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Improving socio-emotional health for pupils in early secondary education with  
Pyramid: A school-based, early intervention model

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**Background.** Policy makers are focusing increased attention on the role of schools to promote and support children's mental health, and evidence-based models of good practice are in demand. Pyramid Club is a school-based, socio-emotional intervention, demonstrably effective with primary-aged pupils.

**Aims.** This study extends previous Pyramid Club evaluations by examining effectiveness with pupils in early secondary education; service users' perceptions and experiences were investigated to increase understanding of Pyramid's impact, thus supporting enhanced practice.

**Sample.** Participants ( $n = 126$ ) comprised selected pupils, aged 11-14 (52 males; 74 females), who completed the 10 week programme (Pyramid group) and a non-intervention comparison group. Club leaders ( $n = 23$ ) were trained, Pyramid volunteers.

**Methods.** A mixed methods design was implemented. The Strengths and Difficulties Questionnaire (SDQ), informant-rated version (Goodman, 1997) and self-report version (Goodman, Meltzer, & Bailey, 1998), was used to measure socio-emotional well-being: pre-club (baseline assessment), post-test (within two weeks of programme completion), and at 12-month follow-up (informant-rated version only). Focus groups were conducted separately with Pyramid pupils and Club leaders.

**Results.** Findings from informants and self-reports identified significant improvements for the Pyramid group in total difficulties and on pertinent SDQ subscales (e.g. emotional symptoms and peer relationship problems) at post-test. Improvements were sustained at 12-month follow-up. Comparison pupils demonstrated minimal change over time. Thematic analysis of qualitative data supported the quantitative findings and provided valuable insights into the Pyramid Club experience.

**Conclusions.** Findings contribute to evidence-based, preventative models for the early adolescent population and support the social validity of Pyramid Club.

## Improving socio-emotional health for school pupils

Child and adolescent mental health is a major public health concern. Research suggests (e.g. Thorley, 2016) that psychological distress among children and young people in the UK is growing, with many not accessing timely and appropriate support. The crucial role of schools in providing early intervention is increasingly recognised (e.g. Bonell *et al.*, 2014). This sentiment is incorporated within a settings-based approach to health (World Health Organisation (WHO), 1986), integrating sectors from the wider social system and building on the principles of community participation, partnership, empowerment and equity. A strategic framework to support mental health is imperative (Department of Health (DH), 2015) and couched within a settings-based model, places schools in a pivotal position to offer socio-emotional interventions.

In line with current focus on schools to promote mental well-being, examples of demonstrably effective interventions as models of good practice are in high demand (DH, 2015), yet research suggests (e.g. Clarke, Morreale, Field, Hussein, & Barry, 2015) there is a dearth of programmes aimed at older children. Moreover, a further consideration is the extent to which available interventions fit with the stated preferences of young people, so that provision can be shaped increasingly around what matters to them (DH, 2015).

Pyramid Club is a school-based intervention, developed and delivered in the UK: it supports socio-emotional well-being (SEWB), which comprises emotional, psychological and social aspects of well-being (NICE, 2009). Pyramid Club is targeted at shy, withdrawn or anxious children (aged 7-14) who internalise their difficulties, and aims to improve recipients' socio-emotional competencies: social skills, confidence, self-esteem, and emotional regulation, thus strengthening resilience. The relative benefits of targeted versus universal approaches have been widely debated (e.g. Domitrovich *et al.*, 2010), however, as pupils inevitably require exposure to different interventions according to their needs, a tiered

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approach, perhaps, offers the most effective service delivery within schools (Neil & Christensen, 2009).

The Pyramid Club, 10 week intervention, is typically delivered as an after school club for small groups (10-12 children), facilitated by three or four, trained leaders; the 90 minute, weekly sessions follow a manualised programme (with accompanying resource pack). Club leaders comprise an eclectic mix of volunteers from the school (e.g. learning mentors) and wider community (e.g. university students); a minimum of 10 hours Pyramid training (including relevant theory, e.g. children's socio-emotional development, and practice, e.g. 'taster' club activities) is a prerequisite. At least one visit per club by the Pyramid Programme Coordinator is undertaken to provide ongoing support and monitor intervention fidelity; however, no objective scale to evaluate treatment integrity currently exists.

The Pyramid Club theory of change (Hughes, 2014) is underpinned by a competence enhancement model (e.g. Huppert, 2009; Keyes, Dhingra, & Simoes, 2010) and identifies therapeutic activities (i.e. circle time, arts and crafts, games, and snack time/food preparation) through which behaviour change techniques are embedded and targeted outcomes (e.g. improved socio-emotional competencies) achieved (<http://www.uwl.ac.uk/pyramid/welcome>). Pyramid clubs encompass physical, psychosocial, creative and reflective elements (Table 1). The Pyramid ethos rests on four tenets of healthy child development (Kellmer-Pringle, 1980); these reflect the Pyramid Club experience for children: praise and recognition, love and security, new experiences, and responsibility.

[Table 1 about here]

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This paper discusses the impact of Pyramid Club on young people (aged 11-14), examining both fitness for purpose and social validity as essential criteria to scrutinise the Pyramid model as an exemplar of good practice.

### **Literature Review**

The foundations for good mental health are laid during childhood and adolescence, impacting across the life course (e.g., Carta, Di Fiandra, Rampazzo, Contu, & Preti, 2015). Research suggests that the majority of adult conditions are extensions of disorders initially presented during adolescence (Kim-Cohen *et al.*, 2003). Although poor mental well-being in childhood or adolescence does not inevitably lead to later mental illness, it is probably the most evidenced predictor of psychiatric disorder in adulthood (Fryers & Brugha, 2013). Moreover, effective social and emotional programmes for children and young people are associated with significant short- and long-term improvements across emotional, social, behavioural, and academic domains (e.g. Taylor *et al.*, 2017); along with reduced risk of negative youth outcomes, including crime and substance misuse (e.g. Jones *et al.*, 2015). There is, therefore, a strong rationale for identifying socio-emotional issues early on and affording prevention strategies the priority they deserve, including interventions designed to promote good mental well-being.

