

EVALUATING THE IMPACT OF A SCHOOL-BASED
INTERVENTION ON THE SOCIO-EMOTIONAL WELL-
BEING AND SCHOOL PERFORMANCE OF PUPILS
IN EARLY SECONDARY EDUCATION

MICHELLE JAYMAN

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Abstract

Psychological distress in children and adolescents is increasing and, despite the growing number in need, many are not able to access appropriate and timely support (Thorley, 2016). Schools have great potential for meeting pupils' emerging mental health needs and can play a central role in the transformation of services; effective, early intervention programmes can improve pupils' socio-emotional well-being and educational outcomes (e.g. Bonell et al., 2014; Greenberg, 2010). There is a demand for evidence-based models of good practice to improve schools' existing support and provision (Department of Health (DH), 2013; 2015).

The three studies in this thesis describe an ecologically valid evaluation of the Pyramid socio-emotional intervention (aimed at shy, withdrawn or socially isolated pupils) through its impact on socio-emotional well-being and school performance. While previous research (e.g. Cassidy, McLaughlin, & Giles, 2014; Ohi, Fox, & Mitchell, 2012) examined Pyramid's effectiveness with primary-aged children, this research looked at the impact on pupils in early secondary school (11- to 14-years). A mixed methods design was implemented within a critical realist framework to examine intervention effectiveness and procedures and mechanisms underlying behaviour change. Pyramid pupils were matched with a non-intervention comparison group on age, gender, socio-economic status, and English and Mathematics levels. Socio-emotional well-being was measured using objective and subjective measures which included the Strengths and Difficulties Questionnaire (SDQ: Goodman, 1997; Goodman, Meltzer, & Bailey, 1998) and the Well-Being Questionnaire (WBQ: New Philanthropy Capital, 2010) at pre- and post-intervention. Subject ability self-concepts and current academic levels (English and Mathematics) were used as subjective and objective measures of school performance respectively at pre- and post-intervention. At 12-month follow-up the objective measures were used to re-examine the dual domains of interest. The perceptions and experiences

of Pyramid service users and club leaders were collected through focus groups and thematically analysed.

A distinct trajectory of change for the Pyramid group compared to comparison group peers was identified: intervention recipients demonstrated significant improvements in targeted aspects of socio-emotional well-being at short- and longer-term follow-up, showing large effects, and supporting previous conclusions from primary school evaluations. Pupils' school performance findings indicated that Pyramid had a 'buffer effect' on the typical academic 'dip' characteristic of this developmental period. Qualitative findings provided confirmatory evidence for Pyramid's effectiveness and an understanding of procedures and mechanisms underlying behaviour change.

Collectively, these new findings have important implications for theory, practice and future evaluation research which are considered in this thesis. The thesis concludes with a proposal for a five-part Pyramid model that is integrated with Health Promoting School (HPS) strategies to support pupils' socio-emotional well-being, generating 'real world' impact on children and young people's lives.

Declaration of relevant publications and conference presentations

- Jayman, M. (2014). The practicalities of collecting data in secondary schools. *PsyPAG Quarterly*, 92, 20-23.
- Jayman, M. (2015). Schools-based research: hints and tips for successful data collection in schools. In E. Norris (Ed.), *A guide for psychology postgraduates: Surviving postgraduate study* (pp.18-22). Leicester: The British Psychological Society.
- Jayman, M., Ohl, M., Hughes, B., & Fox, P. (2015). Improving the socio-emotional health of young people in early secondary education: preliminary findings from a study of the Pyramid intervention project. In T. M. Ostrowski, I., Sikorska, & K. Gerc (Eds.), *Resilience and health in a fast-changing world* (pp.109-120). Krakow: Jagiellonian University Press.
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Chapter One

Introduction to the thesis

This chapter introduces the research presented in the thesis and identifies its aims and objectives. Key concepts are defined and relevant governmental policies considered. A review of the literature provides a context for the current research on Pyramid, a targeted, school-based socio-emotional intervention. A narrative synthesis is presented of a scoping review of literature concerning the impact of socio-emotional interventions in United Kingdom (UK) secondary schools on pupils' school performance. Implications of the findings are discussed and a rationale for the current research provided. The research questions which refer to Pyramid's effectiveness with an older school population (aged 11- to 14-years), the secondary impact of Pyramid on pupils' school performance, and the underlying processes and mechanisms of behaviour change, are stated.

1. Child and adolescent mental health: current concerns and the role of schools

The role of schools in providing early intervention to pupils with psychological difficulties has become increasingly recognised, with some authors insisting that mental health should be regarded as part of the 'core business' of schools (Bonell et al., 2014; Layard & Clark, 2014). This sentiment is incorporated within a settings-based approach to health (World Health Organisation: WHO, 1986; http://www.who.int/healthy_settings/en/), endorsed by the UK government. However, a number of gaps exist in the school-based intervention research and 'real world' evaluations of specific programmes are required to identify models of good practice to improve existing support and provision (DH, 2013; 2015; House of Commons Health Committee: HCHC, 2014). The current research augments the extant school-based intervention literature and provides ecologically valid evidence from an evaluation of secondary school Pyramid (section 2.3.).

Additionally, it is acknowledged that the foundations for good mental health and socio-emotional well-being are laid during childhood and adolescence and impact across the life course (Carta, Di Fiandra, Rampazzo, Contu, & Preti, 2015; Patel, Filsher, Hetrick, &

McGorry, 2007). A climate of sustained economic austerity in the UK, alongside radical changes in schools and mounting pressures on young people, has led several authors (e.g. Fazel, Hoagwood, Stephan, & Ford, 2014) to suggest psychological distress is growing. Increasing levels of stress are associated with academic and sexual pressures, technology and social media, bullying and body image (The Children's Society, 2015; The Prince's Trust, 2015; YoungMinds, 2013). Extensive spending cuts to Child and Adolescent Mental Health Services (CAMHS) (£50 million in real terms between 2010 and 2015: Hansard, 2015) has created a treatment gap alongside a growing number of pupils presenting with mental health and behaviour difficulties in schools (Taggart, Lee, & McDonald, 2014). Mental health problems in childhood and adolescence are associated with multiple poor outcomes with both immediate and long-term consequences. These include high absenteeism, disrupted schooling and reduced educational success, lack of school engagement and connectedness, difficulties with peer relationships, and poor social functioning (Green, McGinnity, Meltzer, Ford, & Goodman, 2005; Mychailyszyn, Mendez, & Kendall, 2010).

1.1. Background to the current research: aims and objectives

Previous evaluations of the Pyramid intervention (section 2.4.) have predominantly consisted of effectiveness studies with primary school children (7- to 8- years-old) (e.g. McKenna, Cassidy, & Giles, 2014; Ohl et al., 2012; Ohl, Mitchell, Cassidy, & Fox, 2008). These studies have demonstrated robust empirical evidence of Pyramid's effectiveness for improving the socio-emotional well-being of vulnerable primary-aged pupils (Clarke, Morreale, Field, Hussein, & Barry, 2015). Additional research has shown intervention effectiveness with transition-aged children (10- to 11-years-old) (e.g. Cassidy et al., 2014; Lyons & Woods, 2012). However, there is a gap in the Pyramid evaluation research with regard to secondary school studies (programmes targeted at 11- to 14-year-olds which cater for the upper age range of children Pyramid supports). The first aim of the research is to address this gap in the literature.

A concern for school-based researchers is to establish the best age for mental health interventions to be most effective, to ensure limited resources are allocated appropriately and the potential for successful outcomes is optimal (DH, 2015; Fazel et al., 2014). A key focus of the current research is whether Pyramid is a developmentally appropriate intervention for young people in early secondary education. The research findings will extend the primary school evidence base and enable Pyramid to be examined as a model of good practice for implementation in secondary schools.

The second aim of the research relates to the bi-directional relationship between socio-emotional well-being and pupils' school performance, whereby changes in one domain can predict changes in the other (Bonell et al., 2014; Brooks, 2014). There is a paucity of studies in the socio-emotional literature that investigate the impact of interventions in this respect and the current research aims to address this by examining Pyramid's impact on pupils' school performance. The escalating demand for school intervention researchers to demonstrate robust evidence of socio-emotional outcomes in an era of restricted funding has led some authors (e.g. Vidair, Sauro, Blocher, Scudellari, & Hoagwood, 2014) to suggest that school-based socio-emotional interventions are more likely to be embraced if a secondary impact on educational domains can be demonstrated.

The third and final aim of the research is to address the need to move beyond demonstrating intervention effectiveness and provide some understanding of the processes and mechanisms underlying behaviour change (Cheney, Schlösser, Nash, & Glover, 2014). Whilst it is broadly acknowledged that the primary focus of evaluation studies should be on establishing effectiveness, outcome drivers or mechanisms of change are often neglected. However, once effectiveness is demonstrated, understanding an intervention's active components is essential for programme development (Boeije, Drabble, & O'Cathain, 2015; Michie et al., 2011).

To address the gaps identified in the extant literature, the main objective of the research was to implement a mixed methods design (Chapter Three) to conduct a robust evaluation of Pyramid in secondary school. A multi-method strategy was adopted to allow the current evaluation of Pyramid to be rigorously scrutinised through triangulation of method (Bryman, 2012). The objectives of the quantitative phase were to examine the short- and longer-term effectiveness of Pyramid (Study One and Study Three respectively) on socio-emotional and school performance outcomes. The objectives of the qualitative phase (Study Two) were to scrutinise the quantitative findings in relation to Pyramid's short-term effectiveness (demonstrating either supporting or disconfirming evidence), and to investigate underlying processes and mechanisms of Pyramid that influence behaviour change in recipients.

1.2. Definitions and key concepts in the context of the current research

Key terminology used in the thesis is introduced in this section within the context of the research and in relation to definitions and concepts in the mental health literature.

Pyramid is a manualised, school-based, socio-emotional intervention, targeted at shy, withdrawn or isolated pupils (aged 7- to 14-years). It aims to develop **socio-emotional competencies** and **well-being** (Ohl, Hughes, & Fox, 2015). These terms are used broadly within the intervention and refer to recipients being able to express and communicate their emotions effectively, self-regulate, establish and maintain healthy relationships, and feel positive and able to cope with day-to-day life. As such, these terms are consistent with the National Institute for Health and Care Excellence (NICE, 2009) definition of **socio-emotional well-being**, used widely in both education and health contexts: a construct encompassing three domains; happiness, confidence, and not feeling depressed (emotional well-being); a feeling of autonomy and control over one's life, problem-solving skills, resilience, attentiveness, and a sense of involvement with

others (psychological well-being); the ability to have good relationships with others, and to avoid disruptive behaviour, delinquency, violence or bullying (social well-being).

Pyramid promotes children and young people's (CYP's) **well-being (mental health)**. This is more than the absence of mental health problems and is described as: 'A syndrome of symptoms of positive feelings and positive functioning in life' (Keyes, 2002, p208). It is a multi-dimensional construct (Czapiński, 2011), often used broadly in the literature to encompass socio-emotional well-being. Its components include the hedonic and eudaimonic features described above e.g. happiness and life satisfaction, and psycho-social functioning and optimal human growth (Diener, 2009; Ryff & Singer, 2008). Mental well-being is typically represented on a spectrum which extends from a high level of **subjective well-being** (an individual's cognitive and affective evaluation of their life) described as 'flourishing', across to a state of minimal subjective well-being at the opposite end of the continuum, characterised by feelings of emptiness and stagnation and described as 'languishing' (Keyes, 2002). A higher prevalence of languishing is typically found amongst adolescents who may be trying to fill the 'void' in their lives (Keyes, 2004). This suggests that Pyramid may be a timely intervention for young people in early secondary education and within this developmentally sensitive period.

1.2.1. Mental health problems and the current context for Pyramid

There is robust evidence that a minority of secondary school children may experience clinically diagnosable mental health problems. For example, data from the Millennium Cohort Study (MCS) (Gutman, Joshi, Parsonage, & Schoon, 2015) suggest 10% of 11-year-olds experienced a clinically diagnosable mental health problem in 2012, broadly the same as in 1999. Moreover, and of particular relevance to this thesis, a larger proportion of school-aged adolescents (almost a third) have self-reported 'low' (sub-clinical) levels of well-being i.e. feeling 'sad' or 'down' at least once a week (Brooks, Magnusson, Klemmera,

Spencer, & Morgan, 2011). In addition, there is evidence (Fink et al., 2015) of an increase in self-reported emotional problems amongst English secondary school pupils (N=3,336) (aged 11- to 13-years) between 2009 and 2014, particularly from girls. According to the authors, this finding could be associated with the lack of effective interventions targeted at emotional difficulties and the greater attention given to externalising behaviours (e.g. conduct disorders and hyperactivity) in schools. Evidence from the United States of America (USA) suggests a similar bias; adolescents experiencing internalising difficulties (e.g. anxiety and depression) are typically under-represented in school mental health care (Shackleton et al., 2016).

In 2015 England was ranked 14th out of 15 countries for CYP's overall satisfaction with life (The Children's Society, 2015). Factors identified as having the most negative impact on mental well-being were related to experiences of school and body image. Findings also indicated that as children moved into adolescence their well-being declined. A downward trend was discernible from age 10, for example: 2.4% of 10-year-old respondents had low levels of life satisfaction, this increased to 8.2% of respondents aged 16. Moreover, there was a sharp decline between Year 6 (10- to 11-year-olds) and Year 8 (12- to 13-year-olds) in satisfaction with most aspects of school, including relationships with peers in their class. These findings were consistent with trends identified in a prior survey (The Children's Society, 2014) which showed a significant decline in satisfaction with school and appearance as children got older. Furthermore, academic stress has been highlighted as a particular cause of concern: prolific testing across the developmental stages and the rigorous overhauling of the qualifications framework are two key indicators of the government's educational priorities, arguably to the detriment of CYP's mental well-being (Fink et al., 2015; Hutchings, 2015). Findings from The Children's Society (2015) described previously, contribute to a wealth of evidence which indicates that early adolescence is a vulnerable period for mental well-being (e.g. Hagell, Coleman, & Brooks, 2015; Lessof, Ross, Brind, Bell, & Newton, 2016) and represents a

crucial developmental stage at which to promote mental health and reduce risk factors, for example, by implementing appropriate socio-emotional interventions such as Pyramid.

Although poor mental well-being in childhood or adolescence does not inevitably lead to later disorder (mental illness), it is probably the most evidenced predictor of psychiatric illness in adults (Fryers & Brugha, 2013). Individual and cohort studies show that anxiety and emotional problems are a risk factor for depression in adolescence and early adulthood, and even sub-threshold levels of depression confer a risk of depression and suicide in adulthood (Fergusson, Horwood, Ridder, & Beautrais, 2005).

A major longitudinal study of mental health outcomes (Reef, Diamantopoulou, van Meurs, Verhulst, & van der Ende, 2011) monitored the trajectories of 2,076 children over a 24-year period. The authors identified childhood anxiety and conduct disorder as two of the main predictors of adult mental illness with substantial continuity of psychopathology. Moreover, approximately half of all individuals who experience lifetime mental health problems first develop symptoms by the age of 14 (Kessler et al., 2005). Despite more than 50% of adults receiving a diagnosis in childhood, the majority do not receive appropriate treatment at the time (Kim-Cohen et al., 2003). A prospective, longitudinal study examining psychiatric diagnosis in adolescents (aged 11, 13 and 15) and adults (aged 18, 21 and 26) revealed that among adult cases 73.9% had received a diagnosis prior to age 18 and 50% before age 15 (Kim-Cohen et al., 2003). Creating opportunities to promote mental health in childhood and adolescence can have a protective effect and reduce the burden of adult illness (Enns et al., 2016). Whilst early intervention (including Pyramid) has potential to reduce the risk of adult mental health problems, evidence suggests that many children do not get appropriate treatment.

Despite identifying 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 school) (Cheney et al., 2014). A narrative review by Clarke et al. (2015) examining 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. A further 20.5% (N=8) of programmes were delivered at both primary and secondary level, although older pupils were predominantly in their first year of secondary education (11- to 12-years-old). The current research augments the extant intervention evaluation literature concerning secondary-aged pupils (and includes young people up to 14-years-old) which has been highlighted as sparse (Cheney et al., 2014; Clarke et al., 2015).

1.2.2. Emergent approaches to mental health and the Pyramid model

Mental health is a major public health concern; poor mental health has a detrimental impact on individuals, families, communities and the economy (DH, 2013; HCHC, 2014). Public health efforts have traditionally concentrated on the treatment of psychiatric disorders. However, more recent attention has focused on competence enhancement models which promote good mental health for CYP, protecting against poor mental well-being and the development of mental illness, thus averting wide-ranging negative outcomes (Huppert, 2009; Keyes, Dhingra, & Simoes, 2010). Such models of healthy development encompass both mental health promotion (by fostering competencies and coping skills) and risk reduction (Catalano et al., 2012; Masten, 2011). The Pyramid club theory of change (Hughes, 2014) (section 2.1.) aligns with a competence enhancement model: intervention outcomes are identified as specific socio-emotional competencies and optimum psychosocial functioning is the ultimate long-term goal. The relevance of this type of model in the context of government strategies to address child and adolescent mental health is briefly considered in the following section.

1.3. The national agenda on child and adolescent mental health and the role of schools

Mental health promotion and preventative, early intervention are core principles in service delivery (DH, 2012); the cost-effectiveness of this strategy is pertinent in the context of further stringent spending reviews. Early intervention can prevent CYP developing mental health problems and avoids more intensive and longer-term interventions later on, thus providing a strong economic case for such an approach (Layard & Clark, 2014; Pugh, 2015). However, child and adolescent mental health has not yet received the financial and political priority it deserves (National Children's Bureau (NCB) & National Health Service (NHS) Confederation, 2013) and the persistent policy to treatment gap underlines how much work needs to be done (Layard & Clark, 2014; HCHC, 2014). The fragmentation of commissioning responsibilities for CAMHS, coupled with reforms to dedicated funding streams (e.g. the Early Intervention Grant) has negatively impacted on how well-primed schools are to intervene early with pupil mental health concerns and avert more serious problems developing (NCB & NHS Confederation, 2013).

Government strategy (DH, 2015) describes a 'step change' in how mental health care is delivered, built around the needs of children, young people and their families. Health and Wellbeing Boards have been tasked with developing local Transformation Plans and commissioning services, including mental health promotion and prevention work. This strategy adopts a 'settings-based approach' which involves integrating sectors from the wider social system e.g. schools, the NHS, public health, local authorities and social care (WHO, 1986: http://www.who.int/healthy_settings/en/). A settings-based approach builds on the principles of community participation, partnership, empowerment and equity: Health Promoting Schools (HPS) incorporate health into all aspects of school life based on the premise that health is essential for learning and development.

The potential impact of school-based interventions is considerable (Bonell et al., 2013; Greenberg, 2010) and the benefits of embedding mental health provision within UK schools are strongly advocated (DH, 2013; 2015; Fazel et al., 2014; HCHC, 2014). A combined focus on prevention and promoting positive outcomes has seen a growth in interventions designed to work with CYP in their own social contexts, primarily in schools (Gutman & Schoon, 2015). This encompasses the concept of a competence enhancement model: Pyramid provides one example of a school-based intervention which fits within the government's settings-based approach to supporting child and adolescent mental health.

1.3.1. Policy implications for schools

A political shift marked by decentralisation has enabled schools to influence the services that are commissioned by feeding information on pupil mental health into local Transformation Plans. Moreover, schools can contract services directly, working with local providers to support mental health promotion and deliver interventions according to individual school needs (Department for Education: DfE, 2016; DH, 2015). Despite government recommendation for services to focus rigorously on outcomes (DH, 2015), research has shown that interventions are often poorly targeted, fail to reach those who would benefit most and are commonly not selected on the strength of evidence (Bywater & Sharples, 2012; Khan, Parsonage, & Stubbs, 2015). Ensuring services are suitable and, therefore, most likely to demonstrate successful outcomes, necessitates a thorough and robust commissioning process (DH, 2015). This work can be supported by evidence hubs e.g. the Early Intervention Foundation (EIF: www.eif.org.uk) and Project Oracle (www.project-oracle.com): both apply a rigorous standards of evidence framework to intervention evaluations and endeavour to strengthen the link between research and practice.

1.4. The impact of mental well-being on pupils' school performance

A substantial body of evidence suggests a bi-directional relationship between mental well-being and a variety of measures of school performance. School performance refers to both academic and non-academic indicators (Zins, Weissberg, Wang, & Walberg, 2004) and includes school attainment (e.g. grades, subject mastery, test performance), school attitudes (e.g. motivation, responsibility, connectedness), and school behaviour (e.g. engagement, attendance, study habits). For example, research has shown that pupils with internalising issues (e.g. anxiety and depression) show diminished academic functioning and those with externalising problems (e.g. anger and frustration) exhibit school difficulties, including learning delays and poor achievement (Roeser, Eccles, & Strobel, 1998). Children with higher levels of well-being, on average, achieve better academic grades and are more engaged in school, both concurrently and later in their school careers (Gutman & Vorhaus, 2012). Alternatively, poor mental health in early adolescence has a strong negative association with subsequent exam success (Cornaglia, Crivellaro, & McNally, 2012).

Poor mental health has been widely linked with weak academic performance and reduced life chances including less workforce participation and lower income (e.g. Gibb, Fergusson, & Horwood, 2010; Hale, Bevilacqua, & Viner, 2015; Riglin, Frederickson, Shelton, & Rice, 2013; Suldo, Gormley, DuPaul, & Anderson-Butcher, 2014), whilst low educational achievement has been associated with adult anxiety and depression (Fryers & Brugha, 2013). For Elias and Moceris (2012) social and emotional development is allied to academic accomplishment because it embodies a set of skills imperative to success, not just in the classroom but within the whole school context and beyond. For example, pupils who improve their socio-emotional skills become more self-aware and develop greater academic self-efficacy. Moreover, the benefits accrued from enhanced socio-emotional competencies persist through the life trajectory (Collaborative for Academic,

Social and Emotional Learning (CASEL) & Committee for Children, 2016; Gutman et al., 2015).

The association between good mental well-being and positive school performance suggests socio-emotional interventions can provide a dual function; preventing the development, or increasing severity, of mental health problems whilst simultaneously improving the effectiveness of education (Bonell et al., 2014; Fazel et al., 2014).

Evidence of the impact of socio-emotional well-being on aspects of school performance considered in this section supports the premise that schools are an ideal environment for achieving both mental health and educational outcomes.

1.5. School: a unique setting for educational and mental health outcomes

The school setting has been heralded as the ideal context in which to enhance both socio-emotional well-being and school performance outcomes (Bonell et al., 2013; 2014; McLaughlin & Gray, 2015). Schools exist in almost all communities and occupy various roles with responsibilities beyond imparting knowledge; a concept embedded within a settings-based approach (section 1.3.). They offer a unique setting for supporting health outcomes due to their wide reach and the extended amount of time CYP are required to spend there. Schools can provide an 'enabling environment', where individuals come together, experience a sense of belonging and collectively contribute to the growth and well-being of others (Royal College of Psychiatrists, 2013). They can be a source of supportive relationships outside of the family unit and have the potential to exert a protective influence (Masten & Motti-Stafanidi, 2009). Moreover, school staff are well-placed to identify pupils with difficulties which may impact on their well-being (DH, 2016).

The concept of 'school connectedness' has emerged as an important influence on CYP's mental well-being (McLaughlin & Gray, 2015; Vaz et al., 2015), referring to the degree to which pupils feel accepted, respected, included and supported in their school community (Goodenow, 1993). Schools with a climate characterised by high connectedness reduce barriers to learning (Catalano, Haggerty, Oesterle, Fleming, & Hawkins, 2004) and have been associated with improved pupil performance in literacy and numeracy (Spier, Cai, Osher, & Kendziora, 2007). Some researchers (e.g. Christenson, Reschly, & Wylie, 2012) insist that school connectedness is associated with higher overall academic attainment, lower drop-out rates and higher attendance.

1.5.1. The challenge for schools and the contribution of the current research

The potential for UK schools to influence pupils' health and educational outcomes is not being fully utilised (Taggart et al., 2014; Thorley, 2016). Scoping review findings (Vostanis, Humphrey, Fitzgerald, Deighton, & Wolpert, 2013) identified that mental health provision in English schools is predominantly reactive, not preventative, and largely not evidence-based. Moreover, an NCB and NHS Confederation survey (2013) reported that 89% of mental health professionals agreed that the potential for schools to promote mental well-being, detect emerging mental health problems and support vulnerable students was not fully harnessed. Feedback from pupils supported these findings: many young people felt that mental health issues were not given sufficient attention and those experiencing difficulties reported receiving little or no support (NCB & NHS Confederation, 2013). Moreover, it is argued that tensions between mental health initiatives and competing school priorities continue to prevent the implementation of timely and appropriate mental health programmes (Bonell et al., 2014; Fink et al., 2015).

Current education policy in England is characterised by a focus on maximum attainment in a narrow range of academic subjects, whilst simultaneously failing to attend to pupils' broader well-being and personal development (Bonell et al., 2014; Fink et al., 2015). Schools face growing pressure from rigid academic performance metrics across early years, primary and secondary education, impacting on the whole school community (Fink et al., 2015; Shackleton et al., 2016). Moreover, emphasis on academic outcomes as a key indicator of school success leads to a narrow focus on the most able students, disengagement, stress, and lower levels of mental well-being (Bonell et al., 2014; Kruger, Wandle, & Struzziero, 2007). Academic pressure has been identified on self-report measures as a common stressor impacting on young people's mental well-being (The Children's Society, 2015; The Prince's Trust, 2015; YoungMinds, 2013).

Despite UK government rhetoric and the potential for schools to contribute to improved mental health outcomes for their pupils, practice is sporadic and the evidence of more widespread implementation is in primary rather than secondary schools (Cheney et al., 2014; Thorley, 2016). The paucity of attention to mental health promotion in the secondary sector has been attributed to a more rationalist approach, whereby key decision-makers are more difficult to convince regarding the benefits of adopting well-being strategies. Greater attitudinal challenges are also often accompanied by logistical barriers to implementation, less common in primary education settings (Lendrum, Humphrey, & Wigelsworth, 2013).

As the arguments presented thus far suggest, there is a sound rationale for implementing early interventions in schools. Nevertheless, decision-makers need compelling evidence to convince them to implement a socio-emotional programme and identifying an impact on school performance indicators may add to the value of an intervention. Therefore, the current research contributes an ecologically valid evaluation of Pyramid in secondary

schools, examining both socio-emotional and school performance outcomes. Evaluation findings on these dual domains can be used to provide decision-makers with the evidence they need to make informed implementation choices.

1.6. School-based socio-emotional interventions: a review of the literature

This section examines the international literature on school-based interventions; evidence from studies of socio-emotional programmes that consider impact on school performance is given specific attention due to its relevance to the current thesis.

Whilst a settings-based approach, supporting CYP's mental well-being in schools, is a relatively recent phenomenon in the UK, in the USA and Australia schools are a common access point for mental health services (Bayer et al., 2009; Walker, 2010). A scoping study of reviews (Enns et al., 2016) identified 10 reviews of school-based interventions aimed at promoting mental well-being published between 2005 and 2014. Virtually all elementary (primary) and secondary schools in the USA have service provision (Foster et al., 2005) and research suggests that access on school sites reduces disparities in seeking support among subpopulations e.g. racial/ethnic minority groups (Cummings, Ponce, & Mays, 2010).

Interventions are delivered universally (to entire school populations) or to target groups (identified as 'at risk', or already showing symptoms of a disorder). The relative efficacy of universal versus targeted interventions has been extensively debated in the literature (e.g. Domitrovich et al., 2010; Skuse, Bruce, Dowdney, & Mrazek, 2011). The wide appeal of universal delivery is attributed to several characteristics; no screening procedures are involved (implementation is easier and potentially more cost-effective); highly trained mental health professionals are not typically required; programmes potentially benefit whole school populations (including pupils not pre-identified as in need), and negate the

potential stigma associated with pupils being singled out for attention (Greenberg, 2010; Walker, 2010).

However, Horowitz and Garber (2006) argue that universal programmes tend to yield smaller effect sizes compared to targeted ones. Moreover, some programmes prove expensive to implement as large numbers of participants are included regardless of risk status (Skuse et al., 2011). Whilst delivery type may be an important methodological aspect determining an intervention's effectiveness, schools should not face an 'either/or' choice (Wells, Barlow, & Stewart-Brown, 2003): pupils will inevitably require exposure to either universal, targeted or indicated interventions depending on their needs. This approach aligns with Neil and Christensen's (2009) position, positing that a mixed model of service delivery is the most advantageous within the school environment. Tiered service provision is widely available in the USA, offering support for pupils with varying levels of need (Fazel et al., 2014). Moreover, to adequately support diverse school populations some researchers (e.g. Durlak, Domitrovich, Weissberg, & Gullotta, 2015) insist that interventions should be developmentally appropriate, and gender and culturally sensitive (aspects examined in the current research on Pyramid).

As described, a substantial body of work has demonstrated links between socio-emotional well-being and pupils' school performance (e.g. Elias & Morceri, 2012; Gutman & Vorhaus, 2012). Moreover, evidence for the impact of specific school-based socio-emotional interventions on school performance outcomes is growing: a summary of key findings from the literature is presented next.

1.6.1. Evidence of impact on pupils' school performance

The greatest investment in evaluation research is in the USA where the majority of school mental health interventions have been developed (Weare & Nind, 2011). However, despite the primary academic goals of their setting, most programmes are examined solely in terms of their impact on socio-emotional outcomes (Suldo et al., 2014).

