

The effects of Positive Youth Development interventions on substance use, violence and inequalities: systematic review of theories of change, processes and outcomes

Chris Bonell,^{1*} Kelly Dickson,² Kate Hinds,²
GJ Melendez-Torres,³ Claire Stansfield,²
Adam Fletcher,⁴ James Thomas,² Katrina Lester,^{2†}
Elizabeth Oliver,² Simon Murphy⁴ and Rona Campbell⁵

¹Department of Social and Environmental Health Research, London School of Hygiene and Tropical Medicine, London, UK

²Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre), Social Science Research Unit, University College London Institute of Education, London, UK

³Division of Health Sciences, Warwick Medical School, University of Warwick, Coventry, UK

⁴Development and Evaluation of Complex Interventions for Public Health Improvement (DECIPHer), School of Social Sciences, Cardiff University, Cardiff, UK

⁵Development and Evaluation of Complex Interventions for Public Health Improvement (DECIPHer), School of Social and Community Medicine, University of Bristol, Bristol, UK

*Corresponding author

†In memoriam. The report is dedicated to the memory of Katrina Lester, a very fine researcher and a kind and generous woman.

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Scientific summary

PYD interventions on substance use, violence and inequalities

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Scientific summary

Background and rationale

Substance use and violence are very common and damaging to young people's health. There are calls for interventions to address multiple- rather than single-risk behaviours because such behaviours cluster together and such interventions are potentially more efficient. Positive Youth Development (PYD) delivered outside school is one such intervention to address interclustered risk behaviours among young people. The UK's National Youth Agency (NYA) defines such interventions as voluntary educational activities aiming to bring about generalised youth development in terms of positive assets such as skills and confidence, rather than to merely remedy 'problem behaviours'.

Non-systematic reviews of PYD effects on violence and drug use suggest benefits as well as variability, but must be treated with caution given that the majority of these reviews are unsystematic and quite old.

Aim and review questions

This systematic review aimed to systematically search for, appraise the quality of and synthesise evidence on PYD interventions addressing substance use or violence, asking the following review questions (RQs):

RQ1: what theories of change inform PYD interventions delivered to young people aged 11–18 years addressing substance use and violence?

RQ2: what characteristics of participants and contexts are identified as barriers to and facilitators of implementation and receipt in process evaluations of PYD?

RQ3: what is the effectiveness and cost-effectiveness of PYD compared with usual or no treatment in reducing substance use (smoking, alcohol use, drug use) and violence (perpetration and victimisation)?

RQ4: what characteristics of participants and contexts appear to moderate, or are necessary and sufficient for, PYD effectiveness?

Methods

We searched for reports published in English since 1985 on theories of change, as well as process, outcome and economic evaluations of PYD interventions targeting youths aged 11–18 years to reduce substance use or violence, including experimental and quasi-experimental outcome evaluations. We searched 21 bibliographic databases plus websites, clinical trials registers and expert consultation. References were screened on title and abstract, then, where appropriate, on full report. Data extraction and quality assessment of included studies were undertaken by two reviewers, who used a third reviewer when a consensus could not be reached. Quality assessment used existing tools.

Two reviewers used template analysis and thematic content analysis to qualitatively metasynthesise theories of change and process evaluation findings. We developed a narrative and meta-analytic synthesis of outcome evaluations, the latter of which used multilevel meta-analytic models to account for multiple reported effect sizes. Because studies did not report how effects varied by subgroup, we were not able to use metaregression to examine how intervention effects were moderated by sociodemographic characteristics. Insufficient study numbers and quality and low statistical or qualitative heterogeneity of

results precluded metaregression or qualitative comparative analysis to test hypotheses about how intervention effects varied by characteristics of participants and contexts. Economic data were not synthesised as no such studies were found.

We consulted policy/practice stakeholders and young people on completion of our synthesis of theories and processes to inform them of how we used these to develop hypotheses, as well as on completion of our draft report to inform them of our plans for communication and dissemination.

Results

Included studies

We identified 32,394 unique references from searches. Of these, 31,634 were excluded by screening on title and abstract. Of the 760 remaining references, we could obtain full reports of 689. Screening these led to a further 641 studies being excluded. The remaining 48 included reports arose from a total of 30 distinct studies (i.e. a distinct description of theory of change or empirical evaluation). Sixteen reports described theories of change; 13 reports (from 10 distinct studies) evaluated processes; and 25 reports (from 10 distinct studies) evaluated outcomes. Five reports combined theories of change, process evaluation and/or outcome evaluation (see *Table 3* in the main report for an overview and overlap between study reporting and programmes evaluated).