Couched within a healthy settings approach, schools provide a unique context for children and young people to develop socio-emotional competencies. Moreover, the erosion of National Health Service and Local Authority early intervention services has affected child and adolescent mental health services' (CAMHS) ability to meet growing levels of need, with secondary schools 'being forced to pick up the pieces' (Thorley, 2016, p.3).

Data from the Millennium Cohort Study (MCS) suggest 10% of 11 year-olds had a clinically diagnosable disorder in 2012, broadly the same as in 1999 (Gutman, Joshi,

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Parsonage, & Schoon, 2015). At age 14, self-report data from the MCS (Patalay & Fitzsimons, 2017) showed 24% of girls and 9% of boys were suffering from high symptoms of depression. Moreover, almost a third of secondary-aged pupils have self-reported 'low' (sub-clinical) levels of well-being (Brooks, Magnusson, Klemra, Spencer, & Morgan, 2011). Self-reported emotional problems amongst 11-13 year-old pupils ( $n = 3,336$ ) increased over a five year period up to 2014 (Fink *et al.*, 2015). The authors suggested this could be associated with the lack of school-based interventions targeted at emotional difficulties, with much greater attention given to tackling externalising behaviours (e.g. conduct disorders and hyperactivity) in school settings. Evidence from the USA suggests a similar bias; adolescents experiencing internalising difficulties (e.g. anxiety and depression) are typically underrepresented in school mental health care (Shackleton *et al.*, 2016).

Despite the identification of early adolescence as a vulnerable period, a systematic review of targeted socio-emotional interventions in UK schools revealed a scarcity of secondary school programmes (two compared to fourteen in primary schools) (Cheney, Schlösser, Nash, & Glover, 2014). A narrative review by Clarke *et al.* (2015) examining both targeted and universal UK socio-emotional programmes identified 39 school-based interventions: 46.2% ( $n = 18$ ) aimed at primary school children compared to 33.3% ( $n = 13$ ) for secondary-aged pupils. Whilst a further 20.5% ( $n = 8$ ) were delivered at both educational levels, older pupils were predominantly in their first year of secondary education (aged 11-12). Review findings show evidence of positive effects on children's social and emotional competencies, attitudes to self and others, and school. Characteristics of successful programmes included: explicit focus on developing socio-emotional skills; having well-defined goals; a coordinated (e.g. manualised) delivery, and being part of a whole school approach to mental well-being.

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A scoping review of mental health provision in English schools (Vostanis, Humphrey, Fitzgerald, Deighton, & Wolpert, 2013) found services were predominantly reactive, not preventative, and largely not evidence led. Similar concerns were echoed by mental health professionals in a National Children's Bureau (NCB) and NHS Confederation survey (2013). Pupil survey respondents, moreover, felt that mental well-being did not receive sufficient attention and those experiencing difficulties claimed they received little or no support.

Previous evaluations of Pyramid have predominantly consisted of effectiveness studies with primary school children (aged 7-8) (e.g. McKenna, Cassidy, & Giles, 2014; Ohl, Fox, & Mitchell, 2012; Ohl, Mitchell, Cassidy, & Fox, 2008). Pyramid's effectiveness with transition-stage children (aged 10-11) has also been examined (e.g. Cassidy, McLaughlin, & Giles, 2015). These studies have provided empirical evidence of improvements in the SEWB of intervention recipients. Pyramid primary and transition clubs are listed in the Early Intervention Foundation (EIF) guidebook on interventions shown to have an impact on child outcomes and were awarded the lowest cost rating (EIF, 2017).

Robust evidence is a prerequisite for schools to make informed decisions when selecting appropriate interventions (Fazel, Hoagwood, Stephan, & Ford, 2014). Nonetheless, demonstrably effective interventions for secondary school pupils appear sparse in the literature (Cheney *et al.*, 2014; Clarke *et al.*, 2015); the present study addressed this gap. The aims were to examine the impact Pyramid had on the SEWB of pupils aged 11-14, and, moreover, to gain a crucial understanding of Pyramid's effectiveness through investigating the perceptions and experiences of service users and Club leaders.

## **Methods**

### *Design*

The study was a mixed methods design.

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The **quantitative strand** was quasi-experimental: Pyramid is selective and randomised sampling was not appropriate; following a screening procedure pupils were allocated to the Pyramid (intervention) group or a matched (non-intervention) comparison group. Sufficient Pyramid places were available so a wait-list comparator was rejected. A 2 x 3 mixed model design was implemented: group type, intervention or matched comparison, constituted the between groups factor and time point, baseline (T1), post-test (T2), or 12-month follow-up (T3) the within group factor.

The Strengths and Difficulties Questionnaire (SDQ) was used to measure SEWB (Goodman, 1997). The informant-rated version (Goodman, 1997) was completed by class teachers and the self-report version for 11-16 year-olds (Goodman *et al.*, 1998) was completed by pupil participants. Extensive evidence supports the psychometric properties of the SDQ, demonstrating its validity, reliability and sensitivity to change (Hobbs & Ford, 2012). The SDQ comprises 25 items, divided equally across five subscales: emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems, and prosocial behaviour; the first four measure potential difficulties and a combined score provides a child's total difficulties (TD) score (a high score indicates greater need). The fifth subscale, prosocial behaviour, is measured separately as a 'strength'. The emotional symptoms, peer relationship problems, and prosocial behaviour subscales map onto domains specifically targeted by Pyramid. Therefore, children who score high (within 'borderline' or 'abnormal' caseness) on emotional symptoms and/or peer relationship problems, and/or low on prosocial behaviour (within 'borderline' or 'abnormal' caseness) are considered suitable for Pyramid Club; whereas, children who score high on conduct problems and/or hyperactivity/inattention (externalising difficulties), or those who display co-morbidity, are not.