Evaluations which have looked at other domains (including pupils' school performance) are also predominantly from the USA, with few examples of European studies appearing in the literature.

A review of school-based mental health interventions (conducted exclusively in either the USA or Canada) published between 1990 and June 2006 (Hoagwood et al., 2007), identified 64 methodologically rigorous studies. Only 24 (37.5%) studies examined educational outcomes and most of the measures comprised academic scores and/or attendance records. The majority of interventions were for kindergarten (pre-school) or elementary children, had a preventative focus and targeted prosocial, aggressive and anti-social behaviours. A statistically significant effect on educational and mental health outcomes (with a modest effect size) was found in 15 of the 24 studies (11 of the interventions demonstrating dual effects included a component targeting parents and teachers). Only one study used academic engagement as a performance indicator and a handful examined other variables e.g. school bonding, attitudes to school, or parents' school involvement; constructs which have been linked to academic success (Wilson, 2004). Fewer studies (eight) involved middle or high school students (secondary-aged pupils), or tackled internalising problems (seven). The authors concluded that there was a paucity of empirically validated studies targeting both academic and mental health outcomes and, as a consequence, the impact of school-based interventions on educationally relevant behaviours was poorly understood.

Vidair et al. (2014) expanded the Hoagwood et al. (2007) review with an analysis of studies published between July 2006 and 2012, identifying a further 53 evaluations: 23 included both academic (mainly test scores and teacher reports) and mental health outcomes, of which 70% (16) showed significant effects in the dual domains. Vidair et al. reported an increase in the number of studies since the previous review (Hoagwood et al.), with a shift towards the inclusion of academic outcomes. The majority of interventions that demonstrated a significant impact were universal, targeted at elementary-aged children and incorporated into the wider school curriculum. The most common focus was on the prevention or reduction of specific problem behaviours, and then on promoting social and emotional development.

Despite an increase in evaluations since 2006, the previous findings drawn by Hoagwood et al. (2007) appeared consistent. Vidair et al. (2014) concluded that significant, positive effects on mental health and academic outcomes were evidenced but insisted schools were more likely to be responsive to mental health programmes if a focus on academic skills was embedded. Also, pertinent to the current research, the authors acknowledged the need for reviews to consider the international evidence regarding the impact of school-based interventions on mental health and educational (e.g. pupils' school performance) outcomes.

The first large scale investigation of the impact of universal socio-emotional interventions on multiple domains (social and emotional skills, attitudes to self and others, prosocial behaviour, behavioural issues, emotional distress, and academic performance) was conducted by Durlak, Weissberg, Dymnicki, Taylor and Schellinger (2011). This meta-analytic review included 213 studies (conducted between 1955 and 2007: 75% were from 1987 onwards) which involved participants aged 5- to 18-years (N=270,034): 56% were from elementary schools, 31% middle schools, and 13% high schools. Findings

demonstrated that compared to controls, intervention participants showed greater improvements on all outcome measures, with the largest effect size demonstrated for socio-emotional skills (mean ES = 0.69). Only a subset of the reviewed studies (35) included information on academic performance but those that did contained large sample sizes, yielding a total of 135,396 participants. Results demonstrated a significant improvement in academic performance measured by standardised tests on reading and Mathematics skills (ES = 0.27) and school grades (ES = 0.33). These findings reflected on average an 11-percentile gain in pupil achievement. A small number of studies (eight) looked at long-term academic outcomes: these showed that positive effects were sustained an average of 150 weeks post-test (ES = 0.32). Durlak et al. concluded that the review findings supported the growing body of evidence associating socio-emotional development with improved academic performance and school success, evidence which should be used to guide future educational policy and practice.

Despite the sparse data from high (secondary) schools, research suggests socio-emotional interventions are successful at all educational levels (Durlak et al., 2011). In a meta-analysis of 75 universal programmes (Sklad, Diekstra, Ritter, Ben, & Gravesteijn, 2012) 62.7% comprised secondary school evaluations. The average age of participants was 10.5 years but age was only reported in five of the studies. Studies were published between 1995 and 2008 and 21.3 % had been conducted in countries outside the USA. Results identified a large post-test (at six-month or less) effect on socio-emotional skills. Moderate effects were demonstrated for positive self-image and prosocial behaviour. Academic outcomes (test performance or grade score) also yielded a moderate effect size. Furthermore, moderator analysis for the main outcome (socio-emotional skills) revealed that school level (primary or secondary) had a non-significant impact on programme success. The authors reported a wide variation in the effectiveness of interventions and overall immediate effects were stronger than long-term outcomes

(follow-up data were available for 43 studies). However, the largest beneficial follow-up effect (measured at least seven-months post-test) was for academic achievement ($d = .26$).

The inclusion of 16 studies from countries other than the USA (including 11 from Europe) enabled the Skald et al. (2012) meta-analysis to be the first to conduct comparative analyses of socio-emotional programmes delivered in USA and non-USA schools. Overall effect sizes on socio-emotional skills were similar ($d = 0.75$; $d = 0.51$ respectively), suggesting the benefits of school-based socio-emotional programmes were consistent across national and cultural contexts. However, the only outcome measure from which a comparison was statistically possible was socio-emotional skills; no conclusions could be drawn regarding other outcomes, including academic progress. Therefore, in terms of relative impact on non-targeted domains (e.g. aspects of pupils' school performance) international comparisons could not be drawn.

A narrative review of school mental health programmes (Weare & Nind, 2011) aimed to identify evidenced-based principles, approaches and interventions relevant in a European educational context. From the 52 meta-analytic and systematic reviews evaluated, 28 European programmes (13 delivered in the UK) were found. Overall, despite small-to-moderate effect sizes, the authors concluded that interventions had a wide range of 'real-world' effects on socio-emotional and educational outcomes. Characteristics of the most effective interventions included a focus on positive mental health, a balance of universal and targeted approaches, and links with academic learning. Five studies examined the impact of interventions on attitudes to school and academic achievement (e.g. school commitment and attachment, test scores, school grades and attendance). However, all studies were from the USA (and included the Durlak et al. (2011) meta-analysis), restricting the transferability of findings to other geographical settings with different

educational systems. Only the primary outcome measure (socio-emotional skills) was comparable between USA and non-USA contexts (as in Sklad et al., 2012), with USA and non-USA studies, again, demonstrating similar effect sizes.

Developed in the USA, *Success for Kids* (Maestas & Gaillot, 2010), a targeted socio-emotional intervention comprising structured games to build resilience and social competencies, was implemented in UK secondary schools. Findings from a randomised control trial (RCT) conducted in the USA on a large sample of 6- to 14-year-olds (N=737; across 17 programmes) demonstrated significant improvements on teacher reported socio-emotional outcomes (Behavior Assessment System for Children, Second Edition (BASC-2): Reynolds & Kamphaus, 2004), with medium-to-large effects (ES = 0.55 - 0.72). Findings also revealed a post-test reduction in recorded incidents of school problems amongst attendees (ES = 0.32 - 0.48), an improvement in self-reported study skills, and a concurrent decrease in attention and learning problems.

Whilst the evidence from international studies indicates that socio-emotional interventions (including programmes adopted by UK schools) can impact on aspects of pupils' school performance, the conclusions that can be drawn are limited. Findings relate to CYP across a wide age range and further evidence is required to demonstrate the impact at specific developmental stages. Moreover, the impact of socio-emotional interventions on the school performance of pupils enrolled in the UK education system warrants exclusive attention; therefore this is the focus of the next section.

1.7. The impact of school-based socio-emotional interventions on pupils' school performance: a scoping review of UK evidence

1.7.1 Rationale for a scoping review of UK evidence

The international literature on school-based socio-emotional intervention evaluations is extensive. However, the limited subset of studies examining secondary impact on pupils' school performance has predominantly used academic measures e.g. exam results, test scores or subject levels (Durlak et al., 2011, Hoagwood et al., 2007; Vidair et al., 2014), and focused on younger children (in pre-school or primary education), with the majority of interventions directed at externalising rather than internalising issues (Hoagwood et al., 2007; Vidair et al., 2014).

It is broadly acknowledged that research from other cultural contexts provides valuable insights into effective practices and has potential to be considered in a local educational environment. However, due to international disparities in educational contexts (e.g. demographic, policy, and service variants) there are concerns about transferring findings from international studies to the UK (Blank et al., 2009; Cheney et al., 2014). It is, therefore, pertinent in the context of the current research to consider primary evaluation studies conducted in the UK which concern the age group of interest (early adolescence); this is the focus of the present scoping review.

1.7.2. Systematic review findings: socio-emotional interventions in UK schools

Three systematic reviews of UK socio-emotional school interventions were identified as part of the initial scoping review process; two (Cheney et al., 2014; Clarke et al., 2015) included studies of both primary and secondary school interventions. The third review, commissioned by NICE (Blank et al., 2009), focused exclusively on universal socio-emotional interventions delivered in secondary schools and reviewed 40 studies. The

majority (30) reported programmes aimed at externalising behaviours and the remaining 10 focused on socio-emotional skills development. Only three papers originated from the UK (all were programmes aimed at bullying or disruptive behaviour). Blank et al. concluded that there was a lack of good quality effectiveness studies from the UK and that variations in populations, school-based culture, policy, and context, limited the transferability of any findings from USA studies to the UK.

The NICE recommendations (NICE, 2009) which followed the Blank et al. (2009) review stated that the guidance does not consider: ‘the effectiveness of interventions in relation to educational attainment’ (NICE, 2009, p.16), and the lack of UK evidence in this respect was identified as a gap. Nonetheless, despite the absence of data pertaining to academic outcomes the guidance stipulated: *[Social and emotional well-being]* ‘can also help them *[young people]* to learn to achieve academically, thus affecting their long-term social and economic well-being’ (NICE, 2009, p.5). In response, practitioners called for: ‘a more explicit link between socio-emotional well-being and educational attainment - and its role in preparing young people for adult life’ (NICE, 2009, p42). As reported, the demand for explicit evidence demonstrating the relationship between socio-emotional well-being and pupils’ school performance (in particular academic progress) has been subsequently echoed (DH, 2013; DH, 2015), highlighting a persistent gap in the extant evidence.

A systematic review of targeted, group-based interventions in UK schools (Cheney et al., 2014) reported no school performance outcomes measured in the studies reviewed. Of the 16 studies of eight different interventions (published between 1990 and 2010), only two were conducted in secondary schools: *Oasis* (Cooke, Yeomans, & Parkes, 2008), a Nurture Group (NG) variant, and *FRIENDS for life* (Liddle & Macmillan, 2010), an anxiety reduction programme based on cognitive behaviour therapy (CBT). Improvements on socio-emotional outcomes were reported in both studies. Although the focus of the review

was on socio-emotional outcomes, Cheney et al. noted that NG studies with primary school pupils (e.g. Cooper & Whitebread, 2007; Seth-Smith, Netali, Pratt, Fonagy, & Jaffey, 2010) had reported progress in other areas (including cognitive development) following initial improvements in socio-emotional skills. As only published papers were reviewed, Cheney et al. acknowledged the potential exclusion of relevant studies, a limitation which does not extend to the current scoping review.

The impact of universal and small group socio-emotional interventions in the UK was presented in a narrative synthesis of the published and 'grey' literature (2004-2014) by Clarke et al. (2015). Of the 39 programmes delivered in school settings, 24 had a focus on competency development and 15 were aimed at reducing problem behaviours. Of the subset of competency development interventions, five were aimed specifically at secondary school pupils and four had primary and secondary school variants (the *FRIENDS for life* programme was included in the review but only primary school studies were documented).

Again, the primary focus of the review (Clarke et al., 2015) was to identify effective socio-emotional interventions, however, broader outcome measures including anti-social behaviour and school performance indicators were reported (e.g. attendance and academic attainment). Three of the four programmes aimed at primary- and secondary-aged pupils examined academic outcomes (test scores and study skills) but none of the evaluations were conducted in the UK. Only two of the five programmes for secondary-aged pupils which also included measures of school performance (GCSE performance and attendance) were developed and evaluated in the UK.

Findings from systematic reviews of interventions delivered in the UK (in line with international research, predominantly from the USA) indicate that evaluations of school-based programmes focus extensively on examining effectiveness on socio-emotional outcomes, largely neglecting to consider the impact on other domains such as school performance.

1.7.3. Objectives of the current scoping review

Initial perusal of the systematic review literature (Cheney et al., 2014; Clarke et al., 2015) identified a paucity of socio-emotional interventions targeted at secondary-aged pupils in UK schools and examining school performance. To investigate these phenomena, a scoping review of the literature was considered appropriate, mapping the extant evidence from the UK to reveal gaps and uncertainties (Armstrong, Hall, Doyle, & Waters, 2011). The specific objectives of the current scoping review were to:

Objective One: identify gaps in the existing evaluation literature with regard to school-based socio-emotional interventions targeted at secondary-aged pupils which include a measure of school performance.

Objective Two: summarise research findings and identify components of successful school-based socio-emotional interventions for secondary-aged pupils which impact on socio-emotional and school performance outcomes.

1.7.4. Rationale for implementing a scoping review method

A scoping review was considered an appropriate technique to map the relevant literature. This method permits the inclusion of a broader range of study designs compared to the strict criteria of a systematic review (Maxwell, Aggleton, Warwick, & Yankah, 2008), thus reducing the risk of relevant studies being overlooked (e.g. Cheney et al., 2014). School-

based interventions do not lend themselves easily to the 'gold standard' of evaluation research (RCTs) and the 'grey' literature offers practitioners an insight into promising programmes whilst reducing concerns over publication bias (Maxwell, et al., 2008). A 'snapshot' of the existing evidence was sought, contributing to the rationale for the current research, and helping to fully formulate comprehensive and relevant research questions. Whilst a scoping review does not demand the quality assessment or extensive data synthesis of a systematic review, the method must uphold parity of standards and transparency (Arksey & O'Malley, 2005; Armstrong et al., 2011). Bearing this in mind, the researcher adopted the scoping review framework developed by Arksey and O'Malley which is delineated in five key stages: identifying the research question; identifying relevant studies; study selection; charting the data; collating, summarising, and reporting the results.

1.7.5. Identifying the scoping review question

The process of developing the scoping review question involves deciding which aspects of the research topic are particularly important (Arksey & O'Malley, 2005). In the current scoping review the aim of the intervention (i.e. to promote socio-emotional well-being), the outcome measures (to include school performance), and the age of the study population were of specific relevance.

Scoping review question: What is known from the existing UK evaluation literature about the impact of school-based socio-emotional interventions on the school performance of secondary-aged pupils?

1.7.6. Identifying relevant studies

Five electronic academic databases (i.e. PsycINFO; Educational Resources Information Center (ERIC); the British Education Index (BEI); Electronic Thesis On-line (EThOS), and

OpenGrey), and relevant websites (e.g. The Department for Education (<http://www.education.gov.uk>); the Institute of Education (<http://www.ioe.ac.uk>) were searched for published and unpublished studies. Reference lists of all retrieved articles and reports were hand searched to identify any additional studies. The search terms used were (*denotes truncation): for *Intervention*, intervention*, OR program*; for *Type of Intervention*, mental health, OR soci*, OR emotion*, OR anxi*, OR depress*, NOT conduct; for *Population*, pupil, OR student, OR child, OR adolescen*, OR teen*, OR young pe*; for *Setting*, secondary school, OR middle school, AND United Kingdom, OR Britain, OR England, OR Scotland, OR Wales, OR Northern Ireland. Key search terms were entered in various combinations to minimise the number of omitted studies.

1.7.7. Study selection and inclusion/exclusion criteria

The population of interest was CYP from early-to-mid adolescence (aged 11- to 16-years) as this includes the age range of pupils participating in the current evaluation of the Pyramid programme in secondary schools. Only primary evaluation studies of socio-emotional interventions to promote well-being (not targeting problem behaviours), implemented and evaluated in a UK school setting were included, as this describes the focus of the Pyramid programme. Studies had to include at least one outcome measure of pupils' school performance (e.g. academic attainment, attendance, motivation, engagement). The inclusion criteria also specified papers should be written in English and published between 2006 and May 2016.

The start of the selected period for papers immediately preceded the widespread implementation of the Social and Emotional Aspects of Learning (SEAL) programme in UK secondary schools (2007/8) and reflected the increasing influence of two key strategy documents related to working with CYP in the UK: *Every Child Matters* (Department for Children, Schools and Families, 2003), and the *National Service Framework for Children,*

Young People and Maternity Services (DH, 2004). Both of these papers specified the importance of strategies and interventions to promote CYP’s mental health and psychological well-being.

1.7.8. Results: charting the data

Searches yielded 1,205 articles. After removal of duplicates, non-relevant interventions or interventions not meeting the inclusion criteria, a total of six studies (including one from Ireland) were retrieved (*Figure 1.0.*). The characteristics and outcomes of the six reviewed studies are presented in *Table 1.0.* and a descriptive summary of the results follows.

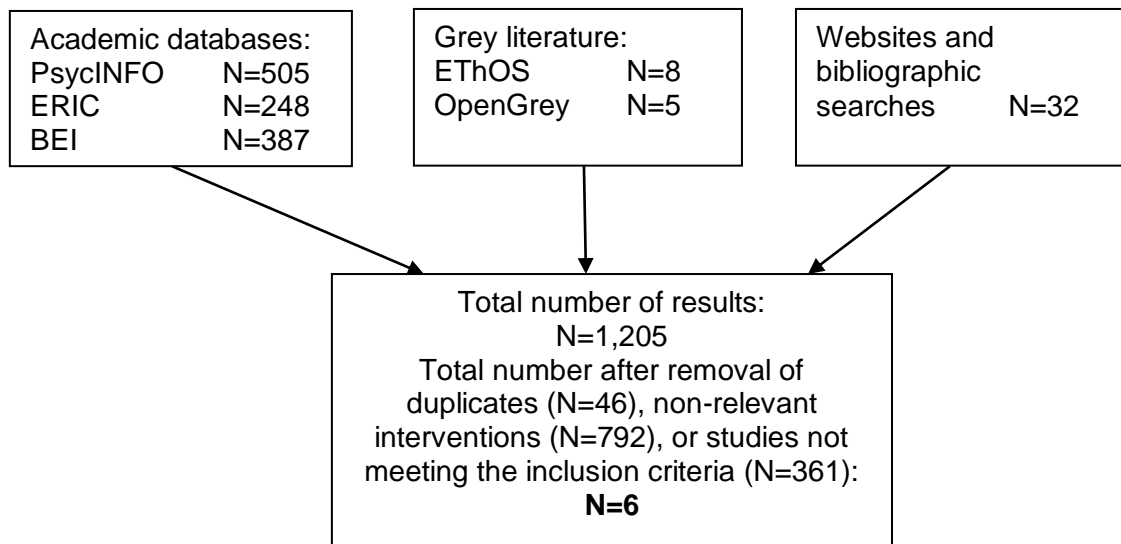


Figure 1.0: Studies retrieved for a scoping review of UK evidence

Table 1.0: Characteristics and outcomes of selected studies

Author(s)/ Year of publication/ Study location	Study design and participants	Intervention name and main characteristics	Socio-emotional ¹ and school performance ² measure/s	Main findings/ Limitations
Keogh, Bond, & Flaxman (2006)* United Kingdom	Randomised controlled trial Year 11 pupils (15- to 16-years) (N=80) Intervention group (N=18 males, 22 females); non- intervention (education as usual) control group (N=20 males, 20 females) Original sample (N=160) matched on intelligence and gender	Stress Management Intervention (SMI) Universal CBT programme: 10 x 60 minute duration Maximum of 10 pupils per group Didactic and experiential learning exercises delivered by same therapist; includes homework exercises	General Health Questionnaire (Goldberg & Hillier, 1979) ¹ Need for Achievement Scale (Paspalanov, 1984) ¹ Revised Test Anxiety Scale (Benson & Bandalos, 1992) ¹ Dysfunctional Attitude Survey (Weissman, 1979) ^{1, 2} Cognitive Abilities Test (Strand, 2002) ² GCSE examination grades ²	Improved mental health and motivation of SMI group vs controls Significantly better performance in GCSEs (taken 8- to 10-weeks post-intervention) by, on average, one letter grade Original SMI group (N=80) reduced to 40 due to 50% attrition Those included in final analysis were higher in intelligence: effectiveness may be limited to selected students who are intelligent and sustain motivation
Challen, Noden West, & Machin (2009; 2010; 2011)* United Kingdom	Mixed methods Quantitative phase: quasi-experimental Year 7 pupils (11- to 12- years) (N=1,952) from 22 schools	UK Resilience Programme (UKRP) Universal psychological well-being programme: focused on building resilience and promoting positive thinking	Children's Depression Inventory (Kovacs, 2003) ¹ Revised Children's Manifest Anxiety Scale (Reynolds & Richmond, 2008) ¹	Significant short-term improvement (within current academic year) in depression scores and attendance; reduced at one-year follow-up but not to pre-intervention levels Facilitators' feedback on training was positive but materials too 'didactic' Pupils' feedback generally positive and reports of using new skills outside the programme

Author(s)/ Year of publication/ Study location	Study design and participants	Intervention name and main characteristics	Socio-emotional ¹ and school performance ² measure/s	Main findings/ Limitations
	<p>Six schools with (alternative treatment) within-year and year-ahead controls; nine schools within-year controls</p> <p>Qualitative phase: interviews with pupils, facilitators and school managers</p>	<p>Based on the USA developed Penn Resiliency program (Gillham, Reivich, & Jaycox, 2008)</p> <p>18 x 60 minute duration: weekly (half year) or two-weekly (full academic year)</p> <p>Workshops: maximum of 15 pupils per group preferred; delivered by trained, self-selected or referred school staff</p> <p>Materials partially adapted for UK schools</p>	<p>Brief Multi-dimensional Student's Life Satisfaction Scale (Huebner, 1997)¹</p> <p>The Strengths & Difficulties Questionnaire (SDQ) informant-rated version (Goodman, 1997)¹</p> <p>The SDQ self-report (Goodman et al., 1998)¹</p> <p>Pupil satisfaction questionnaire (2009 study)^{1, 2}</p> <p>Attendance² (2010)</p> <p>Attendance and English, Mathematics and Science GCSE scores² (2011)</p>	<p>Control group classes 50% bigger; not possible to disentangle effect of smaller classes</p> <p>Facilitators reported senior management support essential for effective delivery</p> <p>Perceived impact on academic performance reported by 49% of respondents</p> <p>Some impact on depression, attendance and English and Mathematics scores evident at one-year follow-up but not at two-year</p> <p>Impact varied depending on delivery (when/who/ group size) and by pupil characteristics</p> <p>Lack of intervention fidelity across schools</p> <p>Academic data only available for 14 of 22 schools</p>
<p>Holland (2012)** Unpublished PhD thesis, University of Southampton</p> <p>United Kingdom</p>	<p>Pre-/post-test design</p> <p>Year 7 pupils from one school (N=120)</p> <p>Intervention group (N=43 males, 29 females); three randomly selected classes (of five); non-intervention controls (N=0 males, 18 females) from other two classes</p>	<p>Stop-Breathe-Be Mindfulness in Schools Project (MiSP)</p> <p>Universal mindfulness programme: to increase mental health and well-being</p>	<p>Child & Adolescent Mindfulness Measure (Greco, Baer, & Smith, 2011)¹</p>	<p>Significant increase in resilience and decrease in inattentiveness in intervention group vs controls</p>

Author(s)/ Year of publication/ Study location	Study design and participants	Intervention name and main characteristics	Socio-emotional ¹ and school performance ² measure/s	Main findings/ Limitations
		8 x 50 minute duration Sessions led by study author with a school staff member present Home practice (2- to 15- minutes) encouraged as often as possible	Ego-Resiliency Scale (Block & Kremen, 1996) ¹ The Adolescent Stress Questionnaire (ASQ: Byrne, Davenport, & Mazanov, 2007) ¹ Teacher Report Form (Edelbrock & Achenbach, 1984) ² National Curriculum data (English and Mathematics levels) ²	Improved academic performance in English and Mathematics demonstrated by both groups at short-term follow-up Post-intervention assessment potentially too soon to detect impact in academic domain Possible sample bias of highly motivated pupils who volunteered to participate No long-term follow-up; post-test only
Scott Loinaz (2014) Unpublished Nurture Group Network report United Kingdom	Single group pre-/post- test design Year 7 and Year 8 pupils (11- to 13-years) (N=20)	Nurture Group (NG) Targeted, small group intervention: average three periods a day, five days a week, one-to-two terms (70% of timetable in Year 7); decreasing to four (on average) periods a week Year 8 (10% of timetable); six terms total Key subjects taught using NG principles (e.g. circle time, games) to develop social skills Delivered by school staff	Boxall Profiles (BP) (Bennathan & Boxall, 1998) ¹ The SDQ informant-rated version (Goodman, 1997) ¹ GCSE examination grades ² Attendance ²	Statistically significant improvement in developmental strands of BP between 1 st term of Year 7 and last term of Year 8: majority of participants shifted from high-risk to low-risk SDQ scores Pupils who achieved at least five GCSEs with scores from A*- C shifted from abnormal to normal category on BP: pupils (two) still scoring abnormally in developmental strand of BP by 3 rd term of Year 8 had sample's poorest GCSE results Pupils 'low-risk' at end of study showed improved attendance No comparator group Small sample size Male:female students' ratio; 17:3

Author(s)/ Year of publication/ Study location	Study design and participants	Intervention name and main characteristics	Socio-emotional ¹ and school performance ² measure/s	Main findings/ Limitations
Rodgers & Dunsmuir (2015) Ireland	Randomised controlled trial 12- to 13-years (N=62) Intervention group (N=10 males, 22 females); wait-list control (N=9 males, 21 females)	FRIENDS for life programme Universal CBT anxiety reduction programme: Developed in Australia 10 x 60 minute duration Manualised programme delivered by researcher, and homework tasks Treatment integrity scales completed	Spence Children's Anxiety Scale (Spence, 1997) ¹ Spence Children's Anxiety Scale for parents (Spence, 1999) ¹ Teacher-Child Rating Scale (T-CRS 2.1) self- report (Perkins & Hightower, 2002) ² Teacher-Child rating Scale (T-CRS 2.1) teacher report (Perkins & Hightower, 2002) ²	Overall anxiety scores reduced post-test and continued to decrease at four-month follow-up: parents' ratings supported findings from self- report measure No significant effect on overall school adjustment but negative relationship between anxiety and school adjustment highlighted Workbook activities could be tailored to address specific anxieties associated with transition Possible sample bias (all low SES) No longer-term follow-up > four months
De Montjoie Rudolf (2015) Unpublished PhD thesis, University of Birmingham United Kingdom	Mixed methods Quantitative phase: single group pre-/post- test design Year 7s (N=9) Qualitative phase: focus groups and semi- structured interviews with attendees and school staff Four case studies included interviews with parents	Nurture Group (NG) project: targeted, small group intervention Pupils attended NG for English, Mathematics & Humanities lessons and tutor time for 1st two terms of Year 7 (mainstream lessons for other subjects) Key subjects taught using NG principles to develop social skills; delivered by school staff	Boxall Profiles (Bennathan & Boxall, 1998) ¹ 'My New School' ratings, questionnaire designed by study researcher ¹ 'Myself as a learner scale (Burden, 1998) ² Access Reading Test (McCarty & Crumpler, 2006) ² The Vernon Graded Arithmetic-Mathematics Test (Vernon, 1998) ²	Boxall profile scores and qualitative feedback suggested positive outcomes for majority of participants: NG was beneficial and worthwhile Students reported 'enjoying' NG lessons compared to non-NG lessons Greater than expected progress in reading within the academic year (12-months progress over 10-months); Mathematics scores also demonstrated improvement Small sample size Non-validated questionnaire used for school ratings No comparator group

**Reported in Clarke et al. (2015). **Identified in Clarke et al. (2015) but school performance outcomes not reported.*

1.7.9. Collating, summarising and reporting the results

The scoping review included evaluations with a range of study designs: two were randomised controlled trials (Keogh et al., 2006; Rodgers & Dunsmuir, 2015), one quasi-experimental (Holland, 2012), and one a single group pre-test/post-test design (Scott Loinaz, 2014). Two studies were mixed methods (Challen et al., 2009; De Montjoie Rudolf, 2015) and the researchers implemented a quasi-experimental and single group pre-test/post-test design respectively for the quantitative phase of their research. The search strategy yielded three studies from the 'grey' literature (De Montjoie Rudolf, 2015; Holland, 2012; Scott Loinaz, 2014).

The majority of studies, excluding De Montjoie Rudolf (2015) and Scott Loinaz (2014) included a comparator in their design: two used a non-intervention control group (Holland, 2012; Keogh et al., 2006), one a wait-list control (Rodgers & Dunsmuir, 2015) and one an alternative treatment condition (Challen et al., 2009). However, in the Challen et al. study there was considerable variation in the size of the groups and the alternative treatment regime was not consistent across all comparator groups (Personal, Social and Health Education (PSHE) curriculum or core subject lessons as usual). Wait-list controls were used by Rodgers and Dunsmuir (2015), albeit with a much smaller study sample (N=62) and all participants occupied the same (low) socio-economic status (SES), limiting the generalisability of their findings.

