |
| | | | | | | | | Depressive symptoms | CES-D | Young person | | | | | | |
| Davis, 2024<br>UK | RCT | Waitlist control | Not specified | Aged 11-17<br>(M = not specified) | Not specified | Home goals: six weekly online video-conference sessions involving half an hour of psychoeducation and half an hour of physical activity. | Sports and physical health | Depressive symptoms | Patient Health Questionnaire | Young person | X | X | | | | |
| | | | | | | | | Anxiety symptoms | Severity Measure for Generalized Anxiety Disorder | Young person | | | | | | |
| Haddock, 2020<br>United States | RCT | Active intervention: one to one mentoring | Mixed | Age range not specified<br>(M = 14.21) | Mixed (59% White American) | Group peer mentoring scheme (Campus Connections) | Mentoring, coaching and/or peer support | Emotional and behavioural difficulties | Strengths & Difficulties Questionnaire | Parent/guardian | - | - | - (emotional and behavioural) | - (internalising) | | |
| | | | | | | | | Anxiety symptoms | Revised Children's Manifest Anxiety Scale | Young person | | | | | | |
| | | | | | | | | Depressive symptoms | Centre for Epidemiologic Studies Depression Scale for Children Child | Young person | | | | | | |
| | | | | | | | | Internalising difficulties | Behaviour Checklist | Parent/guardian | | | | | | |
| Heller, 2022<br>United States | RCT | No intervention | Mixed | Aged 14-21<br>M = 15.64 | Mixed (77% Black American) | Professional development sessions throughout summer (Work ready) | Employment, skills and enterprise | Mental health service use | From social service records | Unclear | | | | | - | |
| Leathers, 2023<br>United States | RCT | Wait list control | Mixed | Aged 17-20<br>(M = 18.32) | Mixed (82% Black) | Adult Connections Team (ACT), an enhanced services intervention that involved outreach by a youth specialist and coordinated mentoring, job readiness training, and externship services | Mentoring, coaching and peer support AND Employment, skills and enterprise | Depressive symptoms | Centre for Epidemiologic Studies Depression Scale for Children | Young person | - | | | | | |

| Author, year and Country | Design | Control | Gender | Age range (mean) | Ethnicity (% largest category) | Intervention | Youth Sector Category | Outcome | Questionnaire | Outcome reporter | Depressive symptoms | Anxiety symptoms | Emotional and behavioural difficulties | Internalising and externalising difficulties | Mental health service use | Suicide attempt |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nathan, 2013<br>Australia | QED | No intervention | Mixed | Aged 13-18<br>(M =14.7) | Mixed (23% Afghan) | Football activities: (i) Regular Saturday and after school training, including coaching and mentorship (ii) Skill capacity building: (ii) community capacity building (iv) creating awareness of Football united and community issues (Football United) | Sports and physical health AND Mentoring Coaching and Peer Support | Emotional symptoms | Strengths & Difficulties Questionnaire | Young person | | | - (emotional dificulites)<br>- (hyperactivity)<br>✓(peer problems) | | | |
| | | | | | | | | Hyperactivity | Strengths & Difficulties Questionnaire | Young person | | | | | | |
| | | | | | | | | Peer problems | Strengths & Difficulties Questionnaire | Young person | | | | | | |
| Richards, 2014<br>Uganda | RCT | Waitlist control and a no intervention control | Mixed | Aged 11-14<br>(Mean not specified) | Not specified | Gum Marom Kids League (GMKL) using sport as a vehicle to promote physical fitness and mental health | Sports and physical health | Mental health status (depression and anxiety-like symptoms) | Acholi Psychosocial Assessment Instrument | Young person | X | X | | | | |
| Rotheram-Borus, 2016<br>South Africa | RCT | Wait list control | Male only | Aged 18-25<br>(M = 21.9) | Not specified | Coaching pre and post soccer and soccer practice 2 x a week and vocational skills support (8 weeks electrical or mechanical engineering) | Mentoring, coaching and peer support AND Sports and physical health AND Employment, Skills and enterprise | Depressive symptoms | Centre for Epidemiological Studies of Depression measure (CESD) | Young person | - | | | | | |
| Soyturk, 2020<br>Turkey | RCT | No intervention | Mixed | Aged 14/15<br>(Mean not specified) | Not specified | "Sports-related games", are games that ensure the active participation of all players, regardless of students' sports-related past or skill levels. | Sports and physical health | Internalising and externalising difficulties | Youth Self Report | Young person | | | | ✓ (internalising and total problems score) | | |
| Tingey, 2020<br>United States | RCT | Active control: three sports field says each lasting 3-4 hours | Mixed | Aged 13-16<br>(M = 14.38) | Native American | Residential summer camp, followed by six follow-on workshops (4-6 hours), held monthly. These explored topics such as problem-solving skills, financial literacy, entrepreneurship training, and small business design and culminated in a presentation of business ideas to local business leaders in the hope of receiving start-up funds (Arrowhead Business group intervention) | Residentials and camps AND Employment, skills and enterprise | Suicide attempts | Youth Risk Behaviour Survey | Young person | | | | | | ✓ |