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The **qualitative strand** comprised focus groups with Pyramid attendees and Club leaders. This method recognises the rights of CYP to inform practices and policies which concern them; CYP's growing contribution to service evaluation has seen a shift in focus from research **on** children to research **with** children (James, 2007). Triangulation of data (service users and Club leaders) allowed different voices concerning the same phenomenon to be captured and supports the credibility of the findings.

Focus groups were used at the end of the intervention to gather participants' perceptions of impact and overall effectiveness (Kamberelis & Dimitiadis, 2013). Although not entirely naturalistic, focus groups offer an approximation of a natural interaction, providing rich 'emic' data; arising in natural or indigenous form, with minimal imposition of the researcher's world view (Stewart & Shamdasani, 2014). In vivo coding prioritises participant voice: the attitudes, dispositions and outcomes of service users were extrapolated; allowing suggestions for development to be fed back into the delivery model, and contributing to 'real world' changes (Wyatt, Krauskopf, & Davidson, 2008).

### *Participants*

Pupils from eight, co-educational, secondary schools in England and Wales took part in the study. In line with the criterion set in previous Pyramid evaluations (e.g. Ohl *et al.*, 2012; Ohl *et al.*, 2013), a minimum attendance of 70% (seven of the ten Pyramid Club sessions) was set for participants. This criterion is specified in the Pyramid Club theory of change and reflects the requisite time for children to form a cohesive and functional group from which they may benefit from having membership (Hughes, 2014; Ohl, 2009). Eleven, from a total of 78 young people invited to Pyramid Club, attended three or fewer sessions, thus 14% were not eligible for the study. Data for one pupil who had received 70% dosage were not available. The study sample ( $n = 126$ ) comprised the Pyramid (intervention) group ( $n = 66$ ); 26 males and 40 females, and a comparison group ( $n = 60$ ); 26 males and 34 females,

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matched with the Pyramid group on age, gender, and socio-economic status (SES), based on eligibility for free school meals (FSM) (Table 2). All pupil participants were on school roll in Year 7, 8 or 9, with a mean age of 12.53 years (SD: 0.79).

Club leaders ( $n = 23$ ) comprised school support staff and volunteers from the community.

[Table 2 about here]

### *Ethics*

Full ethical approval was granted by the University Ethics Committee (in the UK) prior to commencement of the study. Written consent was provided by head teachers who acted as ‘gatekeepers’ and through whom access to pupils was arranged. Parents/carers were sent an opt-out form regarding use of their child’s data; none were returned and consent was, therefore, assumed. Written consent was received from pupil and adult participants themselves.

### *Procedure*

Pupils who had been selected for Pyramid Club (based on teacher-rated SDQ scores and subsequent multidisciplinary meetings to discuss individual cases) completed the self-report SDQ prior to the first session. Comparison group pupils underwent the same screening procedure (teacher-rated SDQ) as the Pyramid (intervention) group and also completed the self-report SDQ.

Club sessions were delivered on a regular weekly basis to the Pyramid group. Teacher-rated and self-report SDQ measures were repeated for the Pyramid and comparison groups at the end of the programme. The quantitative data were used to evaluate the intervention’s effect by comparing baseline scores (pre-club) with post-intervention scores. Only data which comprised pairs of scores (i.e. collected at T1 and T2) were analysed. Nine

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comparison group pupils were excluded from the informant-rated SDQ analysis due to missing T1 or T2 data, and five Pyramid group pupils were removed from the self-report SDQ analysis on the same basis (Table 3).

[Table 3 about here]

At 12-month follow-up, the informant-rated SDQ measure was repeated. The attrition rate was 15%: T3 data were not available for 11 pupils from the Pyramid group (four pupils had relocated and data for seven pupils were not provided), and seven pupils from the comparison group (one pupil had relocated and data for the remaining six were not provided). Focus groups, facilitated by the lead researcher, were conducted in each school with Pyramid Club attendees and separately with Pyramid Club leaders within three weeks of the programme's completion. A total of 65 Pyramid attendees and 23 club leaders participated.

Thematic analysis was used to analyse the transcripts as this research tool gives flexibility while providing a rich and detailed analysis suited to the complexity of this type of experiential data. A six-phase model (Braun & Clarke, 2013) guided the thematic analysis and a hybrid deductive-inductive approach (Fereday & Muir-Cochrane, 2006) was applied: a priori codes (Table 4) were integrated with 'spontaneous' codes emerging from the data through an iterative and reflexive process. Manual analysis was undertaken because of the risk associated with using software programmes for focus group data, i.e. the coding and retrieving process fails to identify the interactive component and narrative flow can be lost through fragmentation (Savin-Baden & Major, 2013).

Selected transcripts were cross-validated by a second coder to establish the 'quality' of the findings. Level of agreement was high, with a few minor changes made to thematic labels; an analytic narrative was produced.

[Table 4 about here]

## Results

Inspection of teacher-rated SDQ scores at baseline (T1) indicated that the Pyramid group scored higher on total difficulties than the general population (according to UK normative data: Meltzer, Gatward, Goodman, & Ford, 2000), specifically on the emotional symptoms and peer relationship difficulties subscales. Post-intervention (T2) scores on all three scales had shifted to the ‘normal’ range. Moreover, conduct problems and hyperactivity/inattention scores were consistently in line with normative scores over time. Comparison group scores were similar to normative scores on all five subscales of the SDQ at T1 and T2.

Mixed model ANOVA results showed a highly significant interaction effect between time point and group type:  $F(1, 115) = 28.18, p < .001, \eta^2 = .165$ . Tests of simple effects demonstrated a significant decrease in mean TD score for the Pyramid group:  $t(65) = 7.62, p < .001$ , generating a large effect size ( $d = 0.96$ ). Results also showed a highly significant main effect of group type, accounting for 33% of the variance. Nonetheless, a significant between groups difference was evident at T1 and T2, with the Pyramid group continuing to display higher total difficulties. Profile analysis (Figure 1) shows the significant group\*time interaction and the distinct pattern of change for each group.