Four of the programmes were delivered universally (Challen et al., 2009; Holland, 2012; Keogh et al., 2006; Rodgers & Dunsmuir, 2015). The two targeted interventions were the same programme type (Nurture group: NG) (De Montjoie Rudolf, 2015; Scott Loinaz, 2014) and embedded within the provision of the normal teaching curriculum rather than delivered as a stand-alone intervention. Although the *FRIENDS for life* programme is

typically delivered as a whole school intervention (e.g. Rodgers & Dunsmuir, 2015), it can be implemented through targeted and indicated approaches as well.

The majority of interventions (with the exception of the *NG project*) were relatively short-term (ranging from 8- to 18-weeks duration), were delivered as weekly sessions and contact time was approximately one hour (during regular school hours). In their study of the *UKRP*, Challen et al. (2009) identified the timing of the programme as a potential moderator, as this varied across the school day for intervention groups. A small group format (approximately 10-15 attendees) was the recommended model of delivery for all programmes apart from the *Stop-Breathe-Be* project (*MiSP*: Holland, 2012). Adhering to limited group sizes created a methodological problem for Challen et al. as the (alternative treatment) control groups were considerably bigger (normal class size; approximately 30 pupils). Therefore, the specific effect of having a smaller group design could not be discerned in the evaluation findings.

A range of agents was involved in delivering programmes, including teachers, other school staff, mental health professionals, and researchers. The type of facilitator was identified as another potential moderator (Challen et al., 2009). A wide body of research suggests interventions can be delivered successfully by a range of agents (including paraprofessionals), however, the duration and quality of training is associated with higher programme fidelity in school settings (Mendenhall, Iachini, & Anderson-Butcher, 2013). Variable detail was provided on the level of training facilitators received and for some interventions this was extensive (e.g. 8- to 10-days for the *UKRP*). All the studies described using a manualised programme or bespoke training resources (supporting intervention fidelity). Only one study (*FRIENDS for life*: Rodgers & Dunsmuir, 2015) reported implementing a measure of treatment integrity (a standardised checklist of

compliance with the programme manual). However, this assessment was completed by the second researcher and was potentially subject to researcher bias.

The *FRIENDS for life* programme was developed in Australia (Barrett, Lowry-Webster, & Turner, 2000) and the *UKRP* was adapted from a USA intervention (the *Penn Resilience Program*: Gillham et al., 2008). Challen et al. (2009) reported that adaptations had been made to the *UKRP* resources to make them culturally and linguistically more accessible to UK pupils. No modifications to the *FRIENDS for life* resources were identified by the researchers but Rodgers and Dunmuir (2015) described how workbook activities could be tailored to suit the specific needs of the group (e.g. transition anxieties). The adaptability of specific programmes to meet the varying needs of recipients was not referred to in the other reviewed studies.

The majority of socio-emotional well-being measures used in the studies were well-validated (e.g. the Children's Depression Inventory, Kovacs, 2003; the Spence Children's Anxiety Scale, Spence, 1997; the Strengths & Difficulties Questionnaire (SDQ), Goodman, 1997; Goodman et al., 1998). A non-standardised tool (developed by the researcher) was implemented in one of the *NG* evaluations (De Montjoie Rudolf, 2015), however, this was utilised in conjunction with a validated measure (Boxall Profiles: Bennathan & Boxall, 1998). Both self-report and objective measures were used with the exception of Scott Loinaz (2014) who used only objective measures (teacher ratings). Cross-informant data were collected in five of the six studies: child, teacher and parents in the Rodgers and Dunsmuir (2015) study, and child and teacher in a further five studies. A synthesis of the findings identified some improvement in either socio-emotional well-being alone or with school performance in addition. There were no iatrogenic effects reported for either outcome domain.

In terms of school performance measures, the majority (in line with findings from the USA e.g. Sklad et al., 2012; Vidair et al., 2014) were indicators of academic outcomes: exam performance; English, Mathematics and Science test scores or subject levels. Keogh et al. (2006) found *SMI* intervention pupils performed significantly better in GCSE examinations by, on average, one letter grade, compared to non-intervention controls (the grade point average for each participant was calculated to identify the magnitude of the difference). Scott Loinaz (2014) reported that better overall GCSE results were associated with higher socio-emotional skills development amongst pupils attending a *NG* programme in Year 7 and 8. Significantly improved English and Mathematics scores compared to comparison pupils were demonstrated for *UKRP* attendees one-year post-test (Challen et al., 2010). Attendance records (Challen et al., 2010; Scott Loinaz, 2014) and teacher-rated reports on behaviour (Holland, 2012; Rodgers & Dunsmuir, 2015) also showed improvements. Outcome measures which encompassed a broader, more 'holistic' definition of school performance (Zins et al., 2004) included school adjustment, motivation, attentiveness, and self-reports of using skills in the wider school context.

Although Holland (2012) found a significant decrease in levels of inattentiveness amongst the pupils who received the *MiSP* intervention, this did not correlate with increased academic performance compared to a comparison group. However, post-test academic data were only collected at short-term follow-up (four-month post-test), potentially too soon for any intervention effects to be discernible on standardised test scores. Conversely, as previously reported, improved motivation was associated with higher GCSE grades (taken only 8- to 10-weeks after completing the *SMI* programme) for intervention pupils compared to controls (Keogh et al., 2006).

The *FRIENDS for life* programme review (Rodgers & Dunsmuir, 2015) demonstrated an overall reduction in anxiety; both immediately post-test and a sustained decline at four-

month follow-up, with a strong negative correlation between anxiety and school adjustment. However, no significant differences were found in school adjustment amongst their sample of 12- to 13-year-olds.

Tentative, preliminary evidence suggesting that greater school adjustment positively impacts on school performance (including academic progress) was provided by the De Montjoie Rudolf study (2015). The *NG* intervention consisted of students being taught key subjects in a small group setting using specific *NG* principles (including circle time and games to develop social skills). Students reported 'enjoying' these lessons and moreover, achieved greater than expected progress in reading (on standardised test scores) across the academic year. The nurturing, small group environment increased pupils' enjoyment of lessons which in turn was related to academic progress.

The second *NG* study included in the scoping review (Scott Loinaz, 2014) showed that those pupils who attended an *NG* programme in Year 7 and 8, with the most improved ratings on socio-emotional well-being measures (BP: Bennathan & Boxall, 1998; SDQ: Goodman, 1997), achieved better overall GCSE results than those who had improved the least. Moreover, Scott Loinaz identified that the greatest gains in socio-emotional well-being were made in the first two terms of the programme (autumn and spring of Year 7). Evidence of early progress replicated findings from primary school studies (e.g. Cooper & Whitebread, 2007; Seth-Smith et al., 2010) and also the findings of Cooke et al. (2008) from a secondary school *NG: Oasis* (see Cheney et al., 2014). Cooper & Whitebread, and Seth-Smith et al. reported that once gains had been made in socio-emotional skills, progress in other areas, including cognitive development, was observed. Scott Loinaz's findings give tentative support to the premise that improvement in socio-emotional well-being enhances subsequent cognitive development.

Although positive findings were reported from all the studies included in the scoping review on either one or both domains of interest (socio-emotional well-being and/or school performance), only short-term (four-month or less, post-test) outcomes were reported in four of the six evaluations. Longer-term benefits that were recorded identified increased Mathematics and English scores at one-year follow-up for the *UKRP* intervention pupils (Challen et al., 2010; 2011). School attendance also showed improvement compared to pre-intervention rates but gains were less than those recorded immediately post-test. Moreover, improvements on socio-emotional well-being and school performance measures were not sustained at two-year follow-up, suggesting the benefits associated with receiving the intervention were time limited.

1.7.10. Reviewing the objectives of the scoping review

The scoping exercise enabled a purposeful review of the literature and has helped to synthesise the evidence for the impact of socio-emotional interventions on the school performance of pupils in UK secondary education. The first objective was to identify if any gaps existed in the extant literature. Findings revealed a limited number of primary evaluations (six) of which only two included any longer-term assessment of impact. Nevertheless, whilst acknowledging the methodological limitations of the reviewed studies and consequently the conclusions that can be drawn, tentative evidence has been found to indicate that relatively short-term interventions can serve the dual purpose of improving pupils' socio-emotional well-being and enhancing their school performance. Findings contribute to the on-going discussion which requires a fuller understanding of the potential, and extent of, value-added benefits accrued through the implementation of widespread public health interventions in schools (DH, 2013; DH, 2015).

The second objective of the review was to identify components of successful programmes. A synthesis of common characteristics indicated that the majority of interventions were delivered in small group settings (approximately 12 students). Another

typical feature was that sessions were regular and structured and supported by standardised manuals and bespoke resources. However, the 'didactic' nature of the *UKRP* programme materials presented a potential obstacle according to delivery agents (Challen et al., 2009; 2010; 2011). This suggests that built-in flexibility to select or adapt materials to suit the characteristics of particular groups would be desirable for both facilitators and recipients. In line with this rationale, Rogers and Dunsmuir (2015) acknowledged the potential benefits of modifying standard resources from the *FRIENDS for life* programme to suit the specific needs of different groups, in their case transition pupils.

Both universal and targeted programmes were implemented by a range of individuals, including class teachers, other school staff, researchers, and mental health professionals. This suggests that well-trained facilitators can deliver effective programmes in school settings and, moreover, delivery models can be adapted to best suit the needs and local resources of specific school environments (Durlak & DuPre, 2008). According to Fazel et al. (2014), evaluations should assiduously assess implementation processes as well as how schools respond to and adapt interventions to accommodate the needs of different subpopulations. This includes distinguishing integrated from stand-alone approaches and identifying practical implementation issues. A key component identified as crucial to successful implementation was support from senior management (Challen 2009; 2010; 2011), highlighting the importance of school culture and ethos for implementing effective interventions successfully within an educational environment (Banerjee, Weare, & Farr, 2014; Humphrey, Lendrum, & Wigelsworth, 2010).

1.7.11. Implications of the findings from the scoping review

Whilst findings from the scoping review are encouraging, more primary evaluations are needed which include long-term follow-up assessments to identify any sustainable effects

of specific interventions and potentially allow sufficient duration for secondary effects to be detectable on objective and subjective measures of school performance. Studies in the scoping review have predominantly utilised academic indicators as measures of school performance. However, employing a broader definition of 'school success' is desirable (Zins, Elias, & Greenberg, 2007). School performance is linked to school attitudes (e.g. motivation, responsibility and attachment), school behaviour (e.g. engagement, attendance and study habits), and school achievement (e.g. grades, subject mastery and test performance). 'School success' is pluralistic, suggesting greater attention to a wider range of performance indicators is required in future evaluation studies, alongside measures which recognise the 'voice of the child' and extend beyond a limited focus on academic outcomes (Darbyshire, MacDougall, & Scheller, 2005).

Furthermore, whilst an understanding of intervention effectiveness is a fundamental first step in programme evaluation, a number of authors (e.g. Pawson & Tilley, 2004) have pointed out that an emphasis on this objective has led to possible mechanisms of improvement being largely neglected. Nevertheless, an understanding of how and why programmes work is crucial (e.g. Dixon-Woods, Bosk, Aveling, Goeschel, & Pronovost, 2011) and involves investigating the underlying theory which underpins specific programmes, and unpicking active components of change (Pawson & Tilley, 2004; Volpe & Suldo, 2014). Three of the reviewed studies (*SMI*; *UKRP*, and *FRIENDS for life*) are firmly couched within a cognitive behavioural approach; *MiSP* draws from contemplative mindfulness traditions, meditation and also cognitive therapy (Kuyken et al., 2013), whilst *NG* is underpinned by Attachment Theory (Bowlby, 1969). Challen et al. (2009; 2010; 2011) and De Montjoie Rudolf (2015) used a mixed methods design, involving a qualitative element more traditionally associated with addressing questions of process (Bryman, 2012). However, neither of these studies or indeed any of the mono-method studies addressed specific questions of how and why positive outcomes were achieved.

This has been identified as a gap in the research where future programme evaluators need to direct their attention.

1.8. Summary of the rationale, aims and objectives of the current research

A strategic framework for mental health that reduces risk and increases protective factors for CYP in the UK is imperative (DH, 2013; DH, 2015; HCHC, 2014). Such a framework, couched within a settings-based approach to health, places schools in a pivotal position to provide socio-emotional interventions. Conducting robust evaluations of existing programmes under ‘real world’ conditions is a prerequisite and establishing developmentally appropriate theoretical models to inform intervention development is crucial. Moreover, identifying components of successful socio-emotional interventions that demonstrate an impact on educationally relevant behaviours will enable researchers, policy makers and educators to gain a better understanding of the mechanisms that link socio-emotional well-being to pupils’ school performance (Durlak et al., 2011; Sklad et al., 2012; Vidair et al., 2014). Establishing such links may help secure the commitment and support from senior management essential to the successful delivery of school-based interventions (Challen et al., 2011).

A plethora of school-based socio-emotional interventions are currently available and Headteachers and staff are often overwhelmed by the choices; decision-makers may not always use the strength of the evidence as a criterion for selection (Cooper, 2011; Slavin, 2002). Schools require information about the relative benefits and cost-effectiveness of different programmes when deciding which intervention to implement. It is only through the rigorous evaluation of interventions that specific programmes can be examined and their effectiveness demonstrated in ‘real-world’ settings, providing schools with the evidence they need to make reliably informed decisions (Horowitz & Garber, 2006; Shute, 2012). Evidence hubs (e.g. EIF and Project Oracle) allow programmes for CYP to be

compared according to evaluation evidence: decision-makers and policy developers can consider the effectiveness of specific interventions against the rigorous standards set by the EIF (section 2.5.) and Project Oracle. Selection based on robust evidence helps ensure limited resources are targeted effectively.

Against this evolving background the rationale for the current research was developed. The first aim is to augment the extant evidence for Pyramid by examining the impact of the intervention on an older school population (secondary-aged pupils: 11- to 14-years). Furthermore, the premise that schools provide an ideal setting for socio-emotional interventions that contribute to a pupil's overall success indicates evaluation studies of specific programmes that also examine school performance outcomes of crucial importance. Whereas some early evaluations of Pyramid (predominantly from the 'grey' literature) considered the impact on non-targeted domains (section 2.4.3.), more recent studies (Cassidy et al., 2014; 2015; McKenna et al., 2014; Ohl et al., 2012; 2008) have concentrated exclusively on providing empirical evidence of effectiveness on the primary outcome of socio-emotional well-being. This typifies a dearth of studies in the intervention evaluation literature which investigate the dual domains of socio-emotional well-being and school performance: the second aim of the current research is to address this gap. Furthermore, investigating processes and mechanisms of specific interventions which underlie behaviour change in recipients has been exposed as under-scrutinised in evaluation research. The third and final aim is to extend the scope of the current research beyond identifying intervention effectiveness by providing an understanding of the active components of Pyramid.

To address these aims, the main objective of the research was to implement a mixed methods design within a pragmatic, critical realist framework (section 3.1.) to robustly evaluate the Pyramid intervention in secondary school. The objective of the quantitative

phase was to examine intervention effectiveness, short-term and longer-term with regard to socio-emotional and school performance outcomes. The objectives of the qualitative phase were to scrutinise the quantitative findings through triangulation of method and furthermore, to investigate the active components underlying behaviour change. Key consideration was given to how processes and mechanisms are linked to specific elements identified in the Pyramid club theory of change (Hughes, 2014) (section 2.1.).

1.8.1. The research questions and implications

The following research questions were developed to satisfy the aims and objectives of the research.

Research Question One (RQ1): Does the Pyramid intervention impact on the socio-emotional health of pupils in early secondary education?

Research Question Two (RQ2): Does the Pyramid intervention impact on early secondary-aged pupils' school performance?

Research Question Three (RQ3): What are the elements involved in the Pyramid intervention that bring about change in attendees?

There are theoretical and practical implications attached to addressing the research questions. Findings will augment the extant evidence for Pyramid and allow existing Pyramid theory to be developed in accordance with any new conclusions, informing the model's development: new evidence can assist decision-makers with informed implementation choices, supporting a settings-based approach to child and adolescent mental health. This, in turn, enhances applied practice in schools, bridging the research-to-practice gap to better promote pupil well-being and provide 'real world' outcomes.

The next chapter investigates the origins of Pyramid and the theoretical underpinnings which feed into the Pyramid club theory of change (Hughes, 2014) (section 2.1.). Evidence from the Pyramid primary school evaluation literature is reviewed and considered in relation to the current research.

Chapter Two

The Pyramid intervention

This chapter describes the origins and influences on the development of the Pyramid intervention. The theoretical underpinnings of the Pyramid model of change are explored and relevant theories discussed in relation to club structure and delivery. Previous evaluations of the intervention in primary school settings are critically appraised and a context for the current research which assesses the impact of the intervention on young people in early secondary education is provided.

2. Overview: background and development of the Pyramid model

The Pyramid intervention supports CYP's social and emotional well-being, and targets shy, quiet, withdrawn or anxious individuals who typically internalise their problems. The model is designed to intervene early in life and in the course of difficulties (FitzHerbert, 1985; Makins, 1997). Pyramid is typically delivered as an after-school club, run over a period of 10 weeks by trained club leaders. There is a high adult:child/young person ratio, with three or four leaders for up to ten club members. Clubs are offered to primary-aged children (usually between 7- 10-years-old), transition pupils (moving from primary to secondary school), and secondary-aged pupils (usually between 11- to 14-years-old) (Pyramid, 2011a). The intervention is adapted to suit the three main age groups: each one has a bespoke set of developmentally appropriate Pyramid activities collated in an activities pack. Examples of secondary club activities are shown in *Figure 2.2*.

Pyramid was originally developed during the 1970s by Kay FitzHerbert, a social worker supporting schools (FitzHerbert, 1985; Makins, 1997). FitzHerbert witnessed the frustrations of primary school teachers concerned by the early indications of failure displayed by shy, anxious and withdrawn pupils who were not identified as having special educational needs or behavioural issues yet showed signs of being unhappy in school. Priority was given to pupils with the most severe difficulties and FitzHerbert noted the lack of strategies or interventions available for these 'invisible' children. With funding from the

Social Science Research Council (SSRC), a project using an action research approach (Adelman, 1993; Lewin, 1946) was implemented in three urban primary schools in Hounslow, West London, to investigate the effect of an integrated, preventative intervention on these vulnerable children. It was anticipated that this type of early intervention could off-set the predicted negative trajectories and the associated poor outcomes for these pupils when they reached secondary school.

The first incarnation of Pyramid appeared in 1979 as a 10-week, therapeutic after-school programme for a small group of primary-aged children (8- to 9-years-old).

Teacher assessments of the children's progress after the 10-week programme identified gains in socio-emotional well-being: large improvements in social skills, confidence and self-esteem were reported (Makins, 1997). Children previously seen as, 'unhappy, difficult and poor at relationships' were described as, 'happy, chatty and beaming' (Makins, 1997, p2). Anecdotal evidence extolling the benefits of attending a Pyramid club was also provided from parents and the children themselves.

FitzHerbert (1985) conducted a follow-up study to investigate the long-term impact on the children of attending the preventative intervention in primary school (*Table 2.2.*) and found the majority of pupils (79%) were doing well academically and socially at secondary school. Even those students who had remained socially isolated showed 'remarkable resilience.' In comparison, 37.5% of a non-intervention comparison group (also identified 'at risk' in primary school) had marked emotional or behavioural problems (FitzHerbert, 1985). Despite the study's reliance on teacher report, this small-scale evaluation was an early contribution to school-based preventative research which was child rather than institution focused. Moreover, it showed how poor outcomes for CYP could be averted through the implementation of an activity-based, therapeutic programme.

Over the next decade the number of Pyramid clubs delivered in primary schools increased. In 1993, The National Pyramid Trust charity was established to extend Pyramid's geographical reach and to benefit a greater number of children who were at risk of psychosocial difficulties, and to prevent the negative secondary repercussions (social and academic failure) such vulnerability may engender. Pyramid was developed into a manualised programme with an activities pack and handbook to support both delivery and intervention fidelity. In addition, a Level 3 accreditation was established for club leaders (accredited by the Council for Awards in Children's Care and Education: CACHE) which incorporated the principles of the Pyramid ethos. In 2007 the educational charity ContinYou took over the operation of Pyramid but was superseded in this lead role by the University of West London in 2013.

A transition club model was developed in 2003 for children moving into secondary education. An evaluation by the Trust for the Study of Adolescence (TSA) (Shepherd & Roker, 2005) involved 80 Year 6 pupils who had attended transition clubs in eight London primary schools (*Table 2.3.*). Data from children, teachers, parents and club leaders were collected through focus groups with attendees and multi-informant feedback questionnaires. The majority of children were positive about their experience and described themselves as less shy and more confident after attending a club. This view was supported by parents. Feedback from teachers supported the positive impact of Pyramid and, moreover, identified how, for some children, increased confidence had translated into enhanced school performance. Validated psychometric measures were not used to demonstrate improvement in socio-emotional well-being in this study. However, the authors concluded that cross-informant findings suggested the Pyramid model was effective with children in this age group.

In 2010 the potential to extend the Pyramid model to secondary schools was identified. To inform this process, six focus groups were conducted with 68 young people (aged 11- to 14-years) from mixed-sex schools across England and Wales. The majority of participants had not previously attended a Pyramid club. Young people were asked their views on how they thought a secondary school Pyramid club should be structured (e.g. expected outcomes, type of activities) and how it could most effectively be run (e.g. timing, duration). Focus group data were then used to develop age appropriate resources for use in secondary school clubs (e.g. open forum discussions for circle time on issues such as bullying) and shape the format of the delivery model (e.g. typically mixed sex groups). The secondary schools activity pack has been available since 2011.

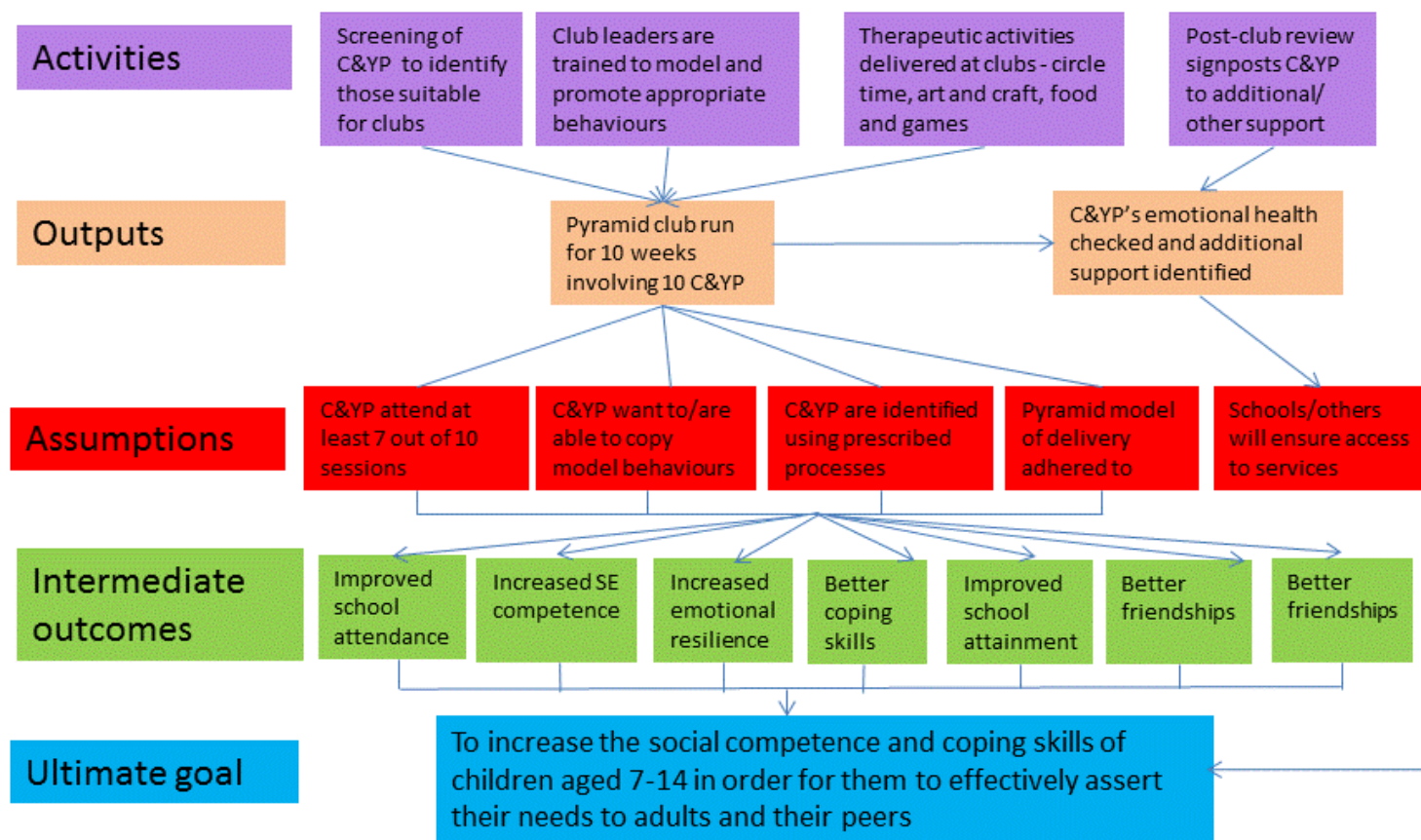
The number of Pyramid primary school clubs in operation peaked in 2009/10, with 610 clubs offering provision for 6,313 children, in 39 local authority areas across England, Wales and Northern Ireland. Changes in government policy from 2010 resulted in all local authorities' early intervention funding being cut by at least half (National Children's Bureau (NCB) & The Children's Society, 2015). The majority of Pyramid clubs were typically located in schools but funded by local authorities and as a consequence there was a reduction in provision. In 2013 Pyramid was offered in 26 local authority areas in England, Wales and Northern Ireland and approximately 140 clubs (primary, transition and secondary variants) were implemented in the academic year 2013/14.

2.1. The Pyramid club theory of change

Changes in the funding landscape have seen an increased focus on data-driven planning and evidence-based practice, for example, the EIF outcomes framework. Against this backdrop of policy and research focus, and the drive to translate evidence of successful interventions into practice, the Pyramid club theory of change (Hughes, 2014) was consolidated. This theory provides a unifying framework for implementation and

evaluation and makes explicit the assumptions, activities, outputs and outcomes which embody the Pyramid intervention (Hughes, 2014) (*Figure 2.0*). Pyramid's ultimate goal is described as maximising the psychosocial functioning of the CYP who attend clubs, to deliver 'real world' outcomes to beneficiaries over the longer-term. The following sections describe the early foundations and theoretical roots of Pyramid, mapping the evolution of the model to the current theory of change. A synthesis of the extant evidence for Pyramid as an effective behaviour change intervention, based on a critical appraisal of the evaluation literature and recognition of the EIF assessment (Clarke et al., 2015), provides a context for conducting the current research i.e. evaluating Pyramid's impact on the socio-emotional well-being and school performance of pupils in early secondary education.

Pyramid Club Theory of Change



Key: C&YP = children and young people
SE = socio-emotional

Figure 2.0: The Pyramid club theory of change (Hughes, 2014)

2.2. The Pyramid model: major influences and theoretical roots

The early development of Pyramid was strongly influenced by Schiffer's (1976) findings on the congruent relationship between group psychotherapy and the socialisation phase of the developing child. The publication of school-based intervention research by Kolvin et al. (1981) was also significant, coinciding with the action research FitzHerbert was undertaking to develop a preventative programme (Pyramid) for socially and emotionally vulnerable children. Along with these early influences a broad base of theoretical perspectives contributes to the current theory of change.

The practice-driven nature of the intervention and the emphasis on delivering effective, 'real world' outcomes for the CYP who attend has allowed for relevant theories to emerge rather than lead (FitzHerbert, 1993). A benefit of this approach is that it permits the freedom for theoretical progression and may reflect current policy and practice (Hughes, 2005; Ohi et al., 2008). A summary of major influences contributing to the Pyramid model and key theoretical underpinnings are presented in *Table 2.0*.