| Author, year and Country | Design | Control | Gender | Age range (mean) | Ethnicity (% largest category) | Intervention | Youth Sector Category | Outcome | Questionnaire | Outcome reporter | Depressive symptoms | Anxiety symptoms | Emotional and behavioural difficulties | Internalising and externalising difficulties | Mental health service use | Suicide attempt |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Wong, 2023a UK | RCT | No intervention | Mixed | Aged 13-14 (Mean not specified) | Mixed (64% White) | EFC a 12-week group mentoring programme 'boxing-based mentoring', | Mentoring Coaching AND Sports and physical health | Emotional and behavioural difficulties | Strengths& Difficulties Questionnaire | Young person | | | - (emotional and behavioural difficulties) | | | |
| Wong, 2023b UK | RCT | Wait list control | Mixed | Aged 13-14 (Mean not specified) | Mixed (88% White) | Educate Mentoring: 12-week mentoring rugby programme | Mentoring Coaching AND Sports and physical health | Emotional and behavioural difficulties | Strengths& Difficulties Questionnaire | Young person | | | - (emotional and behavioural difficulties) | | | |

RCT = Randomised Control Trial, QED = Quasi Experimental Design, ✓ = Significant difference between the intervention and control group favouring the intervention, - = No difference between the intervention and control group, X = Significant difference between the intervention and control group favouring the control