Review question 1: theories of change for Positive Youth Development effects on substance use and violence

Sixteen reports were included. We aimed to assess the quality of these theories by drawing on criteria used previously, but found that it was challenging to apply these consistently to the PYD theoretical literature.

The included literature did not provide sufficient information to develop a comprehensive theory of change for the effects of PYD interventions on substance use and violence. Nonetheless, by filling in some of the gaps in the literature (in a transparent manner) we succeeded in generating a theory of change.

Positive Youth Development interventions are intended to provide a positive environment for young people in terms of positive expectations; enduring and affective relationships with adults; diverse activities and settings; and active participation whereby young people are empowered to choose activities and take on responsibilities. Interventions vary according to whether they aim to enable young people to contribute to or challenge the existing social order; focus on individual or collective development; aim to transform individuals only or also the environments in which they live; provide breadth, depth and duration of activities; and address only positive assets or also risk behaviours.

In providing positive expectations and active participation in diverse activities, PYD aims to offer 'affordances', that is, resources individuals use in the course of their development (e.g. relationships, challenges, education). We interpret that young people can make use of these affordances in learning to apply 'intentional self-regulation' to specific intervention activities such as sports, arts or outdoor activities. Intentional self-regulation comprises 'intentionality' (assessing their current skills); 'selection' (setting goals for what they want to achieve); 'optimisation' (using their existing skills and the new affordances that PYD provides to achieve these goals); and 'compensation' (reviewing and if necessary redirecting actions to meet goals).

Positive Youth Development interventions aim to reward young people when they make progress with activities regarded as pro-social within that programme. Drawing on, but filling in gaps in, the PYD literature, we interpret that PYD interventions enable young people to engage in and learn from diverse, mutually reinforcing intervention activities, so that they develop generalised intentional self-regulation focused on pro-social goals.

As a result of developing intentional self-regulation, young people are better able to develop various 'positive assets' such as the '5 Cs': competence, confidence, connection, character and caring. As these accrue, young people can make better use of the opportunities available in their wider environments, which leads to positive 'developmental regulations', that is, a positive feedback cycle whereby individuals gain more benefit from opportunities in their environment. This in turn enables them to make a positive contribution to their communities and societies, or, as a few authors would argue, enables them to contribute by critiquing and challenging inequities present in the existing social order.

These positive assets may then reduce risk behaviours via 'buffering', whereby risk factors in a young person's environment have less impact on those with positive assets, or 'compensation', whereby even if a young person engages in a risk behaviour, their possession of positive assets ameliorates the impacts of this on their overall health and development. (Note that this use of compensation is quite distinct from that within the description of intentional self-regulation above.) It is also argued that positive assets may reduce risk via 'molecular' mechanisms, whereby a specific asset exerts specific protection against a specific risk, or via 'pile-up', whereby accumulation of multiple assets is protective regardless of the specific assets involved.

However, the theoretical literature synthesised here offers only limited insights beyond these general ideas. It suggests that engagement with pro-social peer groups or institutions might reduce antisocial behaviours via exposure and adherence to pro-social norms. It also suggests that improved emotional self-regulation, social skills and self-efficacy might contribute to better decision-making to avoid violence and substance use. But this falls short of a systematic theory of how the accrual of assets in particular or in general contributes to reductions in substance use or violence.

Review question 2: characteristics of participants and contexts that affect implementation and receipt of Positive Youth Development

Of the 10 included studies, eight were conducted in the USA, one was conducted in Australia and one was conducted in England. Study quality ranged from high reliability and usefulness to low reliability and usefulness.

A number of themes emerged from synthesis. Community engagement was a key to ensuring that programmes were culturally sensitive, accessible and appealing to young people and their parents, as well as to the wider community. Employing community members could be pivotal to successful implementation and providing role models. However, volunteers could be unreliable, for example in acting as mentors. Collaboration with other community agencies could be important, particularly in expanding the range of activities offered, but could lead to a move away from the original approaches.

Another theme was young people's relationships with providers and peers. Providers should relate to young people in a calm and nurturing but authoritative way. Skilled providers could bridge social differences between participants, but this could be undermined by poor training or retention. Retention of staff was challenging where programmes could not offer full-time positions. A final theme concerns the challenges to ensuring that young people are empowered to make decisions about programme activities while also requiring them to engage in diverse activities, including vocational or academic activities.