Table 2.0: Summary of major influences and theoretical underpinnings of the Pyramid model

Author(s) Theory/or research	Assumptions/findings	Description of key components	Contribution/relevance to the Pyramid model
Schiffer (1976) Group psychotherapy	<p>Children experience an 'instinctual social hunger' and strong desire for peer acceptance: satisfying needs is essential for normative development</p> <p>Children express emotional states through play</p> <p>The group is the primary therapeutic agent</p>	<p>Activity-based group therapy: children engage actively and experientially in a safe, non-threatening social setting</p> <p>Role of group leader is to offer 'unconditional acceptance' and children develop a strong relationship with group leaders</p> <p>'Universalisation' allows children to see they share similar thoughts and feelings which may emerge during activities</p>	<p>Central focus is on the children themselves, not their problems</p> <p>'Unconditional positive regard' given to each child by Pyramid club leaders</p> <p>Format: activity-based groups involving games and craft-oriented tasks</p>
Kolvin et al. (1981) Effectiveness of school-based interventions on pupil outcomes	<p>Preventative interventions can be delivered in school settings to 'at risk' pupils</p> <p>Short-term, cost-effective interventions are attractive to health and education administrators</p>	<p>Large-scale randomised control study examining the effectiveness of a range of school-based interventions to improve outcomes for pupils identified 'at risk of maladjustment'. N=575 (265 primary; 309 secondary pupils)</p> <p>Play/group therapeutic interventions were highly effective compared to other treatment regimens at both education levels: demonstrated at 18-month and three-year follow-up</p> <p>Pupil outcomes showed greatest improvement over the longer-term</p>	<p>Preventative approach</p> <p>Group therapy can be delivered in the school setting to vulnerable pupils</p> <p>Short-term duration and relative cost-effectiveness pertinent in the contemporary context of intervention decision-making</p> <p>Longer-term outcomes of short-term interventions: Pyramid a 'slow release fertilizer' (FitzHerbert, 1997)</p>

Author(s) Theory/research	Assumptions/findings	Description of key components	Contribution/relevance to the Pyramid model
Kellmer-Pringle (1980) Tenets of healthy child development	<p>Healthy child development is based on: love and security, new experiences, praise and recognition, responsibility</p> <p>A child's experience of these is fundamentally linked to their ability to reach their full potential</p>	A holistic approach caters to a child's physical, cognitive, social and emotional needs which are all interrelated and interdependent	<p>Kellmer-Pringle's four tenets of healthy development form the core of the Pyramid ethos</p> <p>Psychosocial development is nurtured, supporting healthy development and a child's ability to reach their potential</p>
Maslow (1987) Holistic-Dynamic Theory	<p>All humans are continually motivated by needs</p> <p>Human drives are dynamically adjusting and interacting</p>	<p>Premise of a set of universal needs: lower level (deficiency) needs e.g. physiological and safety are typically prepotent to higher level needs and, once fulfilled, individuals are motivated to satisfy psychological and social needs</p> <p>Self-actualisation (highest level need) encompasses self-fulfilment and achieving one's optimal state</p>	<p>Psychological and social needs are intrinsically related to socio-emotional well-being (Gorman, 2010)</p> <p>The SDQ (Goodman, 1997) used to screen pupils for Pyramid: socio-emotional difficulties correspond to Maslow's needs for love and belongingness, and self-esteem</p> <p>Lower level (e.g. hunger/safety) and higher (e.g. esteem) needs are accommodated within the Pyramid model (<i>Figure 2.1.</i>)</p> <p>Pyramid maximises psychosocial capital, equipping pupils with skills and competencies to reach their potential (self-actualisation)</p>

Author(s) Theory/research	Assumptions/findings	Description of key components	Contribution/relevance to the Pyramid model
Bandura (1977) Social Learning Theory	<p>Observation, imitation and modelling are key conduits for learning</p> <p>Emotional responses can be developed through observing the affective reactions of others</p> <p>Internal mental states are crucial to the learning process</p> <p>Individuals are 'agentic', not passive in their experiences</p>	<p>Factors pertinent to the model and the observer impact on learning outcomes</p> <p>Modelled behaviours are more likely to be adopted if the model has high status, prestige or power</p> <p>Behaviour is reinforced through external and internal reward systems</p> <p>Human agency has its foundation in efficacy beliefs. Strong self-efficacy builds resilience and is a learned pattern of thinking</p>	<p>Role of club leader is pivotal: gaining trust and respect of club members is key</p> <p>Club leaders model acceptable behaviours to attendees</p> <p>Positive behaviour is reinforced through praise and recognition and club members are encouraged to feel satisfaction and pride in their achievements</p> <p>The importance of agency (practice) in experiential learning</p> <p>Strengths-based approach</p>
Bronfenbrenner (1994) Ecological Systems Theory	<p>Ecological systems are instrumental in an individual's growth and development</p> <p>The more encouraging and nurturing the environment, the more the individual will grow</p> <p>'Proximal processes' (reciprocal interactions) occur that prompt and sustain development</p>	<p>Ecological systems comprise a set of nested structures within which an individual interacts</p> <p>'Microsystems' are the immediate environment an individual inhabits (e.g. home, school) and comprise the activities, social roles and interpersonal relations experienced. The 'mesosystem' refers to the links between microsystems (e.g. parent and school)</p>	<p>Pyramid is a microsystem in CYP's life and supports 'growth' by providing a nurturing environment</p> <p>The mesosystem has an important influence on the implementation and delivery of Pyramid (e.g. support from school is paramount)</p> <p>More external systems ('exo'/ 'macro') may impact on an attendee's behaviour (e.g. cultural beliefs may affect social norms)</p>

Author(s) Theory/research	Assumptions/findings	Description of key components	Contribution/relevance to the Pyramid model
Tuckman & Jensen (1977) Model of small group processes	Groups follow a similar pattern of development in their creation and life cycle	Stages of development are: 'forming', 'storming', 'norming', 'performing', and 'adjourning' (or 'mourning') Stages do not necessarily occur linearly and one or more stage may be repeated	Distinctive phases in a group's development are accommodated at Pyramid club by providing corresponding resources to support each stage e.g. at the 'forming' stage activities focus on developing a group identity and building trust (<i>Figure 2.2.</i>)

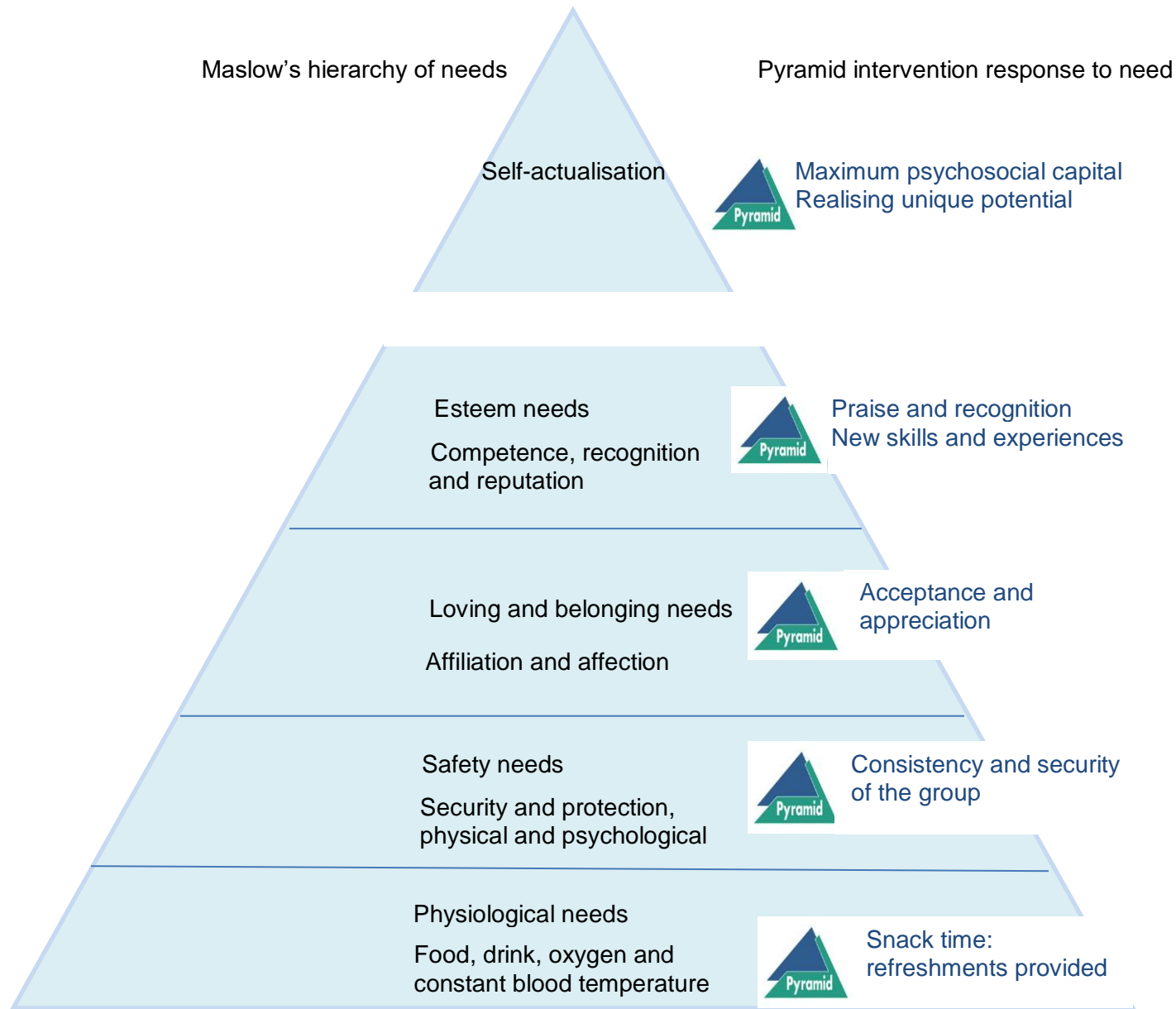


Figure 2.1: Holistic-dynamic theory applied to the Pyramid intervention model: adapted from Maslow (1987) and Pyramid (2011a)

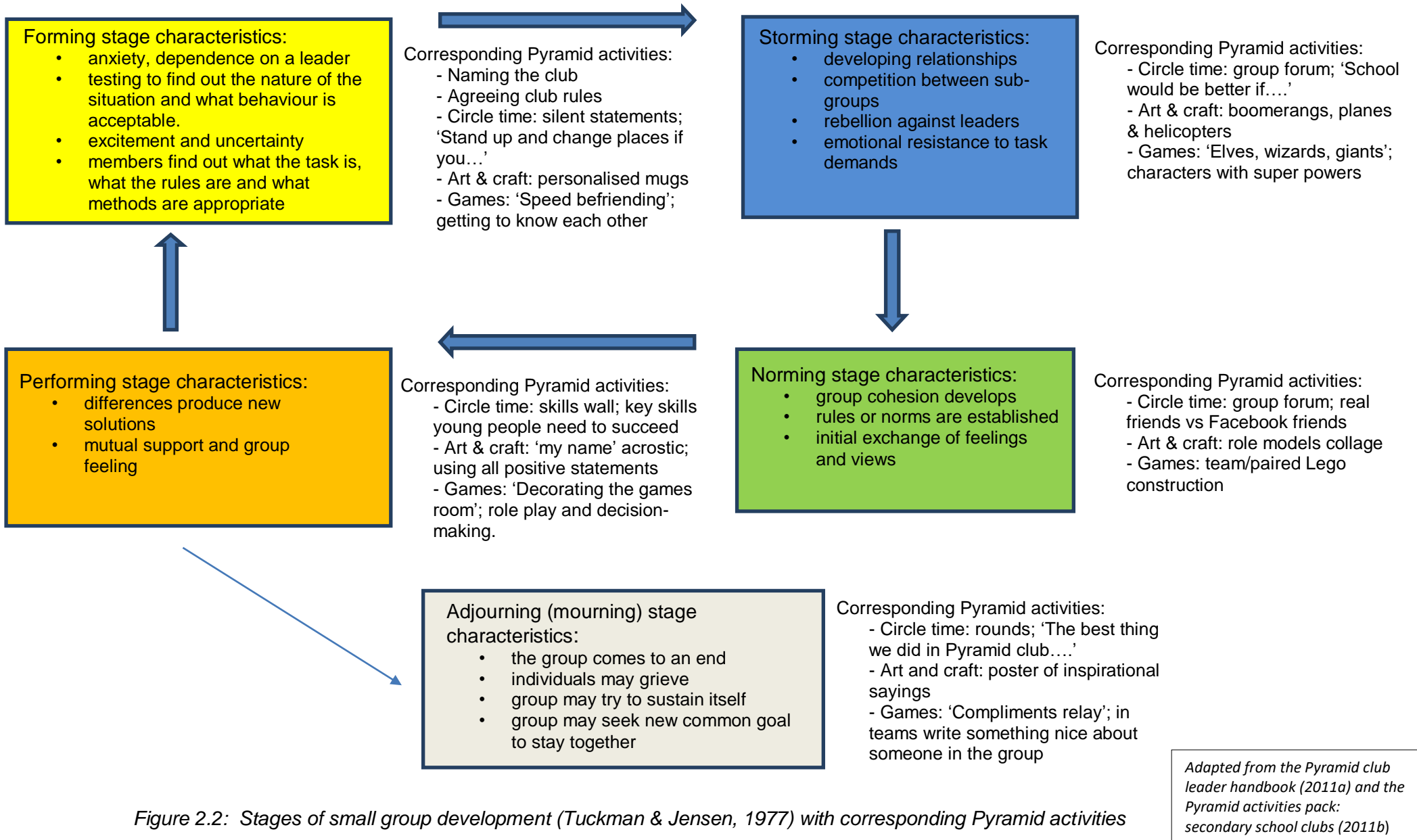


Figure 2.2: Stages of small group development (Tuckman & Jensen, 1977) with corresponding Pyramid activities

2.2.1. Towards a theoretical identity: relevance to the current research

As previously posited, the Pyramid model is a dynamic one which allows for relevant theories to emerge, permitting theoretical progression. However, according to Lyons and Woods (2012), Pyramid's 'mixed-bag' of theoretical perspectives is problematic in attempting to identify the underlying elements or 'active ingredients' responsible for behaviour change. They insist that attention should be given to ascertaining the core components and theoretical underpinnings of Pyramid, thus permitting practitioners to: 'judge the applicability of the intervention and intelligently tailor it to the needs of different groups' (Lyons & Woods, 2012, p18). Whilst the relationship between the use of theory and intervention outcomes is not always clear cut, researchers (e.g. Glanz & Bishop, 2010; Prestwich et al., 2014) agree that a greater understanding of behaviour change and intervention effects can be achieved by developing explicit links between theory and outcomes.

Interventions that target behaviour change are complex by nature, commonly involving several interrelated components (Davidson et al., 2003). The 'active ingredients' of an intervention are described as the components designed to bring about change. They are observable, replicable and irreducible elements which can be used alone or in combination with others (Michie et al., 2013), and rigorous methods are needed to characterise the active content of interventions with precision and specificity, linking component techniques to relevant theory (Michie et al., 2011; 2013). This refers to both the active behaviour change techniques (BCTs) and procedures for delivery (BCPs).

The current synthesis of major influences and theoretical contributions (*Table 2.0.*) has identified Pyramid emerging firmly within a strengths-based approach, one typically associated with Positive Psychology (Peterson & Seligman, 2004). Within this paradigm focus is on enabling factors, enhancing strengths (rather than tackling problems, typically

characteristic of a medical or deficiency model), and thus facilitating optimal human growth (Ryff & Singer, 2008). This fundamental shift in attention recognises that CYP have choice and the potential to be 'masterful' and 'efficacious'. Moreover, a strengths-based approach is essentially proactive, not reactive; advocating the prevention of problems before they arise by building resilience (Diener & Seligman, 2002). Resilience implies acquiring multiple skills, to varying degrees, to cope with life (Alvord & Grados, 2005). According to Brooks and Goldstein (2001), competency is an essential component of resilience and each child/young person possesses a 'small island of competence' with the potential to be a source of pride or achievement. Crucially, although some elements of resilience have a biological basis, resilience skills can be acquired, gradually internalised and embedded as a generalised set of attributes which enable an individual to adapt to challenging life circumstances (Alvord & Grados, 2005). For vulnerable CYP it is critical for practitioners to know which protective factors can be strengthened and used as 'drivers' of change, thus preventing avoidable, negative trajectories (Gutman, Brown, Akerman, & Obolenskaya, 2010): 'Resilience is the perfect target for preventative strategies focused on children's mental health' (FitzHerbert, 1997, p31). There is, therefore, a strong rationale for proposing interventions designed to enhance protective factors, minimise risk and nurture resilience: Pyramid is aligned with such competence enhancement models which have become an increasing focus of public health attention (section 1.2.2.).

As stated, Pyramid's broad base of theoretical standpoints has prompted criticism from some researchers, primarily with regard to how a cohesive understanding of the theoretical components which bring about change can be established (Lyons & Woods, 2012). Despite conflicting conclusions concerning the association between underlying theory and intervention effectiveness (e.g. Glanz & Bishop, 2010; Prestwich et al., 2014), identifying the links between theory and outcomes is key to a better understanding of

behaviour change. According to Bracket, Elbertson and Rivers (2015), a single theory can be helpful for multiple aspects of a socio-emotional programme. Alternatively, multiple theories can be combined to inform a single, cohesive approach, incorporating programme components and implementation strategies. The best approaches combine multiple theories into a 'unique synergy', supporting intervention development, implementation, evaluation, and sustainment, so that expected outcomes are achieved.

The Pyramid club theory of change (Hughes, 2014) identifies the therapeutic activities (i.e. circle time, arts and crafts, games, and snack time/food preparation) through which behaviour change techniques are implemented and produce intermediate outcomes, specifically targeted outcomes (e.g. increased socio-emotional competence) and secondary outcomes (e.g. improved academic attainment). This unifying framework ties together factors operating within the model (processes, activities and assumptions) which combine to deliver tangible, 'real world' outcomes for CYP. It also offers a framework for evaluation: the process of behaviour change can be mapped and component behavioural change techniques linked to underpinning theories (Michie, Johnston, Francis, Hardeman, & Eccles, 2008).

The current research addresses questions that concern both whether Pyramid is an effective intervention (with vulnerable young people aged 11- to 14-years) and how it is effective. This involves examining how composite elements of the model, underpinned by multiple theories, potentially create a 'unique synergy' to provoke behavioural change, and contribute to the ultimate goal of Pyramid - to maximise socio-emotional well-being and help each individual pupil achieve their unique potential.

2.3. The Pyramid intervention: aims, club structure and delivery

This section describes the practical aspects of delivering Pyramid clubs in schools in relation to the identified aims of the intervention and with reference to the underlying theory introduced in the previous section.

The Pyramid intervention has four fundamental aims, to:

- build self-esteem and resilience in the child/young person
- help them find their own voice
- help them to develop friendships to support them both in and out of school
- give them optimism and hope

(Pyramid, 2011a).

Pyramid's aims correspond closely to addressing the needs of a typical child or young person selected to attend a club; shy, quiet, withdrawn pupils who may have problems making friends. These vulnerable individuals could be unhappy in school (and/or at home) but, as they are prone to internalise their difficulties, they often go unnoticed. It is anticipated that after 'graduating' from Pyramid club pupils will have developed socio-emotional competencies and acquired coping and resilience skills which will enable them to successfully navigate the wider school environment and beyond (Pyramid club theory of change: Hughes, 2014).

2.3.1. The components of a three-part preventative package

Pyramid is a three-part preventative model. The stages include: 1. *screening*; 2. *inter-professional consultation/co-operation*, and 3. *activity group therapy* (FitzHerbert, 1985; Makins, 1997). Preceding this is the process of setting-up the club e.g. liaising with schools, agreeing the logistics of running a club and recruiting, vetting and training group leaders (Pyramid, 2011a).

Crucial to this activity is the school Pyramid Coordinator, the person responsible for liaising with stakeholders (pupils, parents/carers, club leaders, teachers/staff, Headteacher and the local Pyramid Coordinator, if one is in post), and who has a vital function ensuring that a Pyramid club comes to fruition. It is important that wider staff are aware a Pyramid club is running in their school and have an understanding of its ethos and methods: involving the whole school community helps ensure no stigma is attached to pupils selected for the programme (Pyramid, 2011a).

The first stage, *screening*, involves deciding which year group/s will receive the intervention and identifying the 'at risk' pupils most likely to benefit. In primary schools universal screening of whole year cohorts is recommended and typically undertaken. The informant-rated SDQ for 4- to 17-year-olds (Goodman, 1997) is completed by the class teacher or another adult who knows the child well. Universal screening helps ensure that vulnerable children suitable for Pyramid are not overlooked. However, in secondary schools this may not be viable as cohorts tend to be larger and pupils are often taught by several subject teachers. It is more common for alternative procedures to be employed. These may vary between schools but nevertheless must be robust enough to identify those pupils most likely to benefit. Selection may involve considering referrals from several subject teachers and/or pastoral staff, or reference to previously recorded student well-being data from primary school.

In secondary schools, self, peer, and parent referral is also recommended (Pyramid, 2011a). This provides a means of identifying suitable candidates through informants other than school staff. Information from all sources is pooled to collate a list of pupils recommended for screening using the informant-rated SDQ (completed by the member of school staff who knows the pupil best). Pupils who demonstrate emotional and/or peer

difficulties and/or a lack of prosocial skills are considered suitable for Pyramid, unless they demonstrate additional cause for concern in hyperactivity and/or conduct issues.

The SDQ scores are then used as a basis for the second stage in identifying and selecting club members, *inter-professional consultation/co-operation*. The Pyramid club Coordinator and school Pyramid Coordinator (sometimes with other relevant school staff and/or support agencies) share their expertise and knowledge about individual pupils to decide which students are most suitable. Consideration is also given to ensuring that the group is balanced by gender (or alternatively single sex) and that individual personal relationships are taken into account, for example, siblings should not be invited to join the same group. Pupils who have demonstrated cause for concern but are not considered suitable for Pyramid (e.g. with a high score for conduct difficulties) are also highlighted and may be signposted for more appropriate provision, such as an individual intervention.

The final stage of the model is delivering the therapeutic group intervention through a Pyramid club. Selected pupils are invited to attend (participation is voluntary) and club details and parental consent letters are sent via the school. A Pyramid club usually accommodates up to 10 children (12 in secondary schools) and is run by three or four volunteer group leaders. All club leaders have completed training (ten hours minimum) and have undergone enhanced Disclosure and Barring Service (DBS) checks. An eclectic mix of volunteers from the school and community including teaching assistants, learning mentors, 6th form pupils, university students and Barnardo's staff (in Northern Ireland), typically run clubs. It is essential that club leaders are 'neutral' adults and not, for example, a child's class teacher so that club members can develop new relationships and patterns of behaviour.

Pyramid leaders attend a pre-club induction meeting at the school to cover orientation and protocols. Before the first session a club file is set up containing all the forms needed to run the club, including background information on each pupil (special dietary requirements, medical conditions etc.). The club file is used to record attendance and for club leaders to make weekly observations on individual pupils' progress. The Pyramid club is delivered over 10 weeks by group leaders (supported by the local Pyramid Coordinator and/or school Pyramid Coordinator). Following completion of the final session, the informant-rated SDQ is re-administered. Post-club scores are compared with pre-intervention scores to identify the impact, if any, of Pyramid on pupils' socio-emotional well-being. Most clubs also use Pyramid's own post-club evaluation form to gather feedback from children and, to a lesser extent, parents.

2.3.2. Pyramid club structure and therapeutic content

Pyramid clubs provide an activity-based group therapeutic environment (Kolvin et al., 1981; Schiffer, 1976) containing physical, psychosocial, creative and reflective elements. The typical format is divided across four therapeutic activities: circle time, arts and crafts, games, and snack time/food preparation. All club activities reflect the core ethos of Pyramid: praise and recognition, love and security, new experiences, and responsibility (Pyramid, 2011b).

The physical set-up of circle time allows everyone equal status and prompts mutual eye contact. It lends itself effectively to practising skills such as speaking, listening and turn-taking (Mosley, 2009). A key principle of circle time is inclusiveness; everyone has the chance to participate and contribute to the activity. The physical circle itself symbolises connectivity, encouraging wholeness rather than fragmentation (Roffey, 2006). Circle time, in the context of a Pyramid club, provides all group members with the opportunity to express their feelings and articulate their thoughts and needs in a non-judgemental

environment. It also encourages a culture of listening to others. Over time club members become increasingly confident about contributing to circle time and feelings of mutual trust develop. This supports positive relationships and friendship building (Pyramid, 2011a).

Art and craft activities are designed for club members to have fun whilst simultaneously gaining a sense of achievement from completing a task (Pyramid, 2011b). New social and task-based skills can be practised through working co-operatively with adults and peers. Art and craft activities are associated with a range of therapeutic benefits; they allow self-expression and help develop cognitive skills (problem-solving and decision-making), and relationship skills (sharing and co-operation) which boost self-esteem and encourage friendship building (Hogan, 2001; Reyner, 2008).

In a similar vein, the club games are designed to be a fun way to practise social skills and learn how to co-operate with others. Learning the rules of the game, taking turns and being a gracious winner or loser are primary socialisation skills (Schaefer, 1993). Club members have the opportunity to engage in the type of activities they will encounter in the playground and other social contexts in a 'safe and controlled manner' (Pyramid, 2011a, p12). Therapeutic games, appropriate to the developmental stage of the child (*Figure 2.2.*), help attendees relax whilst simultaneously enhancing social skills; through activities shared social relationships are built (Mathur & Berndt, 2006). Peer interaction fostered through games enables CYP to cooperate better, resolve conflicts and develop empathy (Fantuzo, Sekino, & Cohen, 2004). Moreover, simply participating in pleasurable and fun activities increases well-being by providing an escape from daily stressors (Lyubomirsky & Layous, 2013).

Snack time (preparing and sharing food) plays a significant part in Pyramid club (Pyramid, 2011b). This often takes place early in the session, helping to satisfy some of the physiological needs (hunger, thirst) attendees may arrive with. Furthermore, sharing, taking turns and engaging in informal conversations are all part of the nurturing process: 'Along with providing actual nutrition, food represents emotional and symbolic nurturing' (Mishna, Muskat, & Schames, 2002, p27) and demonstrates 'active caring'. The busy environment of the normal school day offers limited opportunities to have relaxed, uninterrupted conversations. Pyramid provides a forum where unresolved issues can be brought up, perhaps for the first time e.g. worries or concerns about situations at home, such as an illness in the family (Hughes, 2012).

2.3.3. Developing a sense of belonging and group membership

The physical environment can greatly contribute to the overall friendly and supportive atmosphere of the group (Bronfenbrenner, 1994). The allocated space for the Pyramid club can be enriched by colourful displays of attendees' work. During the first session members agree a name for their club and are encouraged to collaboratively produce a poster incorporating the name. A mutually agreed set of club rules is also produced in poster format. Engaging in this process helps foster a sense of shared ownership and belonging, as well as encouraging self-efficacy and a sense of control over one's environment. The posters are a weekly reminder of group membership and club rules contribute to the structure of the weekly sessions.

A strong emphasis is placed on inclusivity. Pyramid aims to ensure that every member realises that: 'they matter enormously as a person' (Pyramid, 2011a, p30) and that their participation and contribution to sessions is valued. The need to belong is a fundamental human motivation and by forming or strengthening social attachments positive emotions are engendered (Baumeister & Leary, 1995; Maslow, 1987). Conversely, the absence of

belongingness: 'may constitute severe deprivation and cause a variety of ill effects' (Baumeister & Leary, 1995, p497).

2.3.4. Supporting experiential learning

Learning new skills is also an integral component of Pyramid, instilling club members with burgeoning confidence and a 'can do attitude' (Pyramid, 2011a). Attendees are encouraged to try new experiences in the secure environment of the club. They can practise fresh skills and learn to enjoy (rather than fear) novel experiences. Club leaders are trained to identify and focus on individual needs within the group, providing supportive feedback and reinforcing positive behaviours through praise and recognition (Pyramid, 2011a).

2.4. Evaluating the impact of Pyramid: the research evidence

Having described the development of the Pyramid model and the intervention components, the remainder of this chapter presents an appraisal of previous Pyramid evaluations.

A search of relevant databases: PsycINFO; PsychArticles, and Educational Resources Information Center (ERIC), found seven peer reviewed evaluations of Pyramid clubs. A further search of Electronic Thesis On-line (EThOS); OpenGrey, and Google Scholar, identified additional studies from the 'grey' literature. All the evaluations were of primary school Pyramid clubs (predominantly Year 3 children; aged 7- to 8-years). Whilst the search strategy was thorough it was not exhaustive: each Pyramid club collects data at a local level to assess the impact on attendees and it was not possible or practical to access data from every club. Nevertheless, the following appraisal of the available evidence provides a context for the current research which evaluates the impact of secondary

school Pyramid on an older cohort (aged 11- to 14-years) where no extant research was identified.

A further focus of the current research was to examine the secondary impact of Pyramid on pupils' school performance. FitzHerbert's (1985) study and several unpublished evaluations of Year 3 clubs looked also at non-primary outcomes, including pupils' school performance. In the following appraisal the evaluation studies have been categorised by the year group targeted for Pyramid (*Tables 2.1. and 2.3.*) and also according to whether an outcome measure of school performance was included (*Table 2.2.*). These categories were selected as the most appropriate way to first summarise, and then synthesise, the evidence. They correspond to the two key domains of interest for the current research: age (Pyramid's effectiveness with an older cohort), and impact of socio-emotional well-being on pupils' school performance.