## *Table A3: Regular activities and programmes*

| Author, year and Country | Design | Control | Gender | Age range (mean) | Ethnicity (% largest category) | Intervention | Youth Sector Category | Outcome | Questionnaire | Outcome reporter | Depressive symptoms | Anxiety symptoms | Emotional and behavioural difficulties | Internalising and externalising difficulties | PTSD risk |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bhatia, 2023<br>India | RCT | Active Control: Livelihood intervention only (part intervention) | Female only | Aged 10-19<br>(M = not specified) | Ethnicity not specified - 98% from Hotribe | Three components: (1) participatory adolescent groups, (2) youth leadership activities, and (3) livelihood promotion | Mentoring, coaching and peer support AND Employment, skills and enterprise | Internalising and externalising difficulties | Brief Problem Monitor-Youth | Unclear - adult (parent or teacher?) | | | | - | |
| DuBois, 2017<br>United States | RCT | Active control: standard peer mentoring | Mixed | Aged 10-16<br>(M = 12.19) | Mixed (50.5% Black or African American) | Peer mentoring scheme (Big Brothers, Big Sisters) | Mentoring, coaching and/or peer support | Youth problem behaviour (conduct subscale) | Strengths and Difficulties Questionnaire | Young person | | | - (conduct difficulties) | | |
| Hanlon, 2009<br>United States | QED | No intervention | Mixed | Aged 11-14<br>(M = 11.12) | African American (97.91%) | Mentoring, parental empowerment and community outreach services | Mentoring, coaching and peer support | Internalising and externalising difficulties | Child behaviour checklist | Parent/guardian | | | | - | |
| | | | | | | | | Internalising and externalising difficulties | Conners' Rating Scales–Revised (CRS-R) | Teacher | | | | | |
| Herrera, 2023<br>United States | RCT | Wait list control | Mixed | Aged 9-14<br>(M = 11.41) | Mixed (40% White American) | Peer mentoring scheme (Big Brothers, Big Sisters) | Mentoring, coaching and peer support | Depressive symptoms | Short Mood and Feelings Questionnaire | Young person | ✓ | | ✓ (emotional difficulties)<br>✓ (conduct difficulties<br>✓ (peer problems)<br>✓ (total difficulties) | | |
| | | | | | | | | Emotional symptoms | Strengths & Difficulties Questionnaire | Parent/guardian | | | | | |
| | | | | | | | | Conduct problems | Strengths & Difficulties Questionnaire | Parent/guardian | | | | | |
| | | | | | | | | Hyperactivity | Strengths & Difficulties Questionnaire | Parent/guardian | | | | | |
| | | | | | | | | Total difficulties | Strengths & Difficulties Questionnaire | Parent/guardian | | | | | |
| Kirkman, 2019<br>UK | RCT | Wait list control | Mixed | Aged 16-19<br>(M = unknown) | Unspecified | Envision | Citizenship, Community Service and Volunteering | Anxiety symptoms | Bespoke (quality assessment framework) | Young person | | - | | | |
| Kirkman, 2019a<br>UK | RCT | Wait list control | Mixed | 15-18<br>(M = unknown) | Unspecified | Voluntary Action with Kent | Citizenship, Community Service and Volunteering AND Mentoring, coaching and peer support | Anxiety symptoms | Bespoke (quality assessment framework) | Young person | | ✓ | | | |
| Ozler, 2020<br>Liberia | RCT | Active control: Girl Empower and No control: No intervention | Female only | 13-14<br>(M = not specified) | Not specified | Girl Empower+ is a life skills programme, addressing issues for young females. There were also additional components, including (i) caregiver sessions, (ii) an individual savings account, (iii) caregiver incentive reimbursement for attendance at their sessions (Girl Empower+) | Mentoring, coaching and/or peer support | Depressive symptoms | Short Mood and Feelings Questionnaire | Young person | - | | | | - |
| | | | | | | | | PTSD risk | Children's Revised Impact of Event Scale | Young person | | | | | |

RCT = Randomised Control Trial, QED = Quasi Experimental Design, VAWK = Voluntary Action With Kent, ✓ = Significant difference between the intervention and control group favouring the intervention, - = No difference between the intervention and control group,
X = Significant difference between the intervention and control group favouring the control

## Table A4: Activities and programmes linked to the educational settings

| Author, year | Country | Design | Control | Gender | Age range (mean) | Ethnicity (% largest category) | Intervention | Youth Sector Category | Outcome | Questionnaire | Outcome reporter | Depressive symptoms | Anxiety symptoms | Emotional and behavioural difficulties | Internalising and externalising difficulties | Mental health service use | Suicide attempt |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conley, 2020 | United States | RCT | Wait list control | Mixed | Age range unspecified (M = 20.8) | Mixed (68.6% White) | Honest, Open, Proud–College - peer support group | Mentoring, coaching and peer support | Anxiety symptoms | Generalized Anxiety Disorder Screener | Young person | - | - | | | | |
| | | | | | | | | | Depressive symptoms | Centre for Epidemiologic Studies Depression Scale for Children | Young person | | | | | | |
| Soyturk, 2020 | Turkey | RCT | No intervention | Mixed | Aged 14/15 (M = not specified) | Not specified | "Sports-related games", are games that ensure the active participation of all players, regardless of students' sports-related past or skill levels | Sports and physical health | Internalising and externalising difficulties | Youth Self Report | Young person | | | | ✓ (internalising and total problems score) | | |
| Wong, 2023a | UK | RCT | No intervention | Mixed | Aged 13-14 (M = not specified) | Mixed (64% White) | EFC: a 12-week group mentoring programme 'boxing-based mentoring' | Mentoring Coaching AND Sports and physical health | Emotional and behavioural difficulties | Strengths & Difficulties Questionnaire | Young person | | | - (emotional and behavioural difficulties) | | | |
| Wong, 2023b | UK | RCT | Wait list control | Mixed | Aged 13-14 (M =not specified) | Mixed (88% White) | Educate Mentoring: 12-week mentoring rugby programme | Mentoring Coaching AND Sports and physical health | Emotional and behavioural difficulties | Strengths & Difficulties Questionnaire | Young person | | | - (emotional and behavioural difficulties) | | | |