[Figure 1 about here]

Subscale analysis demonstrated significant changes over time in three domains: emotional symptoms ( $F(1, 115) = 22.73, p < .001, \eta^2 = .145$ ); peer relationship problems ( $F(1, 115) = 28.37, p < .001, \eta^2 = .174$ ), and prosocial behaviour ( $F(1, 115) = 5.46, p = .02, \eta^2 = .04$ ). Tests of simple effects were calculated; significant within group differences are indicated in Table 5. A distinct pattern of change was observed, with (highly significant:  $p < .001$ )

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improvements for the Pyramid group (on the three subscales), with large effect sizes for emotional symptoms ( $d = 0.79$ ) and peer relationship problems ( $d = 0.82$ ); comparison pupils showed minimal change.

[Table 5 about here]

Analysis of T1 pupil self-report data, identified fewer overall difficulties for the Pyramid group compared to teacher-rated SDQ assessments; the mean TD score fell within the ‘normal’ banding (Meltzer *et al.*, 2000). Likewise, mean subscale scores, across all domains, were within the ‘normal’ range. At T2, reductions in total difficulties, emotional symptoms, and peer relationship problems were identified, but shifts were less pronounced than teacher-rated findings. Scores for the comparison group demonstrated minimal change across all domains over time.

Results from a mixed model ANOVA identified significant main effects of time point:  $F(1,119) = 8.16, p = .01, \eta^2 = .06$ , and group type:  $F(1,119) = 17.01, p < .001, \eta^2 = .125$  on TD scores. Tests of simple effect revealed a significant decrease in total difficulties for the Pyramid group:  $t(60) = 3.45, p = .001$  (generating a small-medium effect size:  $d = 0.41$ ).

Moreover, further scrutiny of self-report subscale data showed a significant interaction between group type and time point on emotional symptoms:  $F(1,119) = 4.42, p = .04, \eta^2 = .03$ , and peer relationship problems:  $F(1, 119) = 5.96, p = .02, \eta^2 = .04$ . Tests of simple effects revealed significant decreases for the Pyramid group in both domains respectively:  $t(60) = 2.87, p = .01$ ;  $t(60) = 3.51, p = .001$ . Results are presented in Table 6; significant within group differences are indicated.

[Table 6 about here]

### 12-month follow-up results

To examine any sustained effects of Pyramid, SDQ scores were re-examined at 12-month follow-up (T3) using the informant-rated measure. TD results from a mixed model ANOVA showed the interaction between group type and time point was highly significant:  $F(1, 97) = 27.13, p < .001, \eta^2 = .124$ . Tests of simple effects demonstrated a significant difference between T1 and T3 scores for the Pyramid group:  $t(54) = 7.47, p < .001$ , generating a large effect size ( $d = 1.02$ ); thus indicating the significant reduction identified at T2 was maintained at 12-month follow-up. Results for the comparison group showed minimal fluctuations over time.

A series of mixed model ANOVAs were conducted to examine longer-term effects on targeted domains. Follow up tests of simple effects showed a significant reduction in scores from T1 to T3 for the Pyramid group, demonstrating consistent findings on two subscales (Figures 2 and 3): emotional symptoms ( $t(54) = 6.04, p < .001$ , generating a large effect size:  $d = 0.8$ ) and peer relationship problems ( $t(54) = 7.47, p < .001$ , generating a large effect size:  $d = 0.9$ ). Results for prosocial behaviour marginally failed to reach significance ( $t(54) = 1.95, p = .06$ ). In line with previous (T2) findings, minimal change was demonstrated for the comparison group across all subscales.

[Figure 2 about here]

[Figure 3 about here]

### Focus group findings

Eleven main themes and 27 subthemes were labelled and categorised within five, global themes: these included **Pyramid 'graduate'**, encompassing the main themes, 'Perceived outcomes' and 'Identity'; and **Progression and influence**, encompassing the main themes,

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‘Pyramid development and diffusion’ and ‘Pyramid legacy’. Selected extracts from complete tables of themes have been reproduced in Tables 7 and 8.

[Table 7 about here]

[Table 8 about here]

The global theme **Pyramid ‘graduate’** explores the unique reality of service users’ Pyramid Club experience. Attendees reported substantial socio-emotional gains, specifically in social skills, peer relationships, and confidence: ‘[Pyramid] helps you talk to people’ (Colby, Sc7), and ‘[Pyramid] stops you being shy’ (Ramsey, Sc3). Attendee accounts were corroborated by Club leaders who identified pupils’ newly acquired competencies:

He was the one right at the front who introduced the whole assembly. To think would he have done that before? Probably not (CL1, Sc1).

Attendees reported increased confidence in situations outside of the immediate club environment and felt the skills they had developed at Pyramid Club had an effect on their behaviour and learning in the classroom: ‘It [Pyramid] makes you like work together, with someone, not just alone’ (Charlotte, Sc8). Club leader accounts concur, and, for example, identify pupils asking questions and interacting more in lessons. Attendees’ perceptions of themselves prior to Pyramid Club reflected those of a ‘typical’ Pyramid child: ‘I felt really self-conscious’ (Freddy, Sc5). Post-club, a sense of personal change and achievement contrasted sharply with pre-club accounts: ‘I used to get bullied and stuff which basically put me inside of a shell but Pyramid helped to break that shell’ (Scooby, Sc5). Attendees felt ‘proud’ and ‘special’ to be Pyramid Club graduates.

Evidence suggests Pyramid fosters a sense of belonging, creating a group identity for Club members. Relationships developed which were affectionate and trusting: ‘In Pyramid

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we're all caring about each other' (Hermione, Sc2). Club leaders recognised the importance of the group to individual members: 'The reason she gets up on a Monday is because she has Pyramid' (CL1, Sc4).