Table 2.1: Evaluation studies: Pyramid Year 3 clubs with measure/s of socio-emotional well-being only

Study	Design and sample	Measures	Key Findings	Limitations
Ohl, Mitchell, Cassidy, & Fox (2008)	Quasi-experimental pre-/post-test design Short-term follow-up Pyramid pupils (N=42) and non-problem, non-intervention comparison group (N=52) from four schools	SDQ informant-rated version (teacher) (Goodman, 1997)	Reduction in Pyramid group's total difficulties (TD) scores on SDQ significantly greater than comparison group at short-term post-test assessment Post-test SDQ bandings of Pyramid group in line with the norms for a UK community sample	Single outcome measure Single-informant Moderate sample size
Ohl (2009) PhD thesis, Thames Valley University	12-month follow-up study of Pyramid children from one cohort in Ohl, Fox, & Mitchell (2012)	SDQ informant-rated version (teacher) (Goodman, 1997)	Pyramid attendees maintained their post-test level of improved TD scores compared to comparison group one-year on Comparison group TD scores increased Significant post-test improvement for Pyramid attendees on intervention-targeted domains maintained at 12-month follow-up	Only one cohort of original (2012) participants in follow-up study Attrition rate: 35% of original cohort
Goodwin (2009) Masters dissertation,	12-month follow-up study of Pyramid attendees (N=33) and non-problem, non-intervention comparison	SDQ informant-rated version (teacher) (Goodman, 1997)	Pre-club scores on SDQ demonstrated a significant between groups difference not evident at 12-month follow-up:	Small sample size Effect sizes not reported

Study	Design and sample	Measures	Key Findings	Limitations
University of Manchester	group (N=24) from five schools	SDQ self-report (Goodman et al., 1998)	non-significant difference at follow-up characterised by marked increase in socio-emotional difficulties for comparison group whilst Pyramid group appeared to have experienced a 'buffer effect'	Suitability of SDQ self-report questionnaire with children under 11 years
Ohl, Fox, & Mitchell (2012)	Quasi-experimental pre-/post-test design Pyramid pupils (N=103) and non-problem, non-intervention comparison group (N=282) from seven schools: total of two cohorts across two academic years	SDQ informant-rated version (teacher) (Goodman, 1997)	Reduction in Pyramid group's TD scores on SDQ significantly greater than comparison group at 12-week follow-up Post-test SDQ bandings of Pyramid group in line with norms for a UK community sample Pyramid group showed significant improvement on sub-scale domains targeted by intervention	Single outcome measure Single-informant
Ohl, Fox, & Mitchell (2013)	Qualitative study using circle time focus groups to investigate the views of 27 children in Year 3 who had attended a Pyramid club in the autumn term of the same school year		Overall participants evaluated their experiences of Pyramid positively and reported socio-emotional benefits of attending Children suggested ways to develop the intervention (e.g.	Participants from three clubs and one geographical area only Single outcome measure: views of other stakeholders (e.g. club leaders) not

Study	Design and sample	Measures	Key Findings	Limitations
	Thematic analysis of data		longer sessions, more physical space)	investigated
McKenna, Cassidy, & Giles (2014)	Quasi-experimental pre-/post-test design Short-term and 12-week follow-up Primary 4 (Year 3) children from seven schools in Northern Ireland Pyramid pupils (N=57) and a non-intervention comparison group (N=31) deemed 'low risk' or with externalising issues	SDQ informant-rated version (teacher) (Goodman, 1997) Teacher-rated frequencies for peer exclusion	Significantly greater reduction in emotional and peer difficulties for the Pyramid group than comparison group at short-term follow-up and significant difference maintained at 12-week follow-up Teacher ratings of peer exclusion decreased post-test but increased at 12-week follow-up (but not to baseline levels)	Moderate sample size Effect sizes not reported Single item on SDQ (peer difficulties) used to estimate peer exclusion
Cassidy, McLaughlin, & Giles (2015)	RCT design Short-term and 12-week follow-up Primary 4 (Year 3) children from 13 schools in Northern Ireland Pyramid pupils (N=141) and a wait-list control (N=85)	SDQ informant-rated version (teacher) (Goodman, 1997) The Trait Emotional Intelligence Questionnaire (TEIQue-360°S) (Petrides, 2009)	Significantly greater reduction in emotional and peer difficulties and higher scores on prosocial behaviour and emotional intelligence for the Pyramid group than wait-list control at short-term follow-up All significant differences maintained at 12-week follow-up	Single-informant Short follow-up period to assess longer-term impact and wait-list design prevents further follow-up

Table 2.2: Evaluation studies: Pyramid Year 3 clubs with measure/s of socio-emotional well-being and school performance

Study	Design and sample	Socio-emotional ¹ / school performance ² measures	Key socio-emotional well-being findings	School performance outcomes	Limitations
FitzHerbert (1985)	Long-term follow-up study Year 9 (N=25) and Year 7 and 8 (N=9) pupils who attended Pyramid in Year 3 or Year 4 and non- intervention comparison group of Year 11 pupils (N=22) identified 'at risk' in primary school	Teacher reports on social ¹ and academic ² progress Secondary school attendance records ²	Majority of Pyramid attendees (31) were doing well socially compared to comparison group Pyramid children displayed 'resilient' behaviours	Majority of Pyramid attendees (27) were doing well academically or, if lower achievers, making an effort with school work Majority of comparison group (17) demonstrated poor progress and (over one fifth) chronic absenteeism	Pyramid children and control group were different ages at follow- up Reporting bias (teachers knew which children had attended Pyramid clubs) No validated measure of socio-emotional well- being was used
Skinner (1996) Unpublished report, University of Surrey	Study 1: Quasi- experimental pre- /post-test design Year 3 Pyramid pupils (N=110) and non-intervention comparison group (N=38) also identified 'at risk' from 13 schools (some but not all comparison pupils	Study 1: 42-item questionnaire based on the internal scale of the Child Behaviour Checklist (CBC: Achenback & Edelbrock, 1986) ¹ Teacher ratings on progress in reading, writing, spelling and Mathematics scored on a 10-point scale ²	Study 1: Significant difference in the Pyramid group's self-esteem, social skills, relationships with adults and peers compared to comparison group at four-month follow-up Study 2: Significant self-reported increases in	Significant progress in writing performance compared to comparison group	Study 1: Adapted, non- validated, measures Effect sizes not reported Mixed comparison group Study 2: Risk of eliciting socially desirable responses from children by the interviewer (Pyramid Trust Manager), an adult

Study	Design and sample	Socio-emotional ¹ / school performance ² measures	Key socio-emotional well-being findings	School performance outcomes	Limitations
	received alternative intervention) Study 2: pre- and post-club questionnaire interviews with Pyramid pupils (N=40) from six of the 13 schools from Study 1	Study 2: Questionnaire based on the Piers-Harris Children's Self Concept Scale (PHCSCS: Piers & Harris, 1986) ¹	perceived popularity and happiness from pre-to-post club		authority figure the children had not previously met
Davies (1999)	Quasi-experimental pre-/post-test design	SDQ informant-rated version (teacher) (Goodman, 1997) ¹	Significant improvement on the Pyramid group's emotional and peer difficulties scores compared to comparison group at short-term follow-up	No between groups difference in the copying task	Small sample size Effect sizes not reported
Unpublished report, University of Surrey	Short-term follow-up Pyramid pupils (N=21) and non-problem, non-intervention comparison group (N=47) from three schools	Three writing performance tasks: free writing; sentence generation, and copying ²		Significantly greater reduction in errors in the sentence generation task and improvements in free writing performance for Pyramid group compared to comparison group	Groups not matched on academic ability: Pyramid group had lower pre-club reading, writing and Mathematics scores than comparison group
Headlam Wells (2000)	Mixed methods	Teacher-rated National Pyramid Trust (NPT) screening checklist ¹	Significant difference in the Pyramid group's increased internal locus of	Significant difference in the Pyramid group's Mathematics scores compared to	Small sample size Effect sizes not reported
Masters	Quantitative phase: quasi-experimental				

Study	Design and sample	Socio-emotional ¹ / school performance ² measures	Key socio-emotional well-being findings	School performance outcomes	Limitations
dissertation, University of London, Institute of Education	pre-/post-test design Short-term follow-up Pyramid pupils (N=16) and matched, non- intervention comparison group also identified 'at risk' (N=16) from two schools Qualitative phase: researcher observations and interviews with Pyramid children and their teachers	B/G-STEEM (Maines & Robinson, 1993) ¹ New Macmillan Reading Analysis (Vincent & de la Mare, 1985) ² Mathematics skills worksheet, British Ability Scales (II) (Elliot, Smith, & McCulloch, 1996) ² Interviews with Pyramid children and their teachers ^{1, 2}	control compared to comparison group at short-term follow-up No significant differences on self- esteem scores Researcher observations reported improvements in Pyramid group's self-esteem and confidence Children and teacher reports supported researcher's observations	comparison group Mean scores for Pyramid group for reading accuracy and comprehension higher than comparison group but not statistically significant Researcher post-club observations identified Pyramid attendees demonstrated a more positive and confident approach to Mathematics tasks (e.g. willingness to try problem-solving strategies)	NPT checklist non- validated Original comparison group from one of the schools was replaced with a non- academically matched substitute group Qualitative data were not cross-validated by a second researcher Risk of researcher bias in observations Risk of socially desirability responses elicited from children by the interviewer (the researcher), an adult authority figure the children had not previously met
Cooper (2001) Masters dissertation, University of East London	Long-term follow-up study on the effectiveness of a Year 3 Pyramid club with pupils currently in Year 8 (N=11)	Teacher-rated National Pyramid Trust (NPT) 33-item screening checklist (Year 3 and Year 8 data) ^{1, 2}	Significant improvements in the Pyramid group on self-esteem but not on relationships and social skills compared to	Teacher ratings identified significant improvements in the Pyramid group on learning skills and motivation but not on school progress	Small sample size Effect sizes not reported NPT checklist non- validated questionnaire

Study	Design and sample	Socio-emotional ¹ / school performance ² measures	Key socio-emotional well-being findings	School performance outcomes	Limitations
	<p>Comparison group pupils initially selected for Pyramid in Year 3 but did not attend (N=3)</p> <p>Interviews with Pyramid children who attended a club in Year 3 and currently in Year 8</p>	<p>Self-report questionnaire (Year 8 data)^{1, 2}</p>	<p>comparison group Interview data identified most pupils reflected on a positive experience of Pyramid</p>	<p>compared to comparison group</p> <p>Self-reported 'ability to ask for help' and 'ability to concentrate on work' significantly higher for Pyramid attendees than comparison group</p>	<p>Self-report questionnaire non-validated</p> <p>Validity of a retrospective interview technique to gather attendees' reflections on attending a club five years previously</p>

Table 2.3: Evaluation studies: Pyramid Year 6 (Transition) clubs with measure/s of socio-emotional well-being only

Study	Design and sample	Measures	Key Findings	Limitations
Shepherd & Roker (2005) Unpublished report by the Trust for the Study of Adolescence (TSA)	Mixed methods Quantitative phase: pre-/post-test design Short-term and four-month follow-up Pyramid pupils (N=80) from eight schools Qualitative phase: focus groups with children and telephone interviews with parents	Teacher-rated Coping in Schools Scale (CISS) (McSherry, 2001) Self-report 'smiley' questionnaire (measure of socio-emotional well-being and feelings about transition) Feedback questionnaires and comments from teachers and club leaders	Significant differences in children's feelings about transition from pre- to post-club Focus group testimonials from club attendees reported positive experiences of Pyramid and self-reported increase in socio-emotional skills Feedback from parents, teachers and club leaders agreed that children had benefitted from attending Pyramid	No comparator group CISS data only collected at baseline precluding any comparative analysis Self-report questionnaire non-validated Pre- and post-club 'smiley' questionnaire data only available for 29 of 80 children who attended clubs Effect sizes not reported
Fox, Ohl, Hughes, Haye, Mitchell, & Graham (2006)	Qualitative study using focus groups to investigate the views of pupils who had attended a Pyramid transition club (N=9) Thematic analysis of data		Attendees generally perceived Pyramid as a 'valuable' experience they enjoyed Support from club leaders was identified as a critical component of the club Some, not all, attendees reported positive change including feeling more confident	Single outcome measure Views of only one transition group so difficult to consider findings in relation to other clubs Views of other stakeholders (e.g. club leaders) not investigated

Study	Design and sample	Measures	Key Findings	Limitations
Lyons & Woods (2012)	<p>Mixed methods, single case study design</p> <p>Quantitative phase: Pre-/post-test design</p> <p>Pyramid pupils (N=9) from one school.</p> <p>Qualitative phase: post-club focus groups at two x time points: beginning and end of first term of Year 7; club leaders (N=3) and club attendees (N=6; N=7)</p> <p>Telephone interviews with parents</p> <p>Researcher observations</p> <p>Thematic analysis of data</p>	<p>SDQ informant-rated version (teacher) (Goodman, 1997)</p> <p>Social Competence Inventory (SCI: Rydell, Hagekull, & Bohlin, 1997)</p>	<p>Reduction in TD scores and all subscales on SDQ at seven-month follow-up</p> <p>SCI total scores increased, some a lot, others modestly at seven-month follow-up</p> <p>Improvements in socio-emotional well-being and reduction in transition anxiety for pupils and parents elicited from thematic analysis of qualitative data</p> <p>Qualitative findings reported core components of the Pyramid model including club leader style and skills, the small group format and tailored activities</p>	<p>No comparator group for quantitative phase</p> <p>Descriptive statistics only: sample size very small for quantitative phase</p> <p>No immediate post-test quantitative data collected</p> <p>Pre-club and follow-up informant was not the same person (rater pre-club was the primary class teacher and post-club, Head of Year 7); inter-rater reliability not reported</p> <p>Single case study design limits the conclusions to one transition club</p>
Cassidy, McLaughlin, & Giles (2014)	<p>RCT design</p> <p>Short-term and 12-week follow-up</p> <p>Primary 7 (Year 6) children from 13 schools</p>	<p>SDQ informant-rated version (teacher) (Goodman, 1997)</p> <p>SDQ self-report (Goodman et al., 1998)</p>	<p>Significantly greater reduction in emotional and peer difficulties and higher scores on prosocial behaviour for the Pyramid group than wait-list control at short-term follow-up; consistent on informant and</p>	<p>Short follow-up period to assess longer-term impact and wait-list design prevents further follow-up</p> <p>Concerns regarding use of self-report measures with</p>

Study	Design and sample	Measures	Key Findings	Limitations
	in Northern Ireland Pyramid pupils (N=162) and a wait-list control (N=132)	The Trait Emotional Intelligence Questionnaire Child Short Form (TEIQue- CSF) (Mavroveli, Petrides, Shove, & Whitehead, 2008)	self-report SDQ versions Higher self-reported emotional intelligence scores for the Pyramid group than wait-list control at short-term follow-up Some improvements (albeit to a lesser extent) found on externalising issues All significant differences maintained at 12-week follow- up	children Inter-rater reliability on SDQ not reported

2.4.1. Overview and implications of findings

The 17 evaluation studies included in the current appraisal were conducted between 1985 and 2015 and used a range of outcome measures to examine the impact of Pyramid on primary school children in Year 3 and Year 6. Despite the existence of Pyramid clubs in schools across England, Wales and Northern Ireland, the majority of the evaluation literature comprises studies conducted in England. Three studies from Northern Ireland (Cassidy et al., 2014; 2015; McKenna et al., 2014) are considered in the current appraisal whilst the remaining evaluations (14) are of clubs run in England. This section examines the evidence and considers the implications of the findings.

2.4.2. Year 3 evaluation findings: impact on socio-emotional well-being

Most Pyramid evaluations considered in this appraisal are of Year 3 clubs. In the first recent study to appear in an academic journal (Ohl et al., 2008), Year 3 pupils from four West London primary schools were allocated to either a Pyramid group (N=42) or a non-problem (no intervention) comparison group (N=52). Total difficulties (TD) scores were calculated prior to the first club session (baseline) and again immediately after the 10-week programme (post-test). As expected, due to the group selection process, the Pyramid group's baseline mean TD score was higher than that of the comparison group. However, the reduction in mean TD score for the intervention group was significantly greater than the reduction for comparison pupils, with corresponding effect sizes of $r = .71$ and $r = .44$ respectively.

Ohl et al. (2008) also compared each child's pre-club and post-club SDQ banding ('abnormal', 'borderline' or 'normal'). At baseline, 35.7% of the Pyramid group and 88.5% of the comparison scored in the 'normal' range. Of Pyramid attendees, 47.6% had improved at post-club assessment, whilst 47.6% remained in the same category, and 5% had shifted downwards (from 'normal' to 'borderline'). Whereas, 7.7% of comparison

children had improved post-test, 84.6% were the same and the remaining 7.7% had declined. These shifts in post-intervention bandings brought the total sample into line with norms for a UK community sample (10% 'abnormal', 10% 'borderline' and 80% 'normal': Goodman, Ford, Simmons, Gatward, & Meltzer, 2000a). The authors concluded that Pyramid had impacted positively on the socio-emotional well-being of attendees. Furthermore, the difference in effect size between groups suggested improvements in socio-emotional health could not be attributed to typical developmental alone. Limitations of the study included a modest sample size and the use of only one outcome measure: the SDQ (Goodman, 1997) completed by a single informant (teacher).

The SDQ is designed as a multi-informant outcome measure and although the children in the Ohl et al. (2008) sample were too young (under 11-years-old) for recommended use of the self-report version (Goodman et al., 1998), parent/carer assessments could have provided additional data to strengthen the findings. Goodman et al. (2000a) insist that the SDQ is most valid when all possible informant (teacher/parent/child) ratings are included. Moreover, the single outcome measure precluded the investigation of any secondary effects on other domains.

A subsequent evaluation of Pyramid on a larger sample of Year 3 pupils (N=385) (Ohl et al., 2012) examined effects on the individual domains of the SDQ: emotional symptoms, peer relationship problems, conduct problems, hyperactivity/inattention, and prosocial behaviour. Results supported previous findings (Ohl et al., 2008), demonstrating a significant decrease in TD scores for Pyramid attendees. Although TD scores for the comparison group dropped slightly, this was not statistically significant. Moreover, subscale analysis identified significant improvements in emotional symptoms, peer relationship problems, and prosocial behaviour (the specific socio-emotional competencies targeted) for the Pyramid group but not the comparison group. Remaining

subscale analysis (conduct problems hyperactivity/inattention) yielded non-significant changes for both groups.

Findings from Ohi et al. (2012; 2008) provide empirical evidence for the effectiveness of Pyramid as a socio-emotional intervention, demonstrating improvements in targeted domains. Although secondary outcomes were not investigated, Ohi et al. (2012) concluded that a crucial implication was that a child's potential to 'flourish' in the wider school environment could be increased by strengthening socio-emotional competencies (through interventions like Pyramid). The authors recommended that future evaluations consider the relationship between socio-emotional competencies and other domains, including school performance, and include multiple informants and measures to elicit the experiences and perceptions of Pyramid service users.

Pyramid clubs, specifically aimed at addressing the needs of shy children, were set-up by Barnardo's in Northern Ireland in 2003 and branded as Pyramid Plus. Pyramid Plus uses the same delivery protocols and content as Pyramid clubs in England and Wales although sessions are typically delivered during school hours. A prospective evaluation (McKenna, et al., 2014) in seven primary schools (N=82) collected teacher ratings on the SDQ for the Pyramid Plus group and a non-intervention comparison group at baseline (pre-club), post-test, and 12-week follow-up. Teacher-rated frequencies of peer exclusion were calculated independently (item 14 on the SDQ: *Generally liked by other children*, was used to estimate levels of social integration). Results indicated a greater reduction in emotional symptoms and peer relationship problems for Pyramid attendees than for the comparison group at post-test assessment. Although these gains were not sustained at 12-week follow-up, improvements from baseline scores were still demonstrated.

One third of Pyramid Plus children had been experiencing 'borderline' to 'abnormal' levels of emotional symptoms at baseline assessment, with over one fifth (22.8%) similarly experiencing peer relationship problems. These figures had decreased to 6.3% and 3.2% respectively post-test, indicating that for the majority of children, attending a club had helped to ameliorate difficulties in these domains. Teacher-rated frequencies of peer exclusion identified that, pre-intervention, over one third of Pyramid Plus children had experienced peer exclusion. This more than halved to under 14% post-test but the reduction was not maintained at 12-week follow-up (rising again to 24.3%). The authors concluded that Pyramid Plus children were still more likely to encounter difficulties interacting with peers than their comparison group counterparts (20.3% of comparison children were experiencing difficulties at 12-week follow-up).

A subsequent study (Cassidy et al., 2015) involving two of the authors (McKenna, et al., 2014), utilised an additional measure of socio-emotional well-being (the Trait Emotional Intelligence Questionnaire: TEIQue-360°S; Petrides, 2009). Pupils identified as suitable for the intervention (226 pupils from 13 primary schools) were randomly allocated to either an intervention (N=141) or wait-list control group (N=85). Teacher ratings on both measures were collected at baseline, post-test and 12-week follow-up. Results demonstrated significant improvements for the Pyramid group on the emotional symptoms, peer relationship problems, and prosocial subscales of the SDQ, and higher emotional intelligence scores on the TEIQue-360°S compared to controls. Moreover, all significant findings were sustained at 12-week follow-up, with large effect sizes observed at both post-test and follow-up assessment. Nonetheless, despite these positive findings the same limitation with regard to data from a single informant applies.

In line with the conclusions drawn by Ohl et al. (2012; 2008), researchers have suggested that future evaluations should capture: 'the voice of the child' (McKenna et al., 2014, p14)

and a few studies have attempted to address this qualitatively (e.g. Lyons & Woods, 2012; Ohl, Fox, & Mitchell, 2013), and through mixed methods designs (e.g. Cooper, 2001; Headlam Wells, 2000; Shepherd & Roper, 2005). Nonetheless, there remains a dearth of qualitative evaluations of Pyramid.

One of the few qualitative studies (Ohl et al., 2013) conducted circle time focus groups to explore the views of 27 Year 3 children who had attended a Pyramid club earlier in the academic year. Participants were invited to talk about their experiences e.g. what they liked about Pyramid, suggestions for improvements. A deductive, thematic analysis was carried out by two of the researchers and acceptable inter-coder reliability was demonstrated using Cohen's Kappa (Hruschka et al., 2004). The majority of children evaluated their experience positively and self-reported improvements in socio-emotional competencies were in line with previous quantitative findings (Ohl, 2012; 2008); children described themselves as: 'Feeling less scared, less shy, less nervous and more confident' (Ohl et al., 2013, p211). The authors acknowledged the limitations of a single data gathering method (circle time focus group) and suggested future evaluations include interviews with adults, generating data to cross-validate findings. A further limitation concerns the wider applicability of the findings (based on data gathered exclusively from three Year 3 clubs from one geographical area). Methodological concern over the relevance of findings beyond the club(s) included in individual studies pertains to other evaluations adopting this design (e.g. Fox et al., 2006; Lyons & Woods, 2012).

2.4.3. Year 3 evaluation findings: impact of Pyramid on other domains

Whilst the focus of studies discussed in the previous section has been exclusively on socio-emotional outcomes, a number of early evaluations primarily from the 'grey' literature, looked at the impact of Pyramid on other domains, including pupils' school

performance. This attention to cognitive and academic outcomes has not been mirrored in the more recent peer reviewed literature.

A follow-up study of secondary-aged children who had attended a Pyramid club in Year 3 or Year 4 (FitzHerbert, 1985) indicated that pupils were progressing better, both socially and academically, than non-intervention comparison pupils identified similarly 'at risk' in primary school. However, in light of methodological limitations any conclusions should be considered cautiously. Concerns include the absence of a validated measure of socio-emotional competency. Teacher assessments may have been prone to bias as informants were aware of which pupils had attended a Pyramid club in primary school and those who had not. Another limitation relates to the use of a comparison group of pupils who were at least two years older.

Nevertheless, other researchers have offered additional, tentative support for secondary effects on school performance outcomes (Cooper, 2001; Davies, 1999; Headlam Wells, 2000; Skinner, 1996). Both Skinner and Davies identified greater than expected progress in writing skills amongst Pyramid children. Whereas Skinner used teacher ratings (prone to the same potential bias as FitzHerbert, 1985), Davies implemented a task-based writing measure. However, the children in the intervention and comparison groups were not matched on academic ability which raises concerns regarding the legitimacy of between groups comparison. Davies (1999) also found significant improvements in emotional and peer problems in Pyramid attendees compared to comparison group pupils, replicating previous findings by Skinner (1996).

The same reservation regarding use of non-matched groups can be levelled at Headlam Wells (2000) who identified a significant difference in Mathematics scores, with Pyramid

attendees performing better than comparison group counterparts; pupils were not, however, academically alike. From additional observational data, Headlam Wells reported a marked difference in Pyramid pupils' 'approach' to learning Mathematics. After attending Pyramid, the children were: 'more confident to have a go at problems' (Headlam Wells, 2000, p43) and apply problem solving strategies. This was associated with a congruent increase in the Pyramid children's internal locus of control (significantly higher than that of the comparison group). However, conclusions drawn solely on researcher observations are limited due to their susceptibility to researcher bias. Whilst interview data (from teachers and Pyramid children) supported self-esteem and confidence gains, teachers were aware of which children had attended Pyramid which may have biased their responses. Moreover, acquiescence and/or social desirability bias may have influenced children's responses in interviews with authority figure adults (e.g. Headlam Wells, 2000; Skinner, 1996).

Cooper (2001) conducted a five-year follow-up evaluation on the effectiveness of a Year 3 Pyramid club with pupils currently in Year 8 and a comparison group of peers who had initially been selected for Pyramid but had subsequently not attended. Improvements in learning skills and motivation were demonstrated for Pyramid attendees. Self-report questionnaire items, 'ability to ask for help' and 'ability to concentrate on work' were scored significantly higher by Pyramid attendees than comparison pupils. Retrospective interviews were used to investigate club members' perceptions of Pyramid club. Although two of the 11 pupils had difficulty remembering attending, all the interviewees reflected on a positive experience: 'the group leaders' and 'working together as a team' were the main reasons pupils had enjoyed Pyramid club. Employing retrospective interviews with adolescents to recount primary school experiences raises the issue of validity, illustrated by some respondents' poor ability to recall attending a club.

A synthesis of findings from Pyramid club evaluations is provided after first considering the evidence from Year 6 Pyramid studies.

2.4.4. Year 6 evaluation findings: impact on socio-emotional well-being

A transition club variant of Pyramid for Year 6 pupils was developed in 2003. A mixed methods multi-informant design was used to evaluate a pilot transition club (Shepherd & Roker, 2005) and examine whether Pyramid supported selected pupils to make a smooth transition to secondary school. Although the researchers intended to include a comparison group, practical issues prevented the identification of suitable pupils and a comparator was not included. The Coping in Schools Scale (CISS: McSherry, 2001) was implemented as the informant-rated (teacher) measure of socio-emotional well-being. However, only baseline data were collected, precluding analysis of changes over time. Self-report questionnaire data on children's socio-emotional well-being and feelings about transition were also collected. Results demonstrated significant improvement in how positively the children felt about going to secondary school and how they felt about life. However, this was a non-validated measure and, moreover, due to low response rates at both time points, results were based on data for 36% of attendees only.

Cross-informant findings from focus group and interview data (collected from Pyramid children, parents, teachers and club leaders) were consistent and indicated the positive impact of attending Pyramid on children's confidence, social skills and secondary school readiness. Self-reported improvements in behaviour, attitude and school work were noted by some club members. Feedback from teachers was congruent and identified how for some children increased confidence had led to enhanced academic performance and improved behaviour. Club leader feedback reinforced the views of other informants, extolling the benefits to children of attending Pyramid. Club leaders described how they perceived the experience of running a club as positive for themselves, benefitting them

personally and professionally. Practical difficulties of administering school-based interventions were reported and the need for adequate training and support to deliver clubs efficiently and effectively was highlighted.

Despite a number of methodological limitations with the quantitative phase of the study, Shepherd and Roker's (2005) qualitative analysis suggested attending Pyramid had a positive impact on children's socio-emotional well-being and tentatively indicates a secondary effect on other domains (i.e. behaviour and school work). A study strength was the inclusion of multi-informants, enabling cross-validation. Moreover, by involving multiple stakeholders in the evaluation process some key components of successful interventions were elicited e.g. well-trained club leaders.

A focus group study by Fox et al. (2006) described the experience of nine Year 6 pupils who attended a Pyramid transition club, offering some insight into the service users' perspective. Thematic analysis of the data suggested that overall the children perceived the club as beneficial. In particular, they valued the activity-based format of sessions and opportunity for social engagement. Some, but not all, of the attendees identified positive changes in themselves which predominantly related to feeling more confident about transition. A major factor contributing to children's positive perception of Pyramid was support provided by club leaders, echoing similar findings by Cooper (2001) from Year 3 data: the opportunity to develop trusting relationships with group leaders was highlighted as one of the most valued benefits.

A single case study (Lyons & Woods, 2012) with nine transition club pupils used a mixed methods design to examine Pyramid's effectiveness and investigate theoretical elements linked to behavioural change. Data were collected from club attendees, class teachers, club leaders and parents using several methods including focus groups with club

members and club leaders, telephone interviews with parents, and observations of club sessions. Assessments on the informant-rated SDQ (Goodman, 1997) and the Social Competence Inventory (SCI: Rydell et al., 1997) were collected at baseline (pre-club) and seven-month follow-up. Baseline assessments were completed by the Year 6 class teacher and post-club assessments by the Head of Year 7.

Descriptive statistics (Lyons & Woods, 2012) showed a decrease in the mean TD score for club attendees from pre- to post-club (pre-club data were available for only six of the nine attendees). Pre-intervention ratings identified four children with TD scores within the 'abnormal' range, one 'borderline' and one 'normal'. Post-intervention, seven of the children's scores were in the 'normal' band (three of these, however, had no pre-club data) and two were 'borderline'. One child's TD score increased following the intervention but remained within 'normal' limits. Of the three children in the 'abnormal' band pre-intervention, one had shifted to the 'normal' range and two to the 'borderline' range. However, differences between pre- and post-test scores on the subscales identified that the greatest reduction for four children was in hyperactivity/inattention, and for one child a large decrease in conduct problems, neither of which are domains Pyramid specifically targets. Children selected for Pyramid would not typically score high for conduct problems or hyperactivity/inattention. Notably less impact was demonstrated on emotional symptoms (which is pertinent to Pyramid), with two of the three children identified in the 'abnormal' range pre-club remaining in that banding post-club.

A reduction in peer relationship problems and an increase in prosocial behaviour were reported at the individual child level. However, the reduction in mean TD score should be interpreted cautiously as the effect on specific subscales is not described. The authors failed to report two of the three subscales pertinent to Pyramid (emotional symptoms and peer relationship problems) where significant changes have been demonstrated by other

researchers using larger samples (Cassidy et al., 2014; 2015; Ohi et al., 2012; McKenna et al., 2014). However, increased prosocial behaviour was identified and Pyramid children were described as 'kinder and more considerate' after attending the club (Lyons & Woods, 2012, p13).