RCT = Randomised Control Trial, QED = Quasi Experimental Design, ✓ = Significant difference between the intervention and control group favouring the intervention, - = No difference between the intervention and control group, X = Significant difference between the intervention and control group favouring the control

## *Table A5: Activities and programmes linked to the community*

| Author, year | Country | Design | Control | Gender | Age range (mean) | Ethnicity (% largest category) | Intervention | Youth Sector Category | Outcome | Questionnaire | Outcome reporter | Depressive symptoms | Anxiety symptoms | Emotional and behavioural difficulties | Internalising and externalising difficulties | Mental health service use | PTSD risk |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bhatia, 2023 | India | RCT | Active Control: Livelihood intervention only (part intervention) | Female only | Aged 10-19 (M = specified) | Ethnicity not specified - 98% from Hotribe | Three components: (1) participatory adolescent groups, (2) youth leadership activities, and (3) livelihood promotion | Mentoring, coaching and peer support AND Employment, skills and enterprise | Internalising and externalising difficulties | Brief Problem Monitor-Youth | Unclear - adult (parent or teacher?) | | | | - | | |
| Chen, 2022 | Taiwan | RCT | Active control: health education | Mixed | Aged 10-19 (M = 17.07) | Not broken down but specified as Chinese and Taiwanese | Music group | Music, arts, recreation and community activities | Internalising and externalising difficulties | Chinese version of the Youth Self-Report (C-YSR) | Young person | | | | ✓ | | |
| DuBois, 2017 | United States | RCT | Active control: standard peer mentoring | Mixed | Aged 10-16 (M = 12.19) | Mixed (50.5% Black or African American) | Peer mentoring scheme (Big Brothers, Big Sisters) | Mentoring, coaching and/or peer support | Youth problem behaviour (conduct subscale) | Strengths and Difficulties Questionnaire | Young person | | | - (conduct difficulties) | | | |
| Haddock, 2020 | United States | RCT | Active intervention: one to one mentoring | Mixed | Age range not specified (M = 14.21) | Mixed (59% White American) | Group peer mentoring scheme (campus Connections) | Mentoring, coaching and/or peer support | Emotional and behavioural difficulties | Strengths & Difficulties Questionnaire | Parent/guardian | - | - | - (emotional and behavioural) | -(internalising _ | | |
| | | | | | | | | | Anxiety symptoms | Revised Children's Manifest Anxiety Scale | Young person | | | | | | |
| | | | | | | | | | Depression | Centre for Epidemiologic Studies Depression Scale for Children | Young person | | | | | | |
| | | | | | | | | | Internalising difficulties | Child Behaviour Checklist | Parent/guardian | | | | | | |
| Hanlon, 2009 | United States | QED | No intervention | Mixed | Aged 11-14 (M = 11.12) | African American (97.91%) | Mentoring, parental empowerment and community outreach services | Mentoring, coaching and peer support | Internalising and externalising difficulties | Child behaviour checklist | Parent/guardian | | | | - | | |
| | | | | | | | | | Internalising and externalising difficulties | Conners' Rating Scales–Revised (CRS-R) | Teacher | | | | | | |
| Heller, 2022 | United States | RCT | No intervention | Mixed | Aged 14-21 M = 15.64 | Mixed (77% Black American) | Professional development sessions throughout summer (Work ready) | Employment, skills and enterprise | Mental health service use | From social service records | Unclear | | | | | - | |