Review question 3: effectiveness and cost-effectiveness in reducing substance use and violence

We found 13 study reports of 10 distinct outcome evaluations and included 12 study reports of nine distinct outcome evaluations in our meta-analyses. All but one study was conducted in the USA (one was conducted in the UK). We could not categorise interventions as per the taxonomy derived from our theory synthesis because of the lack of detail reported. We found no economic evaluations and thus could not assess

cost-effectiveness. Four studies were randomised controlled trials; five were non-randomised trials with prospectively matched control groups; and one included both randomised trial and non-randomised components which were analysed together. Overall quality of evidence for our analyses of substance-use and violence outcomes was rated 'very low'. Only one study described a theory of change for how its PYD-type intervention components might lead to reductions in substance use or violence.

Our meta-analyses found a small overall effect for substance-use outcomes that was significant neither statistically nor in terms of public health relevance. Meta-analyses found no effect for an omnibus measure of substance use across all time points but did find a small, statistically significant, effect for this outcome in the short term (0–4 months post intervention). Meta-analyses of illicit drug-use and alcohol outcomes found no significant effects either across all time points or in the short term. Our meta-analysis for smoking at all time points included only four studies and so its finding of no significant effects should be treated with caution. Meta-analysis of short-term smoking was not undertaken, as only two studies could have been included. It was not possible to undertake metaregressions looking at effects by sex. Narrative synthesis of three studies that examined subgroup effects found that these were mixed with no clear pattern. We aimed to examine effects by socioeconomic status, ethnicity or area deprivation but no studies reported these. One evaluation presented a subgroup analyses by combinations of sex and ethnicity, reporting that minority ethnic status was not a moderator of effects.

Meta-analyses suggested that PYD interventions did not have a statistically significant effect on violence outcomes across all time points, but that there was a beneficial effect on short-term outcomes. However, this finding was only marginally significant in sensitivity analysis and should be treated with caution. Metaregression to assess subgroup effects was not possible. Only one evaluation reported effects by sex and found that this did not moderate effects. It also examined presented subgroup analyses by categories defined by sex and ethnicity, reporting that these did not moderate effects.

Review question 4: characteristics of participants and contexts that determine effectiveness

We aimed to examine the participant characteristics and contexts that appear to moderate, or are necessary and sufficient for, PYD effectiveness. A synthesis of PYD theories of change and process evaluations suggested several hypotheses:

- Interventions that offer a breadth of activities may be more effective for younger adolescents, whereas those that emphasise depth may be more effective for older adolescents.
- Interventions that combine prevention and positive development may be less effective than those that focus only on positive development.
- Interventions of more than 1 year's duration may be more effective than those of shorter duration.
- Interventions may be more effective for participants with low or moderate levels of baseline risk, as there is more scope for stimulating 'intentional self-regulation'.
- Interventions that have specific methods to engage communities will be more effective.
- Projects that engage with schools will achieve better recruitment.
- Interventions that are delivered by well-trained staff will be more effective.
- Interventions that have better staff retention will be more effective.
- Interventions that offer some choices but require some engagement with educational components will be more effective.

However, the limited number of studies and very low level of statistical heterogeneity or qualitative differences in the effects that these studies reported precluded examination of these hypotheses via metaregression or qualitative comparative analyses.

Conclusions

Theories of change for how PYD might impact on substance use or violence are currently inadequate. These neither fully describe how interventions enable participants to develop 'intentional self-regulation' nor explain how the development of positive assets enables young people to reduce their risk of engaging in substance use and violence. Any future evaluations of the effects of PYD interventions on these outcomes must clarify the intended mechanisms of action.

Tensions can arise in how PYD is implemented in practice. Programmes are often intended to empower young people's choice of activity and to ensure that they are engaged in diverse activities to develop multiple assets. Programmes usually aim to use skilled providers who can engage participants in long-term affective relationships but this can be undermined by agencies' inability to offer secure, full-time jobs. Use of volunteers can engender community support and offer role models, but volunteers may also be hard to retain.

Our meta-analyses do not offer evidence that existing PYD interventions delivered outside school have effects of public health importance in reducing substance use and violence among young people. Our conclusions with regard to smoking should be treated with caution because of the paucity of included studies. Our review may not constitute a test of the effectiveness of the PYD model, as the interventions evaluated in included studies, although meeting our inclusion criteria, were commonly implemented variously between sites and often emphasised explicit risk reduction as much as, if not more than, positive development, so these may not be exemplars of PYD. PYD aiming to reduce substance use and violence should be implemented only in the context of rigorous evaluation. We found no studies examining the cost-effectiveness of PYD.

Study registration

This study is registered as PROSPERO CRD42013005439.

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Editorial contact: nihredit@southampton.ac.uk

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