SCI findings were consistent, supporting improved prosocial behaviour. All the Pyramid children had increased their SCI scores post-intervention; the most pronounced improvement was on the prosocial orientation subscale, with smaller gains demonstrated on the social initiative subscale. At the individual level, four children whose pre-club scores were 'indicative of problems' had shifted to the 'above average' category on the prosocial orientation subscale. Lyons and Woods (2012) concluded that specific prosocial behaviours were impacted by Pyramid e.g. competencies such as helpfulness and empathy, more so than others e.g. initiating social interactions.

Methodological concerns which include incomplete data (SDQ), no comparator, absence of immediate post-test data, and the limits of descriptive statistics (although appropriate for the small sample size), restrict the conclusions that can be drawn. A further limitation was that data collected on the SDQ and the SCI were from different informants (pre-club from the primary class teacher and seven-month follow-up from the Head of Year 7), and no inter-rater reliability analysis was reported. Nevertheless, Lyons and Woods (2012) claim that their quantitative results support intervention effectiveness, whilst qualitative findings provide an insight into the 'Pyramid experience'.

Observational, interview and focus group data from multi-informants (attendees, club leaders and parents) were thematically analysed to investigate the 'Pyramid experience' and identify factors contributing to intervention effectiveness. Socio-emotional gains (e.g.

confidence and friendship skills) supporting transition were identified. Elements contributing to Pyramid's effectiveness were described as the pivotal role played by group leaders (identified in other studies: Fox et al., 2006; Shepherd & Roker, 2005), activities tailored to meet the needs and interests of the group (e.g. snack time) and the 'group experience' (e.g. the small group structure which facilitates targeted support).

Commenting on the 'group experience' the authors noted that the group did not: 'gel as might have been envisaged based on the careful selection procedure' (Lyons & Woods, 2012, p16). However, five of the nine attendees had been in the 'abnormal' range for either hyperactivity/inattention or conduct problems at pre-club screening (not the profile of a 'typical' Pyramid child) which suggests that the selection criteria had not been strictly applied.

A quantitative study by Cassidy et al. (2014) has contributed to the previously scant evidence base for Pyramid transition clubs. Pupils suitable for Pyramid from 13 primary schools in Northern Ireland were randomly allocated to either the intervention (N=162) or wait-list control group (N=132). The age group of participants permitted self-report measures and thus enabled cross-informant validation of the findings. Consistent with results from studies with 7- to 8-year-old children (e.g. Cassidy et al., 2015; McKenna et al., 2014; Ohl et al., 2012), significant improvements in targeted domains were demonstrated on relevant subscales of the SDQ compared to controls, generating large effect sizes. Significant gains in emotional intelligence were also identified and all improvements were maintained at 12-week follow-up. Moreover, evidence of some impact on (non-targeted) externalising issues suggests a broader reach of the intervention which warrants further investigation. However, the wait-list control design prevented further follow-up analysis.

2.4.5. Synthesis of the evidence from primary school evaluations

Primary school evaluations have predominantly focused on demonstrating intervention effectiveness on primary outcomes (socio-emotional competencies). Although support for the Pyramid model is encouraging, findings should be interpreted with caution; methodological concerns include small sample sizes (Cooper, 2001; Davies, 1999; Goodwin, 2009; Headlam Wells, 2000), unreported effect sizes (Cooper, 2001; Davies, 1999; Goodwin, 2009; Headlam Wells, 2000; McKenna et al., 2014; Shepherd & Roker, 2005; Skinner, 1996), use of non-validated measures (Cooper, 2001; FitzHerbert, 1985; Headlam Wells, 2000; Skinner, 1996), and the questionable validity of a retrospective interview design (Cooper, 2001).

All the quantitative studies reviewed (except Shepherd & Roker, 2005; Lyons & Woods, 2012) included a comparison group, however, some lacked robust selection criteria: Skinner's (1996) mixed comparison group comprised some 'at risk' children who received no intervention and others who received an alternative (unspecified) intervention; whilst Davies (1999) and Headlam Wells (2000) used comparison groups that were not matched with Pyramid children on academic ability, despite implementing measures on academic outcomes.

Pyramid evaluations with pre/post-test designs typically used non-equivalent groups which raises questions about between group comparisons, not relevant when random sampling is implemented (Schneider, Carnoy, Kilpatrick, Schmidt, & Shavelson, 2007). Whilst the Medical Research Council (MRC) advises researchers to 'always consider' randomisation, the ultimate decision should rest on the specific characteristics of individual studies (Craig et al., 2008). As Pyramid is a selective intervention randomisation is deemed inappropriate and a wait-list control was rejected by researchers (e.g. McKenna et al., 2014; Ohl et al., 2012; 2008) on ethical grounds as sufficient club places were available.

However, for Cassidy et al. (2014; 2015) limited availability of Pyramid places for suitable pupils meant a wait-list control group was unavoidably presented. This happenstance enabled pupils with similar difficulties to be randomly assigned, thus increasing methodological rigour.

The use of non-standardised measures was a further concern; methods included teacher ratings/observations on social and academic progress and non-validated questionnaires (Cooper, 2001; FitzHerbert, 1985; Headlam Wells, 2000; Shepherd & Roker, 2005; Skinner 1996). More recent, peer-reviewed studies have utilised well-validated measures i.e. the SDQ: Goodman (1997); Goodman et al. (1998) (Cassidy et al., 2014; 2015; McKenna et al., 2014; Ohi et al., 2008; 2012), and the TEIQue: Petrides (2009) (Cassidy et al., 2014; 2015). These methodologically more robust evaluations have contributed substantially to the evidence base for Pyramid.

A retrospective interview technique (Cooper, 2001) raises more methodological issues; participants may have difficulty recalling past behaviours or experiences, or responses could be based on 'wishful thinking' (Hardt & Rutter, 2004). A related risk involves eliciting socially desirable responses during interviews with CYP (e.g. Headlam Wells, 2000; Skinner, 1996), although acquiescence bias may pose greater risk due to the power imbalance between researcher and interviewee (Punch, 2002).

Self-report measures (e.g. Cooper, 2001; Goodwin, 2009) are similarly prone to social desirability response bias, impacting on a questionnaire's validity (Huang, Liao, & Chang, 1998). The SDQ self-report version for 11- to 17-year-olds (Goodman et al., 1998) was used in a study with Year 3 children (aged 7- to 8-years) (Goodwin, 2009). The

appropriateness of using self-reports with children below the recommended minimum age i.e. 11-years-old for the SDQ (Goodman et al., 2000) is a related concern.

Despite limitations associated with various data collection methods, in particular when participants are CYP, robust evaluations of complex interventions such as Pyramid must include the perspective of the 'user': 'appropriate users should be involved at all stages of the development, process and outcome analysis of complex interventions' (MRC, 2006, p15). If service users' perceptions and experiences are not considered there is the risk of using impoverished knowledge which can potentially lead to delivering practices and policies which do not meet CYP's needs (Shaw, Brady, & Davey, 2011).

The focus group method used in Pyramid evaluations with Year 3 and Year 6 pupils (Fox et al., 2006; Lyons & Woods, 2012; Ohl et al., 2013; Shepherd & Roker, 2005) is widely regarded (e.g. Gibson, 2007; Kamberelis & Dimitriadis, 2013) as developmentally appropriate for eliciting children's views and experiences (section 3.4.2.1). However, as argued, findings from a single year group, restricted to one geographical location (Fox et al., 2006; Lyons & Woods, 2012; Ohl et al., 2013; Shepherd & Roker, 2005) may be limited to specific Pyramid clubs and preclude drawing any broader conclusions. Whilst qualitative methods can provide valuable insights, this inherent feature can present a challenge for establishing the strength of the evidence: the criterion used in evaluation frameworks to demonstrate effectiveness (e.g. EIF and Project Oracle) is primarily geared towards quantitative studies.

There is much less evidence for Pyramid's effectiveness with older children; four studies of Year 6 clubs compared to 13 of Year 3 clubs were identified in the current appraisal. With the exception of Cassidy et al. (2014), available studies are predominantly qualitative

in design (Fox et al., 2006; Lyons & Woods, 2012; Shepherd & Roker, 2005). Despite literature supporting the success of socio-emotional interventions across age groups, there are far fewer evaluations with older pupils (especially secondary-aged pupils) compared to studies with primary-aged children (Durlak et al., 2011; Vidair et al., 2014). Pyramid clubs in UK secondary schools (for 11- to 14-year-olds) are a relatively recent phenomenon (secondary school resources have been available since 2011) and no evaluation of Pyramid's effectiveness with this age group has appeared in either the 'grey' or published literature.

Some early Pyramid evaluations examined socio-emotional factors and other outcomes i.e. general academic improvement (FitzHerbert, 1985), progress in writing (Davies, 1999; Skinner, 1996), progress in Mathematics (Wells, 2000), and increased learning skills and motivation (Cooper, 2001). Lack of attention to secondary outcomes in more recent studies shows a departure from the aims of early researchers e.g. for Davies (1999): 'to identify whether any changes in writing skills were commensurate with changes in emotional/social/behavioural factors' (Davies, 1999, p4). Despite several methodological limitations (*Table 2.1.*), these studies raise important questions about the secondary effects of Pyramid on pupils' performance in numeracy and literacy (Davies, 1999; Skinner, 1996; Wells, 2000), and their learning skills and engagement (Wells, 2000).

Evidence supporting the longer-term benefits of Pyramid is sparse and more research is needed to investigate how long short-term gains are sustained (Ohl et al., 2012). Follow-up research by FitzHerbert (1985) examined the impact of Pyramid on secondary-aged pupils who had previously attended a primary school Pyramid club. They were described as demonstrating better social and academic outcomes than a non-intervention comparison group (identified with similar difficulties in primary school) in teacher

assessments. Despite methodological limitations (*Table 2.1.*), FitzHerbert documented long-term positive outcomes for former attendees.

A 12-month follow-up study of a Year 3 Pyramid club (Ohl, 2009) found the majority of attendees had maintained post-test improvements in TD scores on the informant-rated SDQ (Goodman, 1997), thus supporting sustainable intervention effects. Conversely, comparison group pupils continued to show an increase in TDs (previously demonstrated at post-test). However, an attrition rate of 35% reduced the number of Pyramid participants in the final analysis to 52 (with 76 comparison students), weakening the strength of the evidence. This underlines one of the major challenges for researchers gathering data in schools. The findings are, nevertheless, encouraging and call for further research to examine the longer-term outcomes of Pyramid.

2.5. The evidence for Pyramid: the relationship with UK assessment frameworks

Pyramid was included in a review of the evidence on the effectiveness of interventions which aim to enhance the socio-emotional well-being of CYP in the UK (EIF: Clarke et al., 2015). EIF effectiveness ratings range from the lowest classification: ‘-1’ (where the intervention has been shown to be ineffective or harmful) to ‘4’ (where the evidence is firmly established). Pyramid (based on the evidence from two Year 3 primary club evaluations: McKenna et al., 2014; Ohl et al., 2012) achieved a rating of ‘3’. This classification applies to interventions that are deemed ‘effective’, demonstrating: ‘initial evidence of improving child outcomes from high quality evaluation’ (Clarke et al., 2015, p4). Moreover, interventions that achieve a Level 3 (or above): ‘effectively reach the level required by the UK Government’s Magenta Book to guide evaluation practice in Government’ (Clarke et al., 2015, p24).

The EIF are undertaking a further review of evidence for the interventions reported in Clarke et al. (2015) and will include the relative cost of each programme (rated 1-5, with 1 being the lowest cost). Review findings will be published online (<http://www.eif.org.uk>) in spring 2017.

2.6. Implications for the current research in secondary schools

The current research addresses gaps in the extant evidence identified through an appraisal of Pyramid evaluations (section 2.4.) and a review of the broader school-based intervention literature (Chapter One). It has been established that evidence to support the effectiveness of Year 6 Pyramid clubs is sparser than for Year 3 clubs and there is an absence of secondary school Pyramid evaluations. Nonetheless, urgent need for psychosocial interventions like Pyramid for pupils in early secondary education is indicated by a wide body of mental health and school transition literature (e.g. Brooks et al., 2011; Fazel, et al., 2014; Fink et al., 2015). Moving from childhood to adolescence is a developmentally sensitive period and can be characterised by a decline in well-being (e.g. Cohen & Smerdon, 2009). Vulnerable young people in early secondary education are a recognisable group to benefit from Pyramid and, therefore, it is important to examine Pyramid's effectiveness with this age group; this is addressed in the current research.

Investigating the secondary effects of Pyramid was highlighted (section 2.4.5.) as an area for research attention. A growing body of literature (e.g. Durlak et al., 2011; Sklad et al., 2012) suggests socio-emotional competencies impact on a range of domains, including educational outcomes. The effect of Pyramid on pupils' school performance warrants examination and was included in the current research, using both quantitative and qualitative data collection methods: this encompasses a more holistic measure of school performance which exceeds the narrower criteria of task-based indicators of academic

progress typically used in previous Pyramid evaluations (e.g. Davies, 1999; Headlam Wells, 2000).

As previously postulated, in a climate characterised by restricted funding and increasing pressure on academic outcomes, early intervention projects promoting socio-emotional development are more likely to be selected if they can provide robust, empirical evidence linking enhancement in this domain to better school performance (DH, 2013; Vidair et al., 2014). Pursuing this research direction increases the likelihood of translating evaluation findings into practice which is a potential implication of the current research. It is also anticipated that research findings will be added to relevant evidence hubs (e.g. EIF) which guide future intervention selection and policy related to CYP's socio-emotional well-being.

The next chapter outlines the researcher's philosophical perspective and methodology for conducting the research.

Chapter Three Methodology for the current research

This chapter sets out the researcher's perspective and the methodology used in the current research. It begins by providing the philosophical framework from which the researcher has established her ontological and epistemological positions. The appropriateness and compatibility of quantitative and qualitative approaches are considered. The design, methods and outcome measures used in each study are presented. Methodological choices are justified in the context of addressing the aims of the evaluation which map onto specific research questions. A summary of the analysis strategy used for the quantitative and qualitative data is provided. Ethical considerations are discussed. The chapter concludes with a description of how the findings can be integrated to satisfy the research objectives.

3. Research paradigm: philosophical underpinnings and rationale

In the current research a critical realist approach was selected as it recognises the validity of different perspectives on reality and enables a more flexible orientation for the researcher (Savin-Baden & Major, 2013). Multiple domains of reality exist and this distinguishes critical realism from other ontologies that focus on the realms of the actual and the empirical (Bhaskar, 2008). Gaps in the Pyramid literature (section 2.6.) have contributed to the research. Previous evaluations have predominantly adopted a quantitative approach to examine effectiveness (e.g. Cassidy et al., 2014; 2015; McKenna et al., 2014; Ohl et al., 2012; 2008). The current research questions pertain to whether Pyramid is effective and also enquire how change in attendees is brought about. Addressing these questions requires the methodological freedom to apply the most appropriate method and does not align with a single view of reality. Within a critical realist framework quantitative and qualitative methodologies can be viewed as autonomous, compatible and complementary (Archer, Sharp, Stones, & Woodiwiss, 2007; Danermark, 2002). A critical realist position refutes the concept of certain knowledge and accepts the possibility of alternative valid accounts. 'Objectivity' and the pursuit of scientific inquiry, therefore, exist within the parameters of particular values. Conducting research from diverse perspectives may contribute to a better understanding of social reality, as reality

can exist on multiple levels (Greenwood, 2012). An understanding of context is crucial to critical realist explanations as this can help elucidate the conditions that promote or impede underlying mechanisms. A critical realist approach is particularly appropriate in evaluation studies when the focus concerns not only *if* an intervention works but *how* and *why* it works (Pawson & Tilley, 2004), as in the current research.

Investigating processes and 'generative mechanisms' (Bhaskar, 2008) can be pursued effectively through qualitative data collection techniques, and the perceptions and experiences of service users have been identified as a critical consideration in identifying an intervention's active components (Lewin et al., 2015). The current research interest in how Pyramid works involves investigating the perceptions and experiences of stakeholders (service users and club leaders) and requires the flexibility to adopt a qualitative approach to inquiry.

Assuming a critical realist position facilitated a research design appropriate to the scope of the research questions (section 1.8.1.). This combined both quantitative and qualitative methodologies: a pluralist approach permitted the researcher to select the most suitable method and measures to investigate the particular phenomena under scrutiny (Bryman, 2012). For example, in line with previous Pyramid evaluations (e.g. Cassidy et al., 2014; 2015; McKenna et al., 2014; Ohi et al., 2012; 2008) quantitative measures were implemented to examine questions concerning intervention effectiveness over time. Nonetheless, it was recognised that when outcome criteria are fully determined in advance, unintended programme effects can be overlooked (Denzin & Lincoln, 2011). A qualitative method can compensate for this limitation associated with quantitative designs that rely exclusively on standardised outcome measures.

3.1. Developing an evaluation framework for the current research

Despite the apparent constructivist leaning, a critical realist approach is pragmatic and sees merit in combining quantitative and qualitative techniques as compatible and complementary. In the pragmatist tradition, knowledge production is judged by its usefulness rather than its 'truth' (May & Williams, 2002). Methodological choices are based on which approach works best for the research issue and quantitative and qualitative methods are combined in mixed methods designs to this purpose.

A growing body of research (e.g. Boeije et al., 2015; Moore et al., 2015) has shown that quantitative and qualitative methods can be employed collaboratively to address specific research questions and satisfy the demands of evaluation research. 'Real world' evaluation is 'action oriented' and undertaken with a view to making recommendations for change e.g. to improve effectiveness, and/or inform decisions about future development by collecting robust evidence and drawing valid conclusions which make a difference (Patton, 2008; Robson & McCartan, 2016). Nonetheless, a mixed methods design must be appropriate to the research questions rather than a panacea (Bryman, 2012), and this principle is now considered in relation to the current research.

Earlier Pyramid evaluations in primary school settings adopted a quasi-experimental (e.g. McKenna et al., 2014; Ohl et al., 2012; 2008) or RCT design (Cassidy et al., 2014; 2015). In the current research the quantitative phase replicated the quasi-experimental design to examine the effectiveness of Pyramid with an older cohort of pupils (11- to 14-years). A randomised design was deemed unsuitable as Pyramid is a selective intervention. A wait-list control was considered inappropriate on ethical grounds should sufficient places be available for pupils identified as in need: an additional disadvantage is the limitation placed on the length of time to collect follow-up data (as ultimately all participants receive the intervention) (Shadish, Cook, & Campbell, 2012). Moreover, risk of increased

participant attrition and associated pragmatic challenges (e.g. additional time and research costs) constituted further disadvantages.

Arguably, using the experimental design as a single evaluation method can fail to accurately identify a programme's impact (Pawson & Tilley, 2004). Whilst a plethora of factors may influence the observed effectiveness of an intervention e.g. poor quality implementation and lack of programme fidelity (Durlak & DuPre, 2008; Hagermoser-Sanetti & Kratochwill, 2014), other types of evidence (emanating from different philosophical underpinnings) may offer 'in-depth insights that complement broader-brush quantitative evidence' (Shute, 2012, p753). Hence, the inclusion of a qualitative method in the current research permitted further scrutiny of the quantitative findings.

Furthermore, the current research sought to provide an understanding of how and why Pyramid is (or is not) an effective intervention in a secondary school environment. Earlier researchers (McKenna et al., 2014; Ohl et al., 2012), having demonstrated Pyramid's effectiveness in primary school settings using quasi-experimental designs, suggested future researchers adopt a mixed methods approach to elicit service users' opinions and thus augment the extant evidence base. Qualitative evaluations of Pyramid are sparse and generally lack methodological rigour (section 2.4.5.). However, two studies have appeared in the more recent literature (Lyons & Woods, 2012; Ohl et al., 2013). Whilst findings were consistent with conclusions from quantitative studies i.e. supporting the effectiveness of the intervention on socio-emotional outcomes (Ohl et al., 2012: 2008), intervention processes remain largely under-investigated.

The foremost concern in evaluation studies should be effectiveness, however, once this is established attention should turn to how the intervention works (e.g. Moore et al., 2015). Decision-makers require additional information on the feasibility and acceptability of

interventions so they are better placed to fully understand factors that may influence their implementation (Boeije et al., 2015). Therefore, attending to underlying mechanisms is a prerequisite to understanding, evaluating and improving programmes: a cumulative understanding can be gathered by using a theory-focused process which considers the intervention components, how they interact and their contribution to effectiveness (Moore et al., 2015; Pawson & Tilley, 2004). As previously argued, achieving this objective requires appropriate methods and a qualitative approach is regarded by several researchers (e.g. Britten, 2011; Lewin et al., 2015) as the most fitting.

In the current research a qualitative method was selected to gain an insight into stakeholders' perceptions and experiences (Pyramid attendees and club leaders). Outcomes are understood by exploring the mechanisms through which a programme attempts to bring about change along with the contextual conditions that are most conducive to that change. Focus should be on the actions of individuals and groups that make interventions effective (human agency); programmes become effective if participants (all those engaged in the social process): 'choose to make them work and are in the right conditions to enable them to do so' (Pawson & Tilley, 2004, p294).

Moreover, this method recognises the rights of CYP to inform practices and policies which concern them, capturing the unique 'voice' of the child. It has been widely argued (e.g. Greene & Hogan, 2005; Heary & Hennessy, 2006) that CYP's experience and the reality of their world cannot be fully understood through inference and assumption on the part of adult researchers. The contribution of CYP's perspective to service evaluation has become an increasingly important consideration (McLaughlin, 2015; Shaw et al., 2011) and has seen a shift in focus from research 'on' children to research 'with' children (James, 2007). This is a priority in the current research.

3.2. Methodological pluralism: operationalising the research questions

A consideration of the methodological literature identified a critical realist approach as the most appropriate to undertake the current research. This perspective reflects the ontological and epistemological position of the researcher and provided a coherent and pragmatic framework within which to select the methods which best addressed the research questions. The process of selecting an appropriate design for the current research is summarised in *Figure 3.0*.

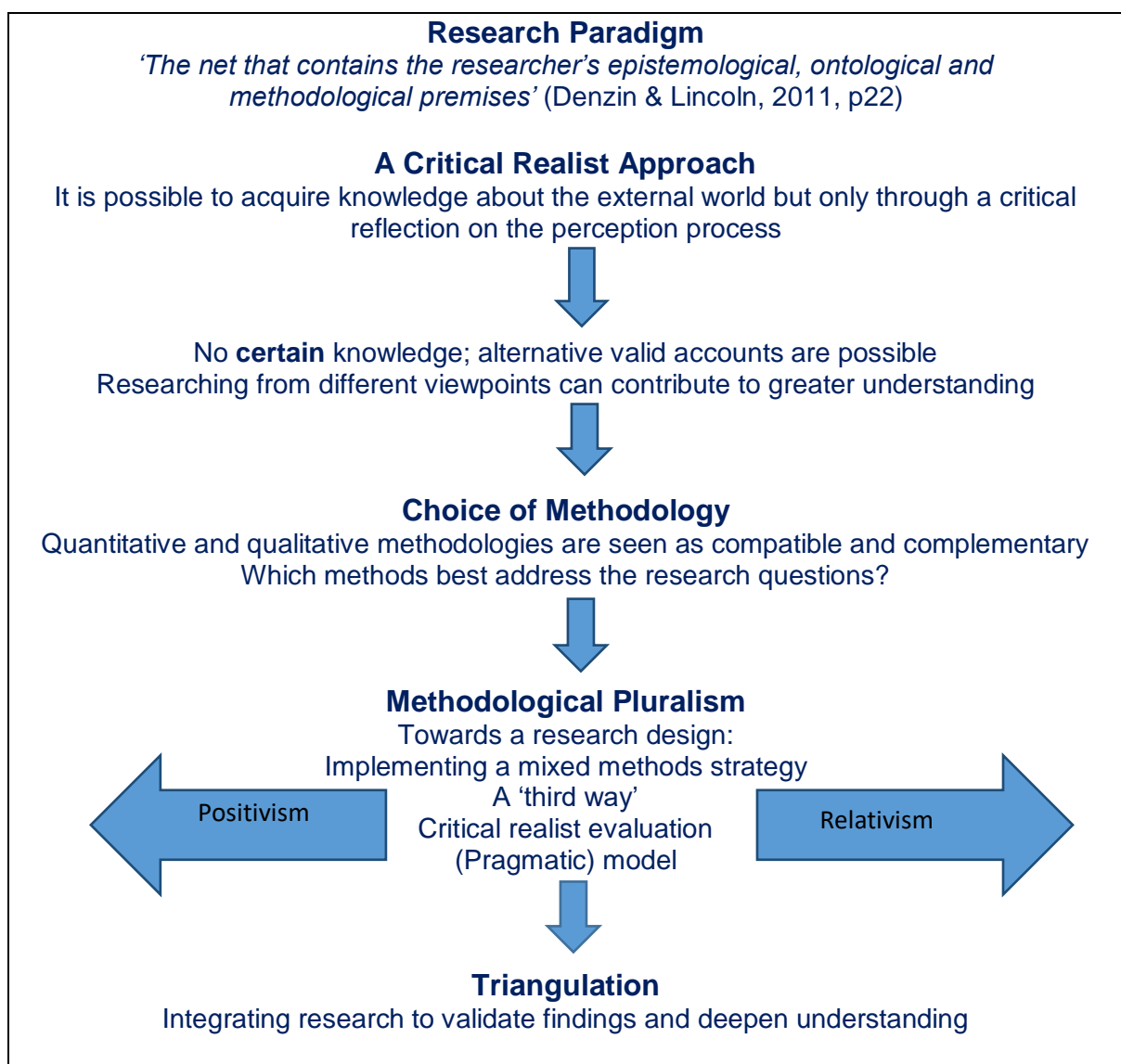


Figure 3.0: Determining the research design: an evolving process

A mixed methods design integrates quantitative and qualitative methods to investigate research phenomena from multiple perspectives, creating a 'third paradigm' of pragmatism (Cresswell & Plano Clark, 2011). Moreover, the process of 'triangulation' (employing more than one research method) permits increased confidence in the research findings, as using more than one reference point enables greater accuracy of measurement (Boumans, 2015). By combining different methods in a single research design the researcher is afforded greater conviction in the findings, as each method has its strengths and weaknesses and the strengths of one measure can be expected to compensate for the weaknesses of another. Thus, by employing more than one method, measurement error can be reduced and issues of bias can be lessened (Denzin & Lincoln, 2011).

Nonetheless, it is in the 'spirit of triangulation' that discrepancies in research findings can be expected to emerge (Bryman, 2012). The potential exists for different sets of findings to be inconsistent. This underlines the problem of relying on just one measure or method. Furthermore, even if the process of triangulation yields convergent findings, researchers should be wary of concluding their results are unquestionable, as both sets of data could potentially be flawed (Bryman, 2012). Triangulation of method was included in the research design for the dual purpose of enhancing the researcher's understanding of the Pyramid intervention and for validation of findings (Olsen, 2004).

Methodological pluralism allows the researcher to employ a range of research tools to investigate different facets of the same phenomenon (Danermark, 2002; Olsen, 2004). A mixed methods, pragmatic approach uses 'strategies of inquiry' which best address the research questions and involves either simultaneous or sequential data collection (Cresswell, 2003): researchers often identify a lead strategy to initiate the research and a follow-up approach to widen the investigation (Bryman, 2012). This type of 'embedded'

design was selected for addressing the research questions. A quantitative strategy was employed in the first phase of the research (Study One) to examine the short-term effectiveness of Pyramid on socio-emotional and school performance outcomes (**RQ1** and **RQ2**: section 3.3.1.). This was followed by a qualitative strategy (Study Two) which served a dual purpose: triangulation of method (to challenge or confirm the quantitative findings) and also, to investigate the active components of Pyramid that influence behaviour change (**RQ3**: section 3.4.1.). A second quantitative study (Study Three) concluded the research with a follow-up study of longer-term impact on socio-emotional and school performance outcomes (**RQ1** and **RQ2**).

The current evaluation framework, couched within a critical realist perspective, incorporated both quantitative and qualitative methods to robustly address specific research questions. The research strategy and methods which provided the framework for the current evaluation of Pyramid are illustrated in *Figure 3.1*.