The global theme **Progression and influence** encapsulates emergent issues related to Pyramid's development. Overall, attendees enjoyed their Pyramid Club experience; a popular recommendation was to make the programme longer. Club leaders suggested having the option of an extended programme, or offering 'top-up' sessions (depending on the needs of individual groups). Feedback from attendees addressed the delivery and content of sessions. Some activities were generally less popular with individual groups (e.g. Arts and crafts for the Year 9 club). The Pyramid secondary school pack (Pyramid, 2011) offers a choice of age-appropriate activities and allowed the manualised programme to be delivered around group preferences rather than to a prescribed plan, encouraging responsibility. Furthermore, negotiating and agreeing on activities increased pupils' willingness to participate (as this was generally regarded a 'fair' system).

As Pyramid 'graduates', attendees felt uniquely equipped to encourage new members: 'I would say about the activities... the team work and encourage them all to come' (Ramsey, Sc3). Club leaders proposed pupil 'ambassadors' were a valuable resource for raising wider awareness of Pyramid and encouraging future members, thus enabling pupils to actively contribute to services and policies that have an impact on them.

Pyramid attendees experienced mixed emotions when their Club came to an end; the 'mourning' phase of the group's development (Tuckman & Jensen, 1977):

I did feel sad...but now I see how it helps and it's made me more confident and I can actually talk to people (Caterpillar, Sc5).

Several success stories emerged from Club leader accounts and future benefits were anticipated: 'It's about how it's affected them in the long-term...It's opened doors for them



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really' (CL2, Sc5). Opportunities for attendees to flourish were identified through wider school engagement (e.g. attending after school/extra curriculum activities and increased participation in lessons). After Pyramid Club, having experienced socio-emotional 'nurturing', pupils were considered better equipped to engage in learning and reach their potential.

## **Discussion**

The aim of this study was to evaluate the impact Pyramid Club had on the SEWB of targeted pupils in early secondary education. Findings from a synthesis of the evidence showed improved SEWB for the Pyramid group and were consistent with findings from primary school studies (e.g. Cassidy *et al.*, 2014; 2015; Ohl *et al.*, 2012; 2008); a significant reduction in difficulties specifically targeted by Pyramid (i.e. emotional symptoms and peer relationship problems) was shown, with large effects. The highly distinct pattern of change observed for the Pyramid vis-à-vis the comparison group reflects the crucial distinction between groups, thus supporting intervention effects (Tabachnick & Fidell, 2013).

Moreover, whilst short-term improvements may attenuate, 12-month follow-up findings indicate that immediate gains from attending Pyramid Club were sustained, supporting conclusions drawn from previous studies (e.g. Ohl, 2009). Current research extends the Pyramid literature to include evidence of both short- and longer-term effectiveness with an adolescent population and helps tackle the dearth of evaluation studies on socio-emotional programmes for pupils in early secondary education.

Qualitative findings support intervention effectiveness: attendee and Club leader accounts were highly consistent; a pattern of change was revealed with Pyramid pupils exhibiting increased socio-emotional competencies after attending a Club. Further evidence suggests a link between Pyramid Club members' sense of group identity, or 'connectedness'

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to the social unit, and their response to the intervention (i.e. their engagement in the therapeutic process). Connectedness is fostered through active involvement and collaborative working (Catalano, Haggerty, Oesterle, Fleming, & Hawkins, 2004), identified as characteristic of the Pyramid Club experience. Moreover, the ‘goodness of fit’ between developmental needs and the contextual supports and opportunities that a given environment such as Pyramid Club provides, has an influence pupil motivation, behaviour, and mental well-being (Eccles, 2004). Key developmental needs of early-to-mid adolescents include incremental opportunities for autonomy and to demonstrate competence, caring and support from adults, developmentally appropriate supervision, and acceptance by peers (Whitlock, 2006); all elements that were elicited as characteristic of Pyramid Club.

A strength of the current study was the mixed methods design; method triangulation allows greater conviction in the research findings (Bryman, 2012). Furthermore, a mixed methods approach generated both generalisable findings and valuable insights into the Pyramid Club experience. Feedback from key stakeholders has contributed to a refined five-part Pyramid model (Figure 4), enhancing applied practice; it takes into account the connections between different groups (e.g. pupils, parents/carers, school staff, external agencies and Pyramid Club leaders), factoring in local needs and resources, school culture and ethos, and support networks. Pyramid works in partnership with schools and the model incorporates implementation processes that can be integrated with, and complement, existing school systems.

[Figure 4 about here]

Nonetheless, there are several limitations to the research; these refer to the individual methods, and more broadly, to the mixed methods design (e.g. implementing multiple measures and the burden on schools, and successfully integrating quantitative and qualitative findings).

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For the quantitative strand, the sample was restricted to schools running clubs across the academic years 2013/14 or 2014/15. Arguably, ‘research friendly’ schools typically volunteer, potentially increasing the likelihood of positive findings; however, numerous factors have an impact on the degree and consistency of support for interventions delivered in schools and this was not monitored with objective measures. Furthermore, setting a dosage threshold (70% attendance) for participants allowed the evidence-based standard to be met, however, this meant not all pupils initially invited to Pyramid Club were monitored; reasons for non-/poor attendance, or drop-out were not explored and this should be addressed in future studies.