| Author, year | Country | Design | Control | Gender | Age range (mean) | Ethnicity (% largest category) | Intervention | Youth Sector Category | Outcome | Questionnaire | Outcome reporter | Depressive symptoms | Anxiety symptoms | Emotional and behavioural difficulties | Internalising and externalising difficulties | Mental health service use | PTSD risk |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Herrera, 2023 | United States | RCT | Wait list control | Mixed | Aged 9-14 (M = 11.41) | Mixed (40% White American) | Peer mentoring scheme (Big Brothers, Big Sisters) | Mentoring, coaching and peer support | Depressive symptoms | Strengths & Difficulties Questionnaire | Young person | ✓ | | ✓ (emotional difficulties)<br>✓ (conduct difficulties)<br>✓ (peer problems)<br>✓ (total difficulties) | | | |
| | | | | | | | | | Emotional symptoms | Strengths & Difficulties Questionnaire | Parents/ guardians | | | | | | |
| | | | | | | | | | Conduct problems | Strengths & Difficulties Questionnaire | Parents/ guardians | | | | | | |
| | | | | | | | | | Hyperactivity | Strengths & Difficulties Questionnaire | Parents/ guardians | | | | | | |
| | | | | | | | | | Total difficulties | Strengths & Difficulties Questionnaire | Parents/ guardians | | | | | | |
| Kirkman, 2019 | UK | RCT | Wait list control | Mixed | Aged 16-19 (M = unknown) | Not specified | Envision | Citizenship, Community Service and Volunteering | Anxiety symptoms | Bespoke (quality assessment framework) | Young person | | - | | | | |
| Kirkman, 2019a | UK | RCT | Wait list control | Mixed | Aged 15-18 (M = unknown) | Not specified | Voluntary Action with Kent | Citizenship, Community Service and Volunteering AND Mentoring, coaching and peer support | Anxiety symptoms | Bespoke (quality assessment framework) | Young person | | ✓ | | | | |
| Leathers, 2023 | United States | RCT | Wait list control | Mixed | Aged 17-20 (M = 18.32) | Mixed (82% Black) | Adult Connections Team (ACT), an enhanced services intervention that involved outreach by a youth specialist and coordinated mentoring, job readiness training, and externship services | Mentoring, coaching and peer support AND Employment, skills and enterprise | Depressive symptoms | Centre for Epidemiologic Studies Depression Scale for Children | Young person | - | | | | | |
| Nathan, 2013 | Australia | QED | No intervention | Mixed | Aged 13-18 (M =14.7) | Mixed (Afghan 23%) | Football activities: (i) Regular Saturday and after school training, including coaching and mentorship (ii) Skill capacity building: (ii) community capacity building (iv) creating awareness of Football united and community issues (Football United) | Sports and physical health AND Mentoring Coaching and Peer Support | Emotional symptoms | Strengths & Difficulties Questionnaire | Young person | | | - (emotional difficulties) | | | |
| | | | | | | | | | Hyperactivity | Strengths & Difficulties Questionnaire | Young person | | | - (hyper-activity) | | | |
| | | | | | | | | | Peer problems | Strengths & Difficulties Questionnaire | Young person | | | ✓ (peer problems) | | | |

| Author, year | Country | Design | Control | Gender | Age range (mean) | Ethnicity (% largest category) | Intervention | Youth Sector Category | Outcome | Questionnaire | Outcome reporter | Depressive symptoms | Anxiety symptoms | Emotional and behavioural difficulties | Internalising and externalising difficulties | Mental health service use | PTSD risk |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Osborn, 2023 | Kenya | RCT | Active control: study skills | Mixed | Aged 12-19 (M = 16.36) | Not specified | A creative arts-literacy intervention that involves five 1-h sessions spaced 1 day apart, including between-session homework exercises that encourage students to go off on tangents related to | Music, arts, recreation and community | Anxiety symptoms | Generalized Anxiety Disorder Screener 7 | Young person | ✓ | ✓ | | | | |
| | | | | | | | | | Depressive symptoms | Centre for Epidemiologic Studies Depression Scale for Children | Young person | | | | | | |
| Ozler, 2020 | Liberia | RCT | Active control: Girl Empower and No control: No intervention | Female only | Aged 13-14 (M = not specified) | Not specified | Girl Empower+ is a life skills programme, addressing issues for young females. There were also additional components, including (i) caregiver sessions, (ii) an individual savings account, (iii) caregiver incentive reimbursement for attendance at their sessions (Girl Empower+) | Mentoring, coaching and/or peer support | Depressive symptoms | Short Mood and Feelings Questionnaire | Young person | - | | | | | - |
| | | | | | | | | | PTSD risk | Children's Revised Impact of Event Scale | Young person | | | | | | |
| Richards, 2014 | Uganda | RCT | Waitlist control and a no intervention control | Mixed | Aged 11-14 (Mean not specified) | Not specified | Gum Marom Kids League (GMKL) using sport as a vehicle to promote physical fitness and mental health | Sports and physical health | Mental health status (depression and anxiety-like symptoms) | Acholi Psychosocial Assessment Instrument | Young person | X | X | | | | |
| Rotheram-Borus, 2016 | South Africa | RCT | Wait list control | Male only | Aged 18-25 (M = 21.9) | Not specified | Coaching pre and post soccer and soccer practice 2 x a week and vocational skills support (8 weeks electrical or mechanical engineering) | Mentoring, coaching and peer support AND Sports and physical health AND Employment, Skills and enterprise | Depressive symptoms | Centre for Epidemiological Studies of Depression measure (CESD) | Young person | - | | | | | |