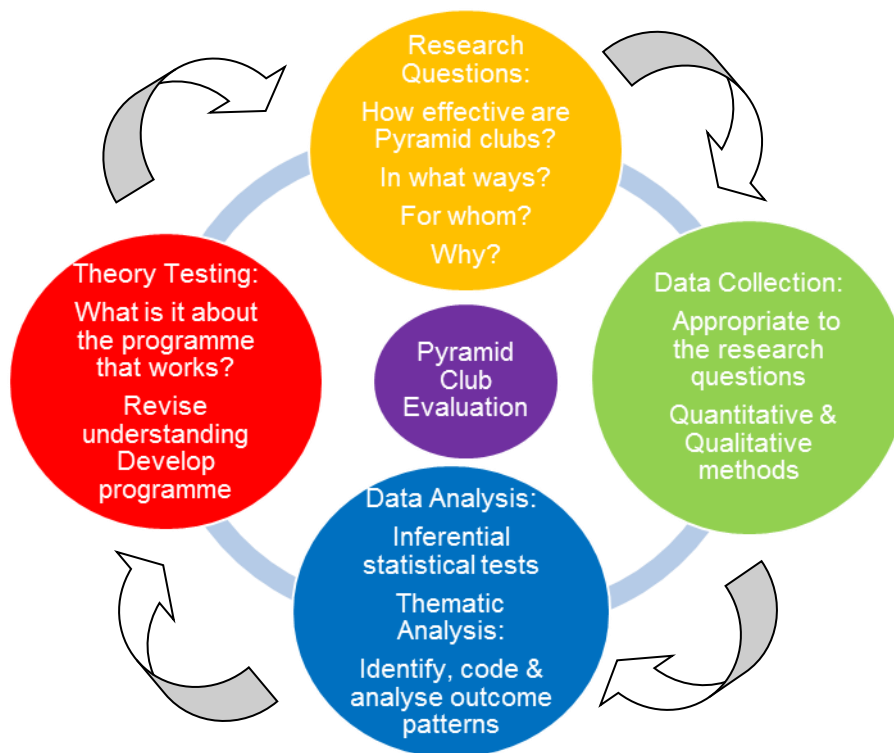


Figure 3.1: A mixed methods approach: adapted from Pawson and Tilley (2004)

3.3. The quantitative phase of the current research

3.3.1. Aims of the quantitative phase of the research

Pyramid club evaluations in primary schools (i.e. Ohi et al., 2012; 2008; McKenna et al., 2014) have provided robust evidence for intervention effectiveness in improving socio-emotional well-being for vulnerable pupils (7- to 8-years) (Clarke, 2015) and further studies (e.g. Cassidy et al., 2014; Lyons & Woods, 2012) support Pyramid's efficacy with transition-aged children (10- to 11-years). However, evidence for effectiveness with older children is not well established: no evaluations of Pyramid secondary school clubs (for pupils aged 11- to 14-years, encompassing the upper end of the age range the intervention supports) were found in the literature (section 2.4.). The current research aimed to address this gap in the evidence base. The first objective of the quantitative

phase was to examine if Pyramid is an effective intervention for pupils in early secondary education by replicating the design of primary school club evaluations.

The quantitative phase also aimed to expand the scope of the evidence on Pyramid's effectiveness by investigating impact on other domains, specifically school performance. In line with the primary aim of Pyramid, the majority of the Pyramid evaluation literature has focused on a single outcome (socio-emotional well-being) and whilst a handful of studies have examined additional outcomes (e.g. Cooper, 2001; Davies, 1999; Headlam Wells, 2000; Skinner, 1996) the evidence is not robust (section 2.4.3.) and studies are based exclusively on primary school clubs. While some wider literature (e.g. Durlak et al., 2011) supports the impact of improved socio-emotional competencies on other domains (including school performance outcomes) at all educational levels, evidence in this respect for Pyramid is lacking. Therefore, a second objective of the quantitative phase was to examine if Pyramid impacts on the school performance of club attendees.

The quantitative phase addressed the research questions:

RQ1: Does the Pyramid intervention impact on the socio-emotional health of pupils in early secondary education?

RQ2: Does the Pyramid intervention impact on early secondary-aged pupils' school performance?

3.3.2. Design of the two quantitative studies

3.3.2.1. Study One: the short-term impact of Pyramid

Study One examined the short-term effectiveness of Pyramid with the target population. A quasi-experimental, non-equivalent groups design investigated the short-term effect of

Pyramid on the socio-emotional well-being of pupils aged 11- to 14-years and their school performance.

A 2 x 2 mixed model design was implemented. The group type (intervention or comparison) constituted the between groups factor and time point (baseline or post-test: within two weeks post the intervention) the within group factor. Within and between group differences were examined at baseline (Time 1: T1) and post-test (Time 2: T2) on outcome measures of socio-emotional well-being: the Strengths and Difficulties Questionnaire (SDQ: Goodman, 1997; Goodman et al., 1998) and the Well-Being Questionnaire (WBQ: New Philanthropy Capital; NPC, 2010) (section 3.3.4.1.). Outcome measures of school performance were: ability self-concepts in English and Mathematics, and National Curriculum (NC) levels for England and Wales in English and Mathematics (section 3.3.4.2.).

3.3.2.2. Study Three: the longer-term impact of Pyramid

Study Three was a 12-month follow-up study of the participants from Study One and repeated the same quasi-experimental, non-equivalent groups design to examine longer-term impact of Pyramid on pupils' socio-emotional well-being and school performance.

A 2 x 3 mixed model design was implemented with the group type (intervention or comparison) as the between groups factor and time point (T1, T2, or 12-month follow-up, Time 3: T3) as the within group factor. Within and between group differences were examined at the three time points on two outcome measures: SDQ (Goodman, 1997) and NC levels in English and Mathematics. The design for Study One and Study Three is summarised in *Table 3.0*.

Table 3.0: Study One and Study Three: quantitative research phase

Between groups factor: group type	Within group factor: time point		
	Baseline (T1) measures	Post-test (T2) measures	12-month follow-up (T3) measures
Pyramid (intervention) group	SDQ: informant-rated version SDQ: self-report WBQ English and Mathematics ability self-concepts English and Mathematics NC levels	SDQ: informant-rated version SDQ: self-report WBQ English and Mathematics ability self-concepts English and Mathematics NC levels	SDQ: informant-rated version English and Mathematics NC levels
Matched comparison group	SDQ: informant-rated version SDQ: self-report WBQ English and Mathematics ability self-concepts English and Mathematics NC levels	SDQ: informant-rated version SDQ: self-report WBQ English and Mathematics ability self-concepts English and Mathematics NC levels	SDQ: informant-rated version English and Mathematics NC levels

SDQ: Strengths & Difficulties Questionnaire; WBQ: Well-Being Questionnaire; NC: National Curriculum

3.3.3 Sampling and participant recruitment: Quantitative phase

Participant recruitment involved gaining access to schools implementing the Pyramid intervention at secondary education level in England or Wales. Information was requested from the National Pyramid Club Coordinator to establish the sampling frame. The number of potential schools to recruit for the current research was restricted to the limited number of secondary schools delivering the Pyramid programme during the academic years 2013/2014 and 2014/2015. The number of confirmed clubs was: 10 in 2013/14 (six in England, four in Wales) and six in 2014/15 (three in England, three in Wales).

Schools were recruited by the researcher with the support of local Pyramid Coordinators (one in England and one in Wales). Headteachers received a letter summarising the research aims and commitment required from schools, and requesting an expression of interest in running a Pyramid club and participating in the research. Meetings were arranged with key staff from each interested school to discuss the project. Eight mixed comprehensive schools agreed to participate in the research (none of which had previously hosted a Pyramid club). Four schools agreed to run a Pyramid club and participate in the research during the academic year 2013/2014 and a further four during the academic year 2014/15.

All pupil participants were currently on school roll in year 7, 8 or 9 and aged 11- to 14-years-old (section 4.1.3.). Following the screening procedure (section 2.3.1.) pupils were allocated to the Pyramid (intervention) group or a matched comparison (non-intervention) group. Sufficient Pyramid places were available so a wait-list comparator was rejected. Participants were matched by age, gender, socio-economic status (eligibility for free school meals: FSM) and equivalent or similar (within one sub-level) working levels in English and Mathematics (based on NC levels).

A statistical power analysis was performed for sample size estimation using G*Power 3 (Faul, Erdfelder, Lang, & Bucher, 2007). With an alpha at .05 and 80% power, the projected sample to detect a medium effect size ($d = .5$) for a mixed model analysis of variance (ANOVA) was $N=86$. It is recommended, however, when determining minimum sample size with factorial designs such as ANOVA (conducted in Studies One and Three), identifying which of the possible significance tests are most important (McCrum-Gardner, 2008). In the current research, the most pertinent comparison was the within group difference on socio-emotional and school performance outcomes over time (the paired t-test: to compare two sample means where there is a one-to-one correspondence between

the samples and the distribution of within pair differences is approximately normal). A priori power analysis using G*Power 3 (Faul et al., 2007) indicated that a total sample of 27 participants would be required to detect a medium effect size ($d = .5$) for a within participants t-test with alpha at .05 and 80% power.

3.3.4. Measures implemented in the current research

Pupil level data were collected on gender, ethnicity and socio-economic status (SES). Ethnic categories reflected standardised classifications used by the Office for National Statistics (ONS) for decennial censuses. Guidance for analysts suggests the use of higher level ethnic categories to suitably combine groups (ONS, 2013). In the current research the 10 original categories were collapsed into four for relevant analyses: White, Black, Asian and Mixed. Eligibility for free school meals (FSM) was used as a proxy measure of SES, a commonly used indicator in educational research. FSM data are readily available and the measure performs well in comparison to other potential SES measures (Sutherland, Ilie, & Vignoles, 2015).

3.3.4.1. Socio-emotional well-being measures

The measures were: the Strengths and Difficulties Questionnaire informant-rated version (SDQ: Goodman, 1997) (*Appendix A*), the Strengths and Difficulties Questionnaire self-report for 11- to 17-year-olds (SDQ: Goodman et al., 1998) (*Appendix B*), and the self-report Well-Being Questionnaire (WBQ: New Philanthropy Capital: NPC, 2010) (*Appendix C*).

3.3.4.1.1. The Strengths and Difficulties Questionnaire (SDQ)

The SDQ is a brief screening tool to detect emotional and behavioural disorders in children and adolescents (aged 2- to 17-years); prior to June 2014 the recommended

lower age for use was four years (<http://www.sdqinfo.com>). Based on the child behavioural questionnaires originally developed by Rutter (1967), it is designed to measure psychological adjustment (Goodman, 1997) and is widely used internationally, cross-culturally and in community studies for screening and epidemiological, developmental and clinical research (Stone, Otten, Engels, Vermulst, & Janssens, 2010).

The SDQ has been well validated in the UK (Goodman, 1997; 1999; 2001; Goodman & Goodman, 2011) and in a number of culturally diverse countries including: Australia (Hawes & Dadds, 2004); Germany (Klasen et al., 2000); Sweden (Smedje, Broman, Hetta, & von Knorring, 1999), and Bangladesh (Mullick & Goodman, 2001).

As a measurement tool the SDQ is relatively brief, user friendly and simple; taking (on average) five minutes to complete (Klasen, et al., 2000). In comparison, the Child Behaviour Checklist (CBCL: Achenbach, 1991a), although a well-established, reliable and valid assessment of child and adolescent problems (Achenbach & Rescorla, 2001), is a more extensive scale: 113 items with two open-ended questions for reporting additional concerns and enabling detailed assessment. Whilst the CBCL is often considered the 'gold standard' measurement tool for psychopathology and in-depth assessments, the SDQ's brevity and simplicity provides a viable alternative for screening purposes (Goodman & Scott, 1999; Stone et al., 2010), and, therefore, a practical and effective measure for identifying pupils for the Pyramid intervention.

The SDQ has demonstrated convergent validity with the CBCL (Achenbach 1991a; Goodman & Scott, 1999), the Youth Self-Report (YSR) (Achenbach, 1991b; Klasen et al., 2000), and the Rutter questionnaire from which it was originally developed (Elander & Rutter, 1996; Goodman, 1997). It is reported to discriminate effectively between CYP with

and without psychopathological symptoms (Goodman, 1997, 2001; Goodman, Renfrew, & Mullick, 2000b).

Designed as a multiple informant instrument, SDQ completion can be by proxy (parent or teacher) or by CYP themselves (11- to 17-year-olds) (Goodman, 1999; Goodman et al., 2000a). Both strengths and difficulties are assessed and the inclusion of positive and negative items is considered particularly pertinent in general population studies where the majority of respondents are healthy (Van Roy, Veenstra, & Clench-Aas, 2008). Thus, the SDQ is a useful instrument in research focused on individual vulnerability and resilience (Ruchkin, Kuposov, & Schwab-Stone, 2007), is applicable in both clinical and community environments and can be implemented to identify clinical psychopathology as well as less severe emotional and behavioural difficulties.

In the UK the SDQ is widely used in schools and the NHS and there are different versions to meet the varying professional needs of researchers, clinicians and educationalists (www.sdqinfo.com). The basic questionnaire (without the impact supplement or follow-up questions) consists of 25 items, divided equally across subscales in five domains: emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems and prosocial behaviour. Some items are worded positively (e.g. 'Considerate of other people's feelings') and others negatively (e.g. 'Many worries, often seems worried').

SDQ items are rated on a three-point Likert scale: 0 = Not True, 1 = Somewhat True and 2 = Certainly True. Positively stated items are reverse-scored (i.e. a higher rating indicates a higher level of difficulty). Four of the subscales: emotional symptoms, conduct problems, hyperactivity/inattention and peer relationship problems, can be described as

either a strength or difficulty depending on the child's score. The combined score of these four subscales identifies a total difficulties (TD) rating (indicating the severity of psychosocial concern). The fifth subscale, prosocial behaviour demonstrates the degree to which the child or adolescent displays prosocial characteristics. The prosocial subscale, unlike the other subscales, is not rated in the reverse direction as the absence of prosocial behavior is deemed conceptually distinct from the presence of psychological difficulties (Goodman, et al., 1998). Summed scores are compared to cut-off scores provided for each subscale which are based on UK normative data (Meltzer, Gatwood, Goodman, & Ford, 2000). TD scores range from 0-40 and are categorised into three bands: 'normal' (0-11), 'borderline' (12-15), and 'abnormal' (16-40) (*Table 3.1.*). In the current research 'informant' refers to either a teacher or member of school staff who knows the pupil well (for example, the Pastoral Manager). An updated four-fold classification index which separates the 'abnormal' band into two bands of 'high' and 'very high' is available at: www.sdqinfo.com (*Table 3.1.*).

Table 3.1: Banding ranges for informant-rated SDQ scores for 4- to 17-year-olds

Informant-rated score	Original three-band categorisation			Four-band categorisation			
	Normal	Borderline	Abnormal	Close to average	Slightly raised	High	Very High
Subscale							
Conduct problems	0-2	3	4-10	0-2	3	4	5-10
Hyperactivity /inattention	0-5	6	7-10	0-5	6-7	8	9-10
Prosocial behaviour	6-10	5	0-4	6-10	5	4	0-3
Emotional symptoms	0-4	5	6-10	0-3	4	5	6-10
Peer relationship problems	0-3	4	5-10	0-2	3-4	5	6-10
Total difficulties	0-11	12-15	16-40	0-11	12-15	16-18	19-40

An extensive body of evidence exists on the psychometric properties of the SDQ which demonstrate its validity, reliability and sensitivity to change, thus satisfying the criteria set for a standardised measure (Hobbs & Ford, 2012). A review by Stone et al. (2010) of 48 studies concluded that overall the SDQ exhibited 'strong' psychometric properties. This was consistent with previous findings from both community (Koskelainen, Sourander, & Kaljonen 2000) and clinical (Becker, Woerner, Hasselhorn, Banaschewski, & Rothenberger, 2004) samples. The review by Stone et al. demonstrated satisfactory reliability over time for informant raters and identified good internal consistency on the TD scale ($\alpha > .07$). Inter-rater agreement between parents and teachers was also relatively high on the TD scale. However, results for reliability and validity for both raters (but particularly parents) at the subscale level were demonstrably weaker, albeit acceptable. This was most notable on prosocial behaviour and peer difficulties. The authors concluded that interpreting subscale results independently should be done with caution. Modest levels of internal reliability for the SDQ subscales have been found in previous

studies (Muris, Meesters, & van den Berg, 2003; Palmieri & Smith, 2007). Nevertheless, Stone et al. concluded that as a screening tool the SDQ performs, 'very well' and is a valuable contribution to the set of measures for early detection of child and adolescent psychopathology.

Normative data for the SDQ from countries including Britain, North America and Australia have been widely reported (e.g. Bourdon, Goodman, Rae, Simpson, & Koretz, 2005; Mellor, 2005; Meltzer, et al., 2000). Previous, quality evaluations of Pyramid primary school clubs (McKenna et al., 2014; Ohi et al., 2012; 2008) have utilised the SDQ as a single outcome measure and have demonstrated significant findings, comparing study data to UK norms. A strength of implementing the SDQ informant-rated measure in the current research is the potential to replicate previous research findings, augmenting the current evidence base by showing the positive impact of Pyramid on the socio-emotional health of vulnerable young people aged 11- to 14-years. Moreover, as it is used as a screening tool for Pyramid club it does not add to the burden on schools.

Support for the effectiveness of Pyramid with primary-aged children has predominantly emanated from evidence derived from adult informants. This is explained by the minimum age recommendation for the use of self-report measures, including the SDQ. However, the SDQ self-report version for 11- to 17-year-olds (Goodman et al., 1998) was used in a study with 11-year-old transition club participants (Cassidy et al., 2014) in addition to teacher-rated SDQs. The age range of participants in the current study (11- to 14-years) was appropriate for including the SDQ self-report version and provided the opportunity to scrutinise cross-informant results, and gather data directly from young people themselves. In mental health assessment multi-informant data are heralded as the standard criterion and by collecting reports from different informants, one expects that psychopathology can be more accurately and reliably determined (Stone et al., 2010).

As psychosocial problems can be context specific, information gleaned from multiple informants is considered a more robust application of the SDQ (Goodman et al., 2000a; Stone et al., 2010). Parents may have limited knowledge of their child's emotional issues and typically report less depressive and anxiety symptoms than self-report measures tend to yield (Angold, 1989). Furthermore, teachers are usually regarded as good informants regarding externalising issues e.g. school behaviour and conduct. A number of researchers have found multiple informants to agree moderately at best and Achenbach (2005) suggests results from different informants may not be interchangeable but potentially provide specific information: limited cross-informant agreement does not necessarily reflect a lack of valid judgement by one informant but rather demonstrates how raters report uniquely different information (Karver, 2006).

Self-report measures are considered a primary method for gathering health related quality of life data from children once they have reached a certain age and level of cognitive development (Ravens-Sieberer et al., 2006). Adolescent self-report data are important as young people's perception of their own problems may be different from their parents' and teachers' views (Van Roy, Groholt, Heyerdahl, & Clench-Aas, 2006). The self-report version of the SDQ is recommended for use with young people aged 11- to 17-years (prior to June 2014 the recommended upper age for use was 16) (Goodman, 1999; Goodman et al, 2000a). This version of the SDQ differs grammatically from the informant-rated one, substituting the third person with the first person (e.g. 'I worry a lot'). There are some minor vocabulary differences to assist younger respondents' comprehension (e.g. 'I am usually on my own. I generally play alone or keep to myself' instead of, 'Rather solitary, tends to play alone'). The close correspondence of the two versions was designed to enhance the comparability of scores from different informants. As with the informant-rated questionnaire, summed scores are compared to cut-off scores provided for each subscale. Total difficulties scores from 0-40 are categorised into the three 'caseness'

bands: 'normal' (0-15), 'borderline' (16-19), and 'abnormal' (20-40). Cut-off points for categorising difficulties are based on normative data and thresholds are higher for the self-report version (*Table 3.2.*) than for the informant-rated version.

Table 3.2: Banding ranges for self-report SDQ scores for 11- to 17-year-olds

Self-report score	Original three-band categorisation			Four-band categorisation			
	Normal	Borderline	Abnormal	Close to average	Slightly raised	High	Very High
Subscale							
Conduct problems	0-3	4	5-10	0-3	4	5	6-10
Hyperactivity /inattention	0-5	6	7-10	0-5	6	7	8-10
Prosocial behaviour	6-10	5	0-4	7-10	6	5	0-4
Emotional symptoms	0-5	6	7-10	0-4	5	6	7-10
Peer relationship problems	0-3	4-5	6-10	0-2	3	4	5-10
Total difficulties	0-15	16-19	20-40	0-14	15-17	18-19	20-40

Satisfactory levels of cross-informant agreement between self-report scores and proxy (e.g. teacher or parent) scores on the SDQ have been established in clinical and community samples (Goodman et al., 1998; Mathai, Anderson, & Bourne, 2002; Mellor, 2004). Moreover, these results compare favourably with cross-informant correlations obtained from other psychopathology measures, including the CBCL and the YSR (Goodman, 1997; 2001; Goodman et al., 1998; Van Widenfelt, Goedhart, Trefers, & Goodman, 2003). Studies by Muris et al. (2003) and Muris, Meesters, Eijkelenboom and Vincken (2004), using large non-clinical samples, demonstrated acceptable levels of self-report and teacher-rated SDQ agreement. Likewise, research by Becker, Hagenberg, Roessner, Woerner and Rothenberger (2004) found acceptable correlations between self-

report and proxy-rated versions with a clinical sample. This led the researchers to conclude that the self-report version of the SDQ was a reliable and valid method of assessment for CYP (aged 11- to 17-years) in the absence of adult informant results.

Vierhaus and Lohaus (2008) maintain that parent and child/adolescent agreements tended to be higher for externalising rather than internalising issues and that non-clinical samples typically described themselves as having more behavioural problems than reported by parents (the opposite pattern was found in clinical samples). Whilst CYP may experience psychopathology unknown to their parents, it is also possible that self-reports are embellished (Vierhaus & Lohaus, 2008). It is unlikely self-report measures reflect psychopathological individual differences free from bias (Tourangeau, Rips, & Rasinski, 2000). Nonetheless, Stone et al. (2010) maintain a multi-informant strategy should always be prioritised when implementing the SDQ as results from a single informant may not generalise to other contexts. In the current study, both informant-rater and self-report versions were included to address this limitation.

The SDQ prediction of emotional and behavioural disorders is deemed most effective when all possible informant ratings are included (Goodman et al., 2000a). Goodman et al. demonstrated that a predictive algorithm based on multi-informant SDQs was able to detect psychiatric disorders in a large community sample (N=7,984) of 5- to 15-year-olds with 'reasonable efficiency'. The authors conceded that whilst multi-informant ratings are the most effective predictors, SDQs completed by parents and teachers are generally better at predicting psychopathology than adolescent self-reports. However, for emotional disorders, self-report data are as comparably sensitive as teacher data (but less so than data collected from parents). Van Roy et al. (2008) with another large community sample (N=6,645) demonstrated that self-report data discriminated more on ratings of emotional and peer problems whereas proxy reports differentiated better on hyperactivity symptoms.

The authors concluded that internalising issues were identified more accurately by self-report than by parent or teacher report which is in line with previous research findings (e.g. Edelbrock, Costello, Dulcan, Kalas, & Calabro-Conover, 1985; Ederer, 2004). As Pyramid specifically targets internalising issues (e.g. anxiety, social withdrawal) data on emotional difficulties are particularly relevant to the current study: including both adult and pupil raters enabled cross-informant results on subscales pertinent to the intervention (i.e. those that map onto internalising issues) to be scrutinised.

The SDQ has demonstrated its robust practical application as a screening tool: it has a good ability to discriminate psychopathology (consistent with the CBCL) in children and adolescents from both clinical and community populations (Stone et al., 2010). However, a consideration of the setting (clinical or community) is imperative when using the SDQ (Stone et al., 2010). Within a community population the presence of some but not all psychosocial problems can be assumed. Consequently, the SDQ should be particularly sensitive in identifying those most at risk of developing psychosocial issues.

Nevertheless, the number of CYP in a community sample scoring within the clinical range will be typically developing: the propensity for false positives to appear in the data is due to low prevalence rates of psychopathology in the general population (Stone et al., 2010). The opposite pattern emerges with clinical samples (where prevalence rates are higher) and more false negatives occur. Accuracy levels are, therefore, subject to variation depending on prevalence rates in particular populations. One suggested method to address this concern is the employment of more than one diagnostic instrument, a strategy adopted in the current research.

3.3.4.1.2. The Well-Being Questionnaire (WBQ)

Recent, quality evaluations of Pyramid in primary schools (i.e. McKenna et al., 2014; Ohi et al., 2012; 2008) have relied on a sole informant, single outcome measure (the

informant-rated SDQ). To address this methodological limitation (and consistent with other studies e.g. Cassidy et al., 2014; 2015; Lyons & Woods, 2012), a second outcome measure to assess socio-emotional well-being was implemented in Study One. The Well-Being Questionnaire (WBQ: NPC, 2010) is a self-rated indicator of subjective well-being and, as well as the SDQ self-report, allowed data to be collected directly from the young people themselves.

The WBQ was designed to provide a psychometrically robust and practical tool to measure the impact of small group interventions. It gathers self-report data from young people (aged 11- to 16-years) regarding how they feel about different aspects of their life and is described as a 'simple and reliable' way to measure changes in well-being (<http://www.well-beingmeasure.com>). It works on averages for groups (10 or more participants) and provides information about a cohort, rather than an individual. The WBQ allows comparisons with UK normative data derived from a sample of 6,603 young people (3,047 girls and 3,556 boys) collected between 2009 and 2013 (Finch, Hargrave, Nichols, & van Vliet, 2014).

Using subjective indicators of well-being (based on individual self-reports) is increasingly recognised as imperative for supplementing objective measures (Statham & Chase, 2010). The WBQ gauges a young person's perspective on aspects of their life related to well-being across situations and settings. These aspects are divided into subscales: self-esteem, emotional health, and resilience (measures associated with feelings about the self), and satisfaction with friends, family, school, and community (measures associated with feelings about experiences). Young people are also asked about general life satisfaction (a measure of overall life satisfaction). Participants are asked to say how much they agree or disagree with a number of statements (10 items for the self-esteem subscale and five for each of the remaining subscales) and can choose from a five-point

Likert scale, ranging from 'strongly disagree' (0) to 'strongly agree' (4). Both positively worded statements (e.g. 'I can do things as well as most other people') and negatively worded statements (e.g. 'I worry a lot') are included. The overall life satisfaction measure is scored from 0 to 10. Scores for the eight scales are summed individually: a higher score indicates a greater level of well-being within that domain. The WBQ takes approximately 10 minutes to complete (manually or online).

Nevill & Ni Ogain (2009) showed that the WBQ had good face and predictive validity on aspects of subjective well-being. Across five interventions included in a pilot study, 754 young people completed the questionnaire at baseline and 531 at follow-up. All seven well-being subscales demonstrated a minimum Cronbach's alpha and test-retest reliability of 0.7. The sensitivity of the WBQ to change was tested using data from one intervention in the pilot study and effect sizes from baseline to follow-up ranged from 0.2 to 0.8. The authors concluded that the WBQ was a robust tool capable of detecting significant changes in aspects of well-being across various types of intervention. Feedback from the charities involved in the pilot research was positive, describing the WBQ as practical and easy to use.

In addition to the standard 41 items, the WBQ permits up to six supplementary questions relating to the specific intervention being evaluated. In Study One, two pre-intervention questions relating to participants' thoughts and expectations pre-club (baseline measure) and two post-intervention questions relating to participants' thoughts and experiences post-club (post-test measure) were added to the WBQ (Pyramid group only). The pre-club questions (participants were permitted to choose one or more response) were:

- *When you were invited to join Pyramid club, how did that make you feel?*
Worried/Happy/Uncertain/Suspicious/Pleased/Neutral/Curious

- *What are you hoping to get out of the Pyramid club?*

Make new friends/Improve my confidence/Have fun/Not sure/Do better in school/Become less worried about life/Learn something new/Try new things

The post-club questions (participants were permitted to choose one or more response) were:

- *How would you describe your experience of going to a Pyramid club?*

I learnt new things/It was a waste of time/It was a good way to meet new people/It has helped me to enjoy school more/It has made me enjoy school less/It made me think more about myself and my life/It was hard at first but I enjoyed it in the end

- *How do you think going to a Pyramid club has changed you as a person?*

I'm more confident now/I find it easier to talk to people/I'm more likely to get involved in activities/It has made no difference at all/It has made me more anxious/I'm happier in school now/I like school even less/I'm more adventurous and willing to try new things

It was planned that participants' responses to these items would provide preliminary evaluation feedback, to be considered in relation to the quantitative results and to highlight areas to explore in the qualitative phase of the research. Key observations contributed to the development of questions for the focus groups (section 3.4.4.1).

The remaining four supplementary questions on the WBQ related to pupils' ability self-concepts in English and Mathematics (academic well-being) (section 3.3.4.2.1.). Data from all six supplementary questions were treated separately and did not affect the scoring of the WBQ.

3.3.4.2. School performance measures and rationale for inclusion

School performance is measured using four outcome measures: subject ability self-concepts in English and Mathematics, and National Curriculum levels in English and Mathematics. It has been argued that the impact of Pyramid on domains other than socio-emotional well-being is under-investigated (section 2.4.5.) which this research aims to address. Furthermore, the current policy and funding climate in the UK provided an impetus to examine the effect of Pyramid on pupils' school performance (section 1.1.). A growing body of research indicates that socio-emotional competencies are linked to current and prospective academic levels and attainment scores (e.g. Durlak et al., 2011). Moreover, pupils who interact well with their peers and have positive relationships exhibit academically more engaged attitudes and behaviours (Caprara, Barbaranelli, Pastorell, Bandura, & Zimbardo, 2000).

Some researchers (e.g. Eccles & Roeser, 2011) suggest that academic and social stressors particularly prevalent during early adolescence can increase the risk of school disengagement, reduced academic motivation and underachievement. Conversely, 'academic enablers' are described as attitudes and behaviours which permit pupils to engage and benefit from the learning environment (DiPerna & Elliot, 2002). Longitudinal research examining the relationship between academic self-concept and academic achievement has shown they are reciprocally connected over time (Marsh & Martin, 2011; Marsh, Xu, & Martin, 2012). Furthermore, if a pupil's self-concept is enhanced they will show a subsequent rise in achievement level compared to an academically matched peer (Ghazvini, 2011). Enhanced self-concept is a potential 'academic enabler', impacting on a pupil's school performance. Ability self-concept can be used as an outcome measure and may detect short-term change (before the impact of an intervention has cascaded sufficiently to be discernable on a pupil's test scores or academic working levels).