The age range of participants permitted self-report measures (largely precluded from Pyramid studies with younger children). Whilst the use of multi-informants is considered a strength, it is also recognised that social desirability or acquiescence may have influenced self-report responses. Procedures were implemented to minimise perceived power differentials and participants were encouraged to respond truthfully. Nonetheless, adolescents may be either more, or less, inclined to reveal internalising issues; cross-informant discrepancies may reflect subjective, partial truths, influenced by individual and situational factors (Berg-Nielsen, Vika, & Dahl, 2003). Above threshold difficulties (according to SDQ ‘caseness’ criteria) were not identified by Pyramid pupil self-reports at T1, whilst informant-rated data showed elevated scores on subscales pertinent to Pyramid (i.e. emotional symptoms and peer relationship difficulties) and low prosocial behaviour. Teachers’ knowledge of which pupils received the intervention may have influenced their perceptual assessments on the SDQ. However, different teacher-informants completed the measure at T2 and T3, and results were consistent; inter-rater reliability suggests an absence of bias. Selecting appropriate measures is a major issue: as socio-emotional problems can be context specific, information gleaned from multiple informants (teacher, self-reports, and

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parents/carers) is, arguably, the most robust application of the SDQ (Goodman, Ford, Simmons, Gatward, & Meltzer, 2000) and should be attempted in future.

Whilst limitations also apply to the focus group method, several strategies were implemented to support the credibility of the qualitative findings: ‘thick description’ (Kuzel & Like, 1991), a thorough account of method and procedures, provided transparency of the research process; member checking was used to ensure responses were recorded accurately; and verbatim quotations captured focus group participants’ ‘true voice’, thus avoiding young people’s perspective being marginalised. Furthermore, although it can be argued that subjective responses (verbal or questionnaire data) may not translate to new behaviours (Pinfold *et al.*, 2003), Club leader accounts showed high consistency with those of Pyramid pupils, strengthening conviction in the findings.

Future evaluations, using a more robust comparator, could examine the extent to which the unique components of the Pyramid intervention specifically lead to intended outcomes; comparing Pyramid with another short-term group intervention with a different approach, for example. Additional scrutiny of implementation processes would enable a greater understanding of the methods and conditions which support optimal effectiveness: a protocol checklist to measure treatment integrity would identify programme specific elements and, moreover, would generate evaluative data for reporting fidelity; an objective measure of support provided by schools would help ascertain facilitating components particular to the host environment. Finally, exploring how Pyramid Club can be adapted to cater to the needs of specific group, e.g. children or young people with physical disabilities, is another direction of potential future research interest.

Despite limitations, the research findings have important implications; evidence-based, theoretical models are crucial for schools to make informed decisions when selecting interventions to implement. Pyramid Club provides a low-cost, demonstrably effective

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intervention with long-term impact and can be incorporated as part of a multi-component Health Promoting School strategy to support children and young people's mental health. The five-part Pyramid model proposes how implementation processes can be integrated with existing school systems and recommended strategies (NCB, 2015; Public Health England, 2015) to improve socio-emotional and educational outcomes for young people and, crucially, create 'real world' outcomes which have a positive impact on pupils' lives.

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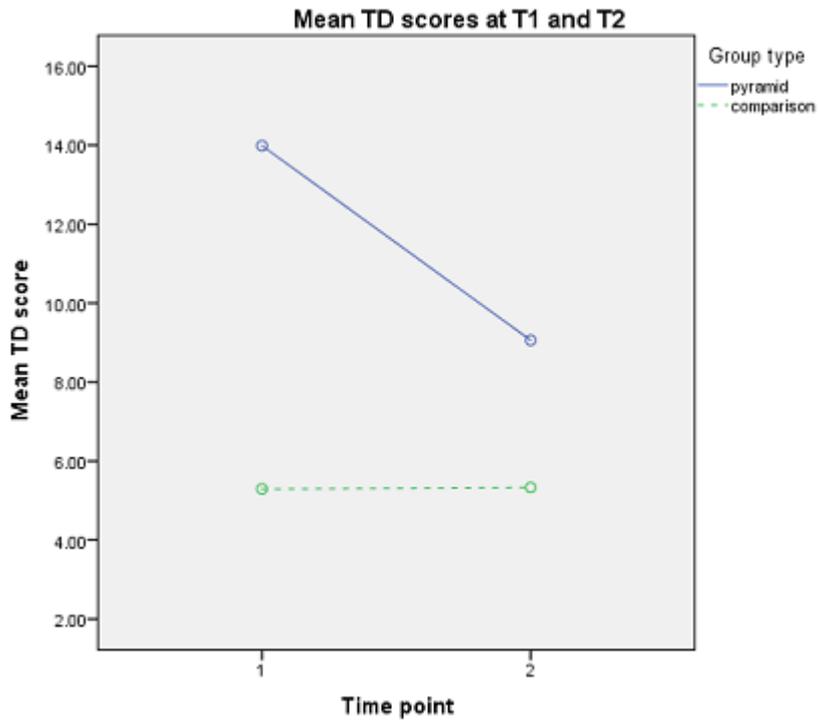
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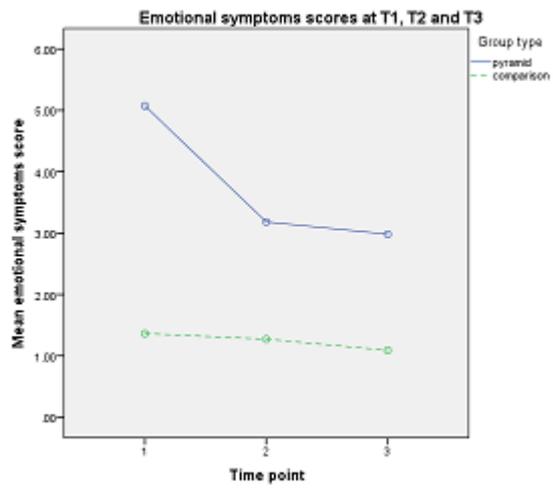
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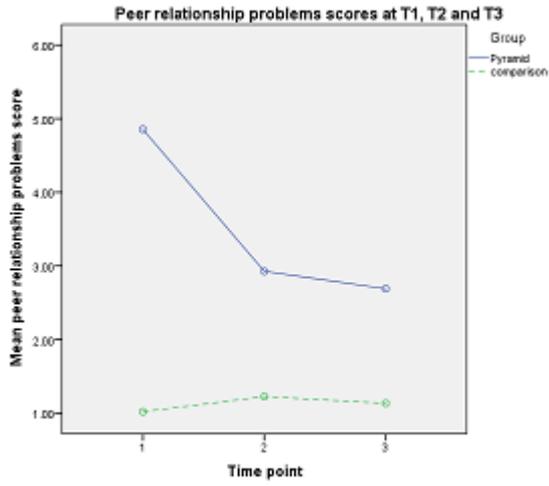
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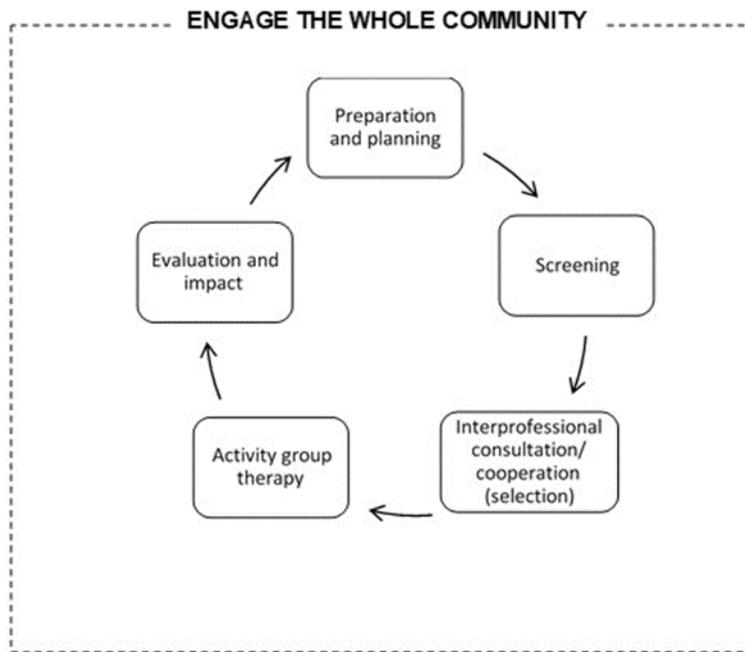