RCT = Randomised Control Trial, QED = Quasi Experimental Design, VAWK = Voluntary Action With Kent, ✓ = Significant difference between the intervention and control group favouring the intervention, - = No difference between the intervention and control group, X = Significant difference between the intervention and control group favouring the control

## *Table A6: Online Activities and programmes*

| Author, year | Country | Design | Control | Gender | Age range (mean) | Ethnicity (% largest category) | Intervention | Youth Sector Category | Outcome | Questionnaire | Outcome reporter | Depressive symptoms | Anxiety symptoms | Emotional and behavioural difficulties |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Davis, 2024 | UK | RCT | Wait list control | Not specified | Aged 11-17<br>(M = not specified) | Not specified | Home goals: six weekly online video-conference sessions involving half an hour of psychoeducation and half an hour of physical activity. | Sports and physical health | Depressive symptoms | Patient Health Questionnaire | Young person | X | X | |
| | | | | | | | | | Anxiety symptoms | Severity Measure for Generalized Anxiety Disorder | Young person | | | |
| Pavarini, 2023 | UK | RCT | Wait list control | Mixed | Aged 16-18<br>(M = 16.39) | Mixed<br>(46% White British) | Interactive and informative sessions were delivered by peer support experts to the full group of 50 youth, and sharing and hands-on activities were mostly delivered in small groups of 7 via breakout rooms or WhatsApp, each led by a group facilitator (Uplift Peer Support Training). | Mentoring, coaching and/ or peer support | Emotional symptoms | Strengths and Difficulties Questionnaire | Young person | | | ✓ (emotional) |

RCT = Randomised Control Trial, QED = Quasi Experimental Design, ✓ = Significant difference between the intervention and control group favouring the intervention, - = No difference between the intervention and control group, X = Significant difference between the intervention and control group favouring the control

*Table A12: Study sample sizes*

| Author | Design |
|---|---|
| Bhatia, 2023 | 1478 |
| Chen, 2022 | 54 |
| Chung, 2021 | 228 |
| Conley, 2020 | 94 |
| Davis, 2024 | 37 |
| DuBois, 2017 | 806 |
| Haddock, 2020 | 676 |
| Hanlon, 2009 | 478 |
| Heller, 2022 | 4497 |
| Herrera, 2023 | 764 |
| Kirkman 2019 | 364 (Envision), 2190 (VAWK) |
| Leathers, 2023 | 152 |
| Nathan, 2013 | 62 |
| Osborn, 2023 | 235 |
| Ozler, 2020 | 1176 |
| Pavarini, 2023 | 100 |
| Richards, 2014 | 1462 |
| Rotheram-Borus, 2016 | 135 |
| Skoufa, 2023 | 84 |
| Smith 2022 | 51 |
| Soyturk, 2020 | 34 |
| Tingey, 2020 | 394 |
| Williams, 2018 | 335 |
| Wong, 2023a | 56 |
| Wong 2023b | 87 |