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## Improving socio-emotional health for school pupils

Figure 1: Total difficulties scores for the Pyramid and comparison groups T1 and T2

Figure 2: Emotional symptoms over time

Figure 3: Peer relationship problems over time

Figure 4: Pyramid five-part, preventative model

## Improving socio-emotional health for school pupils

Table 1. Pyramid Club: a therapeutic, activity-based group programme

Week	Focus	Therapeutic activities*	A typical club
Weeks one and two	Forming the group: Ownership and belonging  Developing group identity and cohesion, and building trust	Circle time Arts/crafts activity Games Food preparation/snack time	Club members agree on a name for their club and decide on a set of rules <i>Example of an art activity: designing a club poster</i>
Weeks one to ten	Encouraging friendship/social skills development  Building confidence and self-esteem  Regulating emotions and strengthening resilience	Circle time Arts/crafts activity Games Food preparation/snack time	Social and task-based skills are practised, working co-operatively with adults and peers <i>Example of a games activity: team or paired construction of newspaper towers</i>
Week ten	Closing the group: Reflection and moving on	Circle time Arts/crafts activity Games Food preparation/snack time	A celebration of Pyramid club with a party; young people and club leaders say 'thank you' and 'goodbye' <i>Example of a circle time activity: rounds of 'What I'll take away from Pyramid Club'</i>

\*Circle time: facilitates talking, listening, and turn-taking; encourages expression of feelings

Arts/crafts activity: allows self-expression and fosters sense of achievement

Games: a fun way to practise social skills and cooperation with others

Food preparation/snack time: nurturing; encourages sharing; prompts spontaneous conversation

## Improving socio-emotional health for school pupils

Table 2. Demographic profile of study participants

Pyramid Club site	Pyramid group <i>n</i>	Comparison group <i>n</i>	Gender <i>n</i> male /female	FSM <i>n</i>	Ethnicity <i>n</i>
School 1	6	6	5♂; 1♀	0	6 White British
School 2	8	8	4♂; 4♀	2	4 Black African; 2 Asian Indian; 2 Asian Other
School 3	7	7	3♂; 4♀	2	1 White British; 3 Asian Pakistani; 2 Asian Indian; 1 Asian Other
School 4	8	8	5♂; 3♀	1	7 White British; 1 Asian Indian
School 5	7	7	3♂; 4♀	0	7 White British
School 6	8	8	4♂; 4♀	0	7 White British; 1 Asian Other
School 7	10	10	2♂; 8♀	3	4 White British; 2 White Other; 2 White & Asian; 1 Black Caribbean; 1 Asian Pakistani
School 8	12	6*	12♀	4	3 White Other; 2 Asian Pakistani; 4 Asian Other; 1 Asian Indian; 1 White and Black Caribbean; 1 White and Black African
					*1 White Other; 2 Asian Pakistani; 3 Asian Other

♂: Male; ♀: Female; FSM: Free school meals



## Improving socio-emotional health for school pupils

Table 3. Final sample used for data analysis

Measure	Pyramid group ( <i>n</i> =66)			Comparison group ( <i>n</i> =60)		
	Males <i>n</i>	Females <i>n</i>	Total <i>n</i>	Males <i>n</i>	Females <i>n</i>	Total <i>n</i>
SDQ informant-rated version (Goodman, 1997)	26 (39%)	40 (61%)	66 (100%)	22 (36%)	29 (48%)	51 (85%)
SDQ self-report version (Goodman et al., 1998)	27 (41%)	34 (51%)	61 (92%)	24 (40%)	36 (60%)	60 (100%)

## Improving socio-emotional health for school pupils

Table 4. A priori codes for thematic analysis of Pyramid Club focus group data

Code label	Description
Socio-emotional effect (SEE)	Changes in socio-emotional competencies, e.g. self-esteem, confidence, social skills, relationships with peers
Pyramid schema	Elements which reflect fundamental aspects of Pyramid, e.g. aspects of delivery, core activities etc.
School performance effect (SPE)	Identification of any impact which relates to school performance
Drivers for change	Potential elements which relate to behaviour change: procedures (BCPs) or techniques (BCTs)
Barriers	Factors which impede intervention effectiveness/optimum delivery, potentially preventing/inhibiting behaviour change

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Table 5. Teacher-rated SDQ mean scores at T1 and T2

Scale	Pyramid group ( <i>n</i> =66)		Comparison group ( <i>n</i> =51)	
	Baseline (T1) Mean (SD)	Post-test (T2) Mean (SD)	Baseline (T1) Mean (SD)	Post-test (T2) Mean (SD)
Conduct problems	0.88 (1.26)	0.64 (1.03)	0.59 (1.33)	0.53 (1.01)
Hyperactivity/inattention	3.42 (2.52)	2.80 (2.0)	2.43 (2.64)	2.24 (2.62)
Emotional symptoms	5.03 (2.58)	3.09 (2.35)***	1.29 (1.55)	1.39 (2.01)
Peer relationship problems	4.67 (2.33)	2.73 (2.40)***	0.98 (1.21)	1.18 (1.74)
Prosocial behaviour (strength)	6.12 (2.38)	7.24 (2.28)***	7.61 (2.12)	7.75 (2.25)
Total difficulties	13.98 (4.88)	9.06 (5.37)***	5.29 (4.96)	5.33 (5.40)

\*\*\**p* < .001

## Improving socio-emotional health for school pupils

Table 6: Self-report SDQ mean scores at T1 and T2

Scale	Pyramid group ( <i>n</i> =61)		Comparison group ( <i>n</i> =60)	
	Baseline (T1) Mean (SD)	Post-test (T2) Mean (SD)	Baseline (T1) Mean (SD)	Post-test (T2) Mean (SD)
Conduct problems	1.43 (1.56)	1.54 (1.37)	1.38 (1.52)	1.42 (1.74)
Hyperactivity/inattention	3.67 (2.13)	3.36 (2.03)	3.25 (1.95)	2.97 (1.95)
Emotional symptoms	4.21 (2.48)	3.28 (2.57)*	2.38 (1.95)	2.33 (2.14)
Peer relationship problems	3.54 (2.32)	2.41 (1.81)**	1.75 (1.35)	1.53 (1.47)
Prosocial behaviour (strength)	7.18 (1.88)	7.72 (2.28)	7.70 (1.83)	7.85 (1.84)
Total difficulties	12.97 (2.53)	10.70 (5.69)**	8.77 (4.61)	8.25 (5.13)

\**p* < .05; \*\**p* < .01

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Table 7: Experiences of Pyramid Club users (extracts from the table of themes)

Theme	Subthemes ( <sup>1,2</sup> )	Illustrative quote (Sc = school)
Perceived outcomes	Socio-emotional gains <sup>1</sup> ; School performance effects <sup>2</sup>	‘It helped me with my confidence for making new friends and stuff like that’ <sup>1</sup> (Jessica, Sc1) ‘I put my hand up more in class and contribute more in lessons’ <sup>2</sup> (Gabrielle, Sc3)
Identity	Sense of personal change <sup>1</sup> ; Group identity <sup>2</sup>	‘I used to be really shy ... I’ve got more confidence now to go and talk to people’ <sup>1</sup> (Freddy, Sc5) ‘You don’t have to feel shy ‘cos everyone is the same’ <sup>2</sup> (Becky, Sc8)
Pyramid development and diffusion	Enhancing Pyramid <sup>1</sup> ; Cascading impact <sup>2</sup>	‘To make it improve it could go on for longer’ <sup>1</sup> (Yoda, Sc1) ‘If they did Pyramid Club again we could go down and talk to people’ <sup>2</sup> (Caterpillar, Sc5)
Pyramid legacy	Group ‘mourning’ <sup>1</sup> ; ‘Real world’ implications <sup>2</sup>	‘I’m sad that the weeks have passed but I’m quite proud’ <sup>1</sup> (Light, Sc8) ‘We’re more confident...we don’t just walk past [peers]; we stop and speak’ <sup>2</sup> (Jeff, Sc5)

## Improving socio-emotional health for school pupils

Table 8: Experiences of Pyramid Club leaders (extracts from the table of themes)

Theme	Subthemes <sup>(1,2)</sup>	Illustrative quote (CL = Club leader)
Perceived outcomes	Socio-emotional gains <sup>1</sup> ; School performance effects <sup>2</sup>	'Before Pyramid they wouldn't have had the confidence to go up to each other' <sup>1</sup> (CL1, Sc1) 'They both ask questions and are so much more interactive in the class' <sup>2</sup> (CL5, Sc5)
Identity	Sense of personal change <sup>1</sup> ; Group identity <sup>2</sup>	'It was a lot to do with them feeling more and more comfortable in their own skin almost' <sup>1</sup> (CL2, Sc6) 'As a group together...they're even more confident' <sup>2</sup> (CL1, Sc5)
Pyramid development and diffusion	Enhancing Pyramid <sup>1</sup> ; Cascading impact <sup>2</sup>	'Additional [Club leader] training..especially with older age groups' <sup>1</sup> (CL1, Sc7) 'The best thing really is to get them to hear [about Pyramid] from another student' <sup>2</sup> (CL2, Sc6)
Pyramid legacy	Group 'mourning' <sup>1</sup> ; 'Real world' implications <sup>2</sup>	'___ asked if he could come and be a leader...I think he just wants to do Pyramid Club again' <sup>1</sup> (CL4, Sc5)  'I've also learnt that school's not all about getting good grades. It's about developing the child as a whole' <sup>2</sup> (CL2, Sc5)