3.3.4.2.1. Subject domain ability self-concepts

A brief measure of subject ability self-concept (academic well-being) was included on the WBQ. Academic self-concept refers to an individual's belief regarding their ability in a particular academic area (e.g. Mathematics) and reflects both descriptive (e.g. I like Mathematics) and evaluative (e.g. I am good at Mathematics) characteristics.

Researchers have measured academic self-concept using multidimensional instruments, for example, the Academic Self-Description Questionnaire (ASDQ-II) (Marsh, 1990) and the Patterns of Adaptive Learning Scales (PALS) (Midgley et al., 2000) which include scales pertaining to specific school subjects (e.g. Mathematics). Specific school subject scales have been adapted in studies such as the Programme for International Student Assessment (PISA) to measure subject domain ability self-concepts (Organisation for Economic Co-operation and Development (OECD), 2012). In a study with German school children (aged 9- to 15-years), Steffens, Jelenec and Noack (2010) utilised specific subject scales to gauge pupils' ability self-concepts (descriptive and evaluative elements) in Mathematics and German. Ratings were made on a five-point Likert scale and good internal consistency was demonstrated on both subject scales ($\alpha = .84$). These scales were adapted for the current research ('German' was replaced with 'English').

In the current research, specific school subject scales (which corresponded to the NC data collected i.e. English and Mathematics) were added as items on the WBQ. The four supplementary questions pertaining to ability self-concepts which appeared on the WBQ are presented in *Table 3.3*. Respondents indicated how much they agreed with each statement (the same five-point Likert scale ranging from 0-4 which was used to score the seven aspects of well-being was adopted (section 3.3.4.1.2.)). Scores were summed individually for English and Mathematics, a minimum score of 0 to a maximum score of 12, with a higher score indicating a stronger ability self-concept in the corresponding domain.

Table 3.3: Ability self-concept items added to the Well-Being Questionnaire

Subject domain	Descriptive component (1-part item)	Evaluative component (2-part item)
Mathematics	I like Mathematics	I am good at Mathematics I learn things quickly in Mathematics
English	I like English	I am good at English I learn things quickly in English

3.3.4.2.2. National Curriculum (NC) levels in English and Mathematics

As reported (section 2.4.3.), a subset of Pyramid club Year 3 studies have examined the impact of Pyramid on school performance. These have predominantly relied on teacher reports or researcher observations e.g. progress in writing (Davies, 1999; Skinner, 1996), progress in Mathematics (Headlam Wells, 2000), and social skills and academic improvement at secondary school (FitzHerbert, 1985). A methodological limitation of these studies which has already been discussed (section 2.4.3) is their vulnerability to informant bias. Evidence from the wider literature, extensively from the USA (e.g. Durlak et al., 2011; Vidair et al., 2014), identified that formal test scores and standardised academic levels are common objective measures of academic performance used in socio-emotional intervention evaluations. Standardised academic measures have also been used in UK evaluation studies (e.g. Challen et al., 2010; 2011; Keogh et al., 2006; Scott Loinaz, 2014) (Table 1.0). National Curriculum levels in English and Mathematics were used in the current study as an objective measure of academic performance. Each of the eight participating schools provided NC data (English and Mathematics levels only) for the Pyramid and comparison groups.

3.3.5. Potential moderators of the Pyramid intervention

Intervention effectiveness studies in real world settings (e.g. schools) involve participants who present individual level characteristics that potentially attenuate or modify an intervention's impact e.g. gender, ethnicity, socio-economic status (SES). Interventions may, therefore, require adaptation to maximise the benefits gained by specific subgroups (Durlak, 2015; Walker & Gresham, 2014). In the current study, gender, ethnicity and SES were investigated as potential moderators to examine Pyramid's effectiveness across sub-populations and to replicate findings from primary school studies.

Primary school evaluations (e.g. Ohi et al., 2012; 2008) have demonstrated effectiveness across gender, ethnic and socio-economic groups. However, the influence of gender on socio-emotional development (with specific regard to a pre- to mid-adolescent population) has led some researchers (e.g. DePauw & Glass, 2008; Garaigordobil, Maganto, Perez, & Sansinenea, 2009) to advocate a gender sensitive approach to mental health prevention programmes which could include modifications or gender specific supplementary modules. Existing research shows a distinct gender pattern in mental health after the age of 13-years (WHO, 2011). Girls overall report more mental health problems than boys (Myrin & Lagerström, 2008) and are more likely to present with internalising behaviours (depressive symptoms and anxiety) (Gutman et al., 2015), whilst externalising and substance use disorders are higher among boys (Seedat et al., 2009). Fink et al. (2015) identified that self-reported emotional symptoms were higher among girls than boys in a large sample of English secondary school pupils (N=3,336) and a report published the same year (The Children's Society, 2015) described a persistent trend in low self-esteem amongst girls.

In the UK, data from almost 7,000 young people who completed the WBQ (Finch et al., 2014) between 2011 and 2014 revealed a number of gender disparities. Most prevalent

was the finding that well-being scores for females decreased more abruptly with age (across all aspects of well-being) compared with those of their male counterparts. According to the authors, emotional well-being in 11-year-old girls is already below that of 11-year-old boys; whilst well-being levels for boys remain relatively stable, for girls they continue to decline.

Moreover, several socio-demographic differences have been reported. For example, the prevalence of CYP's mental health problems shows a steep socio-economic gradient (Gutman et al., 2015), with those growing up in the poorest households three times more likely to develop problems than those from wealthier households (Thorley, 2016). Recent data have shown a correlation between the regions with the highest child poverty and those with the highest prevalence of CYP with mental health conditions (NHS England, 2016). In addition, ethnic disparities have been identified: mixed race children are more likely than any other ethnic group to be referred to CAMHS (Morley & Street, 2014) and there is also evidence to suggest differences in the prevalence of disorder type (Gutman et al., 2015). In line with gender and SES sensitivity, some researchers (e.g. Castro-Olivo, 2010; Huey & Polo, 2008) have highlighted the need to examine best practice in intervention implementation to ensure socio-emotional programmes are appropriate and valid for participants from ethnic and culturally diverse backgrounds.

3.3.6. Data analysis strategy for the quantitative phase

Analysis was undertaken using the Statistical Package for the Social Sciences (SPSS) Version 22 on the quantitative data collected from the outcome measures described (sections 3.3.4.1 and 3.3.4.2.). Data were first cleaned and checked for missing values. Exploratory data analysis (EDA) (Tukey, 1977) which: 'isolates patterns and features of the data and reveals these forcefully to the analyst' (Hoaglin, Mosteller, & Tukey, 1983, p1) was subsequently conducted. Descriptive statistics were calculated (means and

standard deviations) to summarise the data and identify trends. Data distributions were visually inspected (from histograms) for the whole sample and for each group (intervention or comparison) independently. Values of kurtosis and skewness, and the 5% trimmed mean were calculated, and the Kolmogorov-Smirnov test was conducted to test for normality. Positively skewed distributions have been identified in a number of community studies using the SDQ as a measure of well-being. This has prompted some researchers to implement strategies to address distribution abnormalities including data transformation (Ohl et al, 2012; 2008; Rønning, Hondegaard, & Sourander, 2004), and the alternative use of non-parametric tests (Woerner, Becker, & Rothenberger, 2004). However, other researchers (e.g. Muris et al., 2004), despite identifying significant skewness in some items on the SDQ have decided against introducing remedial action.

The objective of the quantitative strategy was to examine Pyramid's effectiveness and related specifically to two research questions:

RQ1: Does the Pyramid intervention impact on the socio-emotional health of pupils in early secondary education?

RQ2: Does the Pyramid intervention impact on early secondary-aged pupils' school performance?

Appropriate inferential statistical tests (Analysis of Variance: ANOVA and t-tests) were selected to examine significant effects on the outcome variables. The analysis examined within and between groups (Pyramid or comparison) differences on outcome measures at short-term (Study One) and 12-month follow-up (Study Three) to identify any significant changes over time. The alpha level (α) or significance was set at the .05 level. Typically, a level of .05 is acceptable for researchers to interpret a result as statistically significant (McQueen & Knussen, 2013). Whilst using a lower alpha reduces the likelihood of making

a Type 1 error, this benefit is offset by the corresponding reduction in power (Lipsey & Hurley, 2009). Therefore, on balance, the .05 level was deemed acceptable for the current analysis. To determine the magnitude of any significant findings, effect sizes were calculated. Guidelines proposed by Cohen (1988) were used to interpret the strength of effect size statistics for group comparisons (*Table 3.4.*) and correlational analyses (*Table 3.5.*).

Table 3.4: Effect size guidelines for group comparisons (Cohen, 1988)

Size	Eta squared (% of variance explained)	Cohen's <i>d</i> (standard deviation units)
Small	.01 or 1%	.20
Medium	.06 or 6%	.50
Large	.138 or 13.8%	.80

Table 3.5: Effect size guidelines for correlational designs (Cohen, 1988)

Size	<i>r</i> range
Small	.10 to .29
Medium	.30 to .49
Large	.50 to 1.0

Rosenthal (1996) added the classification 'very large' to include effects of 1.30 or above for group comparisons (Cohen's *d*), and effects of .70 and above for correlational designs (*r*). These classifications are referred to in the interpretation of effect sizes.

3.4. The qualitative phase of the current research

3.4.1. Aims of the qualitative phase of the research

The aims of the qualitative strategy were to address gaps in the extant literature: firstly, the absence of effectiveness studies examining Pyramid secondary school clubs (thus augmenting the quantitative strategy) and secondly, the lack of evaluations which consider the components of specific interventions underlying behaviour change. The first

objective of the qualitative phase was to scrutinise the quantitative findings through method triangulation and gather supporting or disconfirming evidence. Moreover, method triangulation was anticipated to deepen and widen the researcher's understanding of the quantitative outcomes derived from **RQ1** and **RQ2**.

A second objective of the qualitative strategy was to investigate the active components of Pyramid and unpick the underlying mechanisms of behaviour change. It is widely acknowledged that the service users' perspective is critical to an understanding of both intervention effectiveness and the change process (e.g. Moore et al., 2015; Pawson & Tilley, 2004). A qualitative strategy was implemented to give a 'voice' to the participants (service users and club leaders) and elicit rich 'emic' data, capturing participants' indigenous meanings of real-world events (Yin, 2010). Therefore, the qualitative phase was also directed at addressing **RQ3**: What are the elements involved in the Pyramid intervention that bring about change in attendees?

3.4.2. Design of the qualitative study (Study Two)

A focus group method was implemented to gather data from service users (Pyramid attendees) and club leaders.

3.4.2.1. Rationale for a focus group method

Focus groups can be used at the end of an intervention or at longer-term follow-up as a 'confirmatory' (or 'disconfirming') tool (Bryman, 2012). Moreover, although not entirely naturalistic, focus groups offer an approximation of a natural interaction and provide rich, 'emic' data (arising in a natural or indigenous form), as distinct from 'etic' data (which reflects the researcher's own imposed view). Participants direct the flow of talk and social interaction (Kamberelis & Dimitriadis, 2013) and participants' perceptions of an

intervention's overall effectiveness can be captured. Focus group data can deepen and widen the researcher's understanding of the phenomena of interest (Barbour, 2007) and underlying processes can be 'unpicked'. Moreover, the attitudes, dispositions and outcomes of service users and other stakeholders (e.g. the delivery agent) can be extrapolated and suggestions for improvements and development can be fed back into the delivery model, contributing to 'real world' changes (Wyatt, Krauskopf, & Davidson, 2008).

Despite the apparent 'fit' with the objectives of the current qualitative strategy, there were reservations about the focus group method which required consideration. Although some individuals may feel more confident in a group research encounter, others may suppress or modify their true feelings. The group situation can prompt some individuals to dominate the discussion whilst silencing others and may be particularly salient with younger participants who are potentially competing for attention (Reay, 2006). CYP may also be inclined to 'follow the norm' in group discussions (Heary & Hennessy, 2006) rather than offer their true thoughts and feelings. Participants are influenced by the group's interaction and the opinions of others, therefore, the researcher needs to bear in mind that each focus group represents a single observation, not independent observations of composite members (Stewart & Shamdasani, 2014).

Such concerns are not limited to focus groups with minors and may also apply to group situations with adults. In the Pyramid club environment leaders are accorded equal status, however, outside of this setting status differentials may exist e.g. between school staff and sixth form students. This could influence individuals' participation in the focus group encounter e.g. with some participants more dominant in the discussion and others more deferential.

On the other hand, focus groups can provide a less intimidating and more supportive research encounter than one-to-one interviews (Kamberelis & Dimitriadis, 2013); a group can mitigate or inhibit the 'authority' of the researcher, addressing the issue of power differentials (a particular concern when collecting data from children) (section 3.5.). Moreover, in a group situation participants are more likely to 'own' the space in which data collection takes place, typically affording a 'richer, deeper understanding of whatever is being studied' (Kamberelis & Dimitriadis, 2013, p40). Listening to others can also be a helpful prompt for participants to recall their own experiences and articulate their thoughts (Stafford, Laybourn, Hill, & Walker, 2003). Furthermore, the verbal nature of the focus group method lends itself to gathering original ideas and insights, free from some of the data collection limitations of quantitative measures which are particularly relevant with younger participants e.g. literacy and reading levels.

The current researcher recognised the crucial role of the focus group facilitator: to encourage all participants to respond in their own terms while simultaneously ensuring the focus of the group is maintained. This procedure was applied consistently to focus groups with Pyramid attendees and club leaders, however, the researcher acknowledged that specific care should be taken to ensure sessions with CYP are conducted effectively and sensitively (Kamberelis & Dimitriadis, 2013). All the participants knew each other from their Pyramid club and were accustomed to regularly convening as a small group. The focus group format (e.g. chairs arranged in a circle, everyone encouraged to speak and listen to others) was a similar style to that encountered in Pyramid circle time (a weekly component of club sessions). It was anticipated that the familiarity of fellow focus group participants and the location and set-up of the research space would be conducive to encouraging full participation in the discussion.

3.4.3. Sampling and participant recruitment: focus groups

All Pyramid attendees and club leaders at the eight schools in the quantitative phase were invited to participate in an attendee or club leader focus group. Club leaders from one school were unable to attend and responses were provided via email.

3.4.4. Qualitative data collection

One focus group per participating school was arranged on school premises during school hours for Pyramid attendees. Efforts were made to cause minimum disruption to the timetable, avoid times when pupils were likely to be tired and acquire a space where participants would be comfortable and not distracted. All eight sessions took place within two weeks of clubs finishing and were facilitated by the researcher. Each session was approximately 30 minutes which was commensurate with the number of focus group questions and within the maximum duration recommended for focus groups with CYP (Heary & Hennessy, 2006).

Four sessions for club leaders were held on school premises at the respective school where the club had taken place and immediately followed the focus group held with Pyramid attendees. A further three sessions were convened at the University of West London in a meeting room. The seven sessions were facilitated by the researcher and all data were collected within three weeks after completion of the club at each respective school. Sessions were approximately 45 minutes which was commensurate with the number of focus group questions and availability of club leaders.

3.4.4.1. Development of focus group protocols and questions

To guide the qualitative data collection and ensure ethical procedures were adhered to a focus group protocol was developed: one for young people (*Appendix D*) and one for club leaders (*Appendix E*). The protocol script for Pyramid attendees, although similar to the

leader one, was adapted to enhance comprehension. Questions for Pyramid club attendees (*Appendix F*) and club leaders (*Appendix G*) were developed in accordance with the objectives of the qualitative data collection strategy: to deepen the researcher's understanding of the effectiveness of the Pyramid intervention and to investigate the underlying components which influence behavioural change. Questions were designed to be flexible enough to: 'allow the discussion to move in different directions, yet avoid moving completely away from the topic of interest' (Savin-Baden & Major, 2013, p381).

Furthermore, focus group questions were clear and brief, and in language participants would typically use (Newcomer, Hatry, & Wholey, 2015). A one-dimensional, open-ended question structure was adopted to prevent confusion over what was being asked and to avoid dichotomous responses (Krueger & Casey, 2014). Prior to the first question, an 'ice-breaker' activity (Pyramid attendees only) was introduced to put participants at ease and encourage engagement in the research process. This procedure is considered particularly helpful in getting CYP to feel at ease, enabling participants to 'find their voice' in the group (Shaw et al., 2011, p22). However, adults are often resistant to warm-up games (Kitzinger & Barbour, 1999) so an initial warm-up conversation (e.g. participants described their role/relationship to the school) preceded data collection with club leaders in place of an 'ice-breaker' activity.

A suitable 'question route' starts simply and flows naturally from the general to the specific (Krueger & Casey, 2014). In the current study, items were sequenced in a logical order and began with an initial 'engagement' question which was intended to introduce the topic and make participants feel comfortable. For example, from the Pyramid attendee questions:

Q1: *Think back over the time you have spent at Pyramid club and tell us one of your most enjoyable memories.*

'Exploratory' questions on the key areas of interest were inserted next in the sequence.

For example, from the Pyramid attendee questions:

Q5: *How has coming to Pyramid club helped you?*

And for example, from the club leader questions:

Q2: *Which aspects of the club do you think worked best?*

Questions were included to allow participants to report positive and negative views. For example, from the Pyramid attendee questions:

Q3: *What did you like least about the club?*

And for example, from the club leader questions:

Q6: *Were there any barriers which prevented the club running as you had expected?*

Finally, a 'closing' question allowed participants to add any remarks and the researcher to check if anything had been missed. For example, from the club leader questions:

Q10: *Is there anything else you would like to add about Pyramid club before we finish?*

The appropriate use of probing techniques e.g. pausing, mirroring (repeating the participants' previous response), and asking follow-up questions were used for clarification and elaboration of answers. As previously described, questions were purposively one-dimensional and open-ended to ease comprehension, particularly for Pyramid attendees. For example, Q5: *How has coming to Pyramid club helped you?* was structured to prevent a dichotomous response and also to avoid leading respondents by not referring to any particular areas (e.g. targeted socio-emotional domains). A suitable

probe was utilised to further minimise leading respondents and to encourage elaboration, e.g: *If you have an example of how Pyramid has helped you, can you describe it?*

Participants were informed there were no 'right' or 'wrong' answers and they could disagree if their response required it. The selective use of probing techniques was used to explore pertinent issues in more depth, deepen responses and subsequently increase the 'richness' of the data obtained (Jones, Carson-Cheng, & Lezin, 2013).

3.4.5. Data analysis strategy for the qualitative phase

Qualitative data from focus groups with Pyramid attendees and club leaders were thematically analysed jointly. A hybrid deductive-inductive analysis integrated 'top-down' (driven by the research questions, and existing knowledge and theory) and 'bottom-up' (data driven) approaches. To facilitate clear and transparent reporting the *Behaviour Change Technique (BCT) Taxonomy v1* (Michie et al., 2013) was utilised: a taxonomy of 93 consensually agreed and discrete BCTs. Using a reliable method permits greater synthesis of findings from effectiveness studies which can be coherently assessed against standard of evidence frameworks (e.g. EIF). Triangulation of informants was used to enhance the credibility of the findings. Selected transcripts were cross-validated by a second coder (the researcher's first supervisor) to establish the 'quality' of the research findings. Demonstrating confirmability suggests the researcher has remained neutral throughout and although interpretation is involved in the research process, findings can be corroborated by others (Savin-Baden & Major, 2013).

3.4.5.1. Rationale for the use of thematic analysis

Thematic analysis (TA) was considered a suitable analytical tool as it complemented the research questions and was compatible with the philosophical position of the researcher (section 3.). TA is a flexible tool and can be employed as a 'contextualist' method, implemented within a critical realist framework: 'a method which works both to reflect

reality, and to unpick or unravel the surface of reality' (Braun & Clarke, 2006, p9). This viewpoint recognises the contribution of agency; how individuals make sense of their experience and the impact of the broader social context on those meanings.

In the current study, the objective of TA was to transform the raw data into emergent themes from which to derive meaning: to demonstrate the content in relation to the research questions (Richards, 2005). A 'theme' essentially captures something important about the data with respect to the research question, representing some level of patterned response or meaning (Braun & Clarke, 2006; 2013). Data were thematically analysed to discern patterns which encapsulate some understanding of Pyramid's effectiveness and the process of behavioural change. Crucial to this, TA facilitated the researcher's access to the 'unique perspective' of the service user (attendees) and of the delivery agent (club leaders).

3.4.5.2. Coding procedure and analysis framework

The researcher analysed the data manually as this was considered an appropriate technique for data collected from focus groups and best matched the researcher's skills and experience. Whilst computer software can facilitate the analysis of qualitative data, concerns have been raised (Bryman, 2012). These include de-contextualising the data and the consequent loss of narrative flow through the fragmentation process. Moreover, some researchers (e.g. Savin-Baden & Major, 2013) maintain that the process of coding and retrieving in software programmes fails to identify the interactive component of data collected from qualitative methods, in particular from focus groups.

Themes or patterns within data can be identified principally in either an inductive ('bottom up') or deductive ('top down') way, driven by the researcher's theoretical or analytical

interest. In the current study, a hybrid deductive-inductive process was selected (Fereday & Muir-Cochrane, 2006). A priori data coding is used when there is an assumption that certain aspects of the research phenomenon should be focused on, or when specific issues have been previously established and are expected to arise from the data (Crabtree & Miller, 1999). For example, in the current study the analysis was driven by the research questions. Nonetheless, caution must be taken not to overlook important data which do not pertain to a pre-existing template. Utilising a priori coding does not prohibit the generation of new codes and a data-driven, inductive approach was also implemented. This refers to the ability to recognise an 'important moment' in the data and a 'good' code captures qualitative 'richness' (Boyatzis, 1998). Saldana (2009) goes further and posits that whilst a code embodies a datum's primary essence it is ultimately determined by the researcher's 'lens' and, therefore, 'all coding is a judgement call' (Saldana, 2009, p3). In vivo coding was included to augment the researcher's access to the 'unique perspective' of the service user and of the club leaders. Nonetheless, the researcher acknowledged that all codes (a priori or inductive) were tentative and subject to modification or removal. Codes were refined iteratively during the analysis process and subsequently through the development of an explanatory framework. To ensure methodological rigour in the TA the researcher implemented a six-phase recursive process model devised by Braun & Clarke (2006; 2013) (*Table 3.6.*).

Table 3.6: The process of thematic analysis using a six-phase model

Phase	Description	Process
1	Familiarisation with the data set	Data audio recorded from focus groups with Pyramid attendees and club leaders were transcribed verbatim by the researcher. Completed transcripts were checked against the audio data. All transcripts were actively read through thoroughly and repeatedly (data 'immersion') with any immediate observations marked with a highlight pen.
2	Generating initial codes	The researcher systematically went through the dataset. A priori and inductive coding methods were applied to identify features of interest. Codes were allocated a number and documented in a code list (<i>Appendix H</i>).
3	Searching for themes	Initial codes were sorted into potential themes. Relevant extracts were organised within identified themes. The researcher attempted to discern patterns which encapsulated some understanding of the data in relation to the research questions.
4	Reviewing themes	Preliminary themes were refined through a constant recursive process: collapsed and split to establish clear and identifiable distinctions. Data were re-organised to meaningfully correspond. Redundant themes were removed.
5	Defining and naming themes	Each theme was considered in relation to the research questions. Themes were contemplated individually and in relation to others. Global themes, thematic categories and subthemes were defined according to how they meaningfully portrayed the data. Selected transcripts (attendee and club leaders) were independently co-coded by the researcher's first supervisor.
6	Summarising the data within and across themes in a coherent and logical way	A summary of the data with supporting evidence for the named themes was presented diagrammatically and with an analytic narrative. Findings were discussed in relation to the research questions.

3.5. Ethical considerations

Ethical approval was received from the University of West London (UWL) Research Degrees Sub-Committee in March 2013. The circumstances in which the research was undertaken ensured the physical, emotional and psychological safety of all participants (pupils and club leaders) and the researcher. All principles were strictly adhered to in accordance with the Code of Ethics and Conduct (British Psychological Society (BPS), 2009) and the Code of Human Research Ethics (BPS, 2014).

Child protection

The researcher completed a full Disclosure and Barring Service (DBS) check (<https://www.gov.uk/security-vetting-and-clearance>) to establish her suitability for working with vulnerable groups. While on school premises the researcher respected and followed individual school policies and protocols as instructed by staff.

Perceived power differential

The difference in perceived power between the adult researcher and child/young person participant has been acknowledged as a specific ethical concern (Punch, 2002). This can lead to the participant acquiescing to partake in research when they are reluctant and can create response bias where the child/young person does not report their true thoughts and experiences. This issue can be addressed by providing a research environment which is more reciprocal and democratic (Percy-Smith & Thomas, 2009). Researchers need to consider carefully identity perceptions as this is a crucial component in 'bridging the gap' between the researcher and the researched: honesty, openness, empathy and 'naive curiosity' are valued (McLaughlin, 2015). In the current study, potential power differentials were addressed by the researcher creating an informal research encounter e.g. by introducing herself to participants prior to the session (if possible), using an ice-breaker activity and setting up the room to resemble a familiar circle time activity.

Access to legal minors

The researcher negotiated initial contact with secondary schools through local Pyramid club Coordinators (one in England and one in Wales). Personal contact with Headteachers and key members of staff was subsequently arranged to discuss the research aims and commitment required from schools. Further to receiving a signed letter from the Headteacher confirming their school's participation, the researcher provided evidence of DBS clearance.

Research design

The decision to implement a non-intervention comparison group rather than a wait-list control group or RCT was based on both ethical and practical considerations. Concerns regarding RCTs for school-based intervention research have been previously identified (section 3.3.3.). In the current research, adopting a wait-list design would have necessitated a delay in access to the intervention (a minimum of three months) for some vulnerable pupils. As sufficient places were available for all pupils identified through the screening process (section 4.1.5.), it was considered unethical to delay access for any pupil who would potentially benefit and/or whose symptoms might increase over time.

Informed consent

Valid, written consent was initially provided by Headteachers (*Appendix I*) who were 'gatekeepers' in the research and through whom the children could be contacted. The parents/carers of pupils identified by school staff as suitable for the study (Pyramid and comparison groups) were sent a project information letter by their child's school. Consent to use their son/daughter's data was requested via an opt-out form (*Appendix J*), the receipt of which meant that the particular child would not then be included in the study. If the form was not returned, the consent of the parent/carer was assumed. Precautions were put in place to ensure parents/carers received the project information letter and

sufficient time was allowed for opt-out forms to be returned (within two weeks). This method is used in schools-based research conducted by the NHS National Institute for Health Research (NIHR) (<http://www.nets.nihr.ac.uk/>) and was deemed ethically appropriate given the nature of the study (with minimal risk to participants, involving access to data only), the age of participants (over 11-years-old), and the expectations of the school.

Written consent was also provided by the pupils themselves (*Appendix K*). Clear information at an appropriate level of detail about the nature, purpose and duration of the research was disseminated to 'gatekeepers', parents/carers and pupils invited to participate (separately worded information sheets and consent forms were used for 'gatekeepers', parents/carers and pupil participants). The researcher acknowledged that all stakeholders needed to have the correct information on which to make informed decisions and, whilst consent from parents must be gained, the overriding consideration should be the child's consent (BPS, 2009; 2014).

All pupils and their parents/carers were informed that if consent to participate in the evaluation study was declined it would not preclude a place at a Pyramid club.

Participants and parents/carers were notified of the right to withdraw at any time without having to provide a reason.

Confidentiality and anonymity

All stakeholders were informed that data would be treated completely confidentially and de-identified: no names (pertaining to pupils, schools, members of staff or club leaders) would appear in any paper, thesis or report connected to the research. They were also informed of any third parties with access to the data/results from the completed research.

Participant distress/withdrawal

Pyramid is part of a school's pastoral provision and pupils have the right to stop attending at any time. Participants were informed that they could continue to attend Pyramid but withdraw their consent at any time for use of their data in the research or from participation in a focus group. It was considered unlikely that a participant would become distressed during a focus group: a similar focus group study with primary-aged children (Ohl et al., 2013) did not cause participant distress. However, a protocol was established with members of school staff should any participant become distressed or wish to withdraw.

Debriefing

All participants were debriefed and thanked for their involvement. Schools were given a written report evaluating the Pyramid club in their respective school and summarising individual pupil progress.

Data storage

Information regarding the storage of data was made available to stakeholders. All electronic data were password protected and hard copies of questionnaires and focus group transcripts were securely locked in a filing cabinet at the University of West London. The researcher clearly stated how the results were to be reported and disseminated. The length of time for data retention complied with the Data Protection Act 1998 guidelines.

3.6. Summary of the methodology and synthesising the findings

A mixed methods strategy was selected as it was compatible with the philosophical position of the researcher and was the most appropriate design to comprehensively and robustly address the research questions which pertained to intervention effectiveness, and processes and mechanisms influencing behaviour change. A range of tools was

permitted to investigate different facets of the research interest: quantitative and qualitative strategies were selected on the basis of their suitability to address specific research questions (i.e. intervention effectiveness: **RQ1**; **RQ2**; or behaviour change: **RQ3**) but nonetheless formed an integrated design. Findings from independent analyses were synthesised with respect to the RQs which were designed to address gaps in the extant Pyramid and school-based intervention literature. It was anticipated that findings would contribute ecologically valid evidence to the evidence hub for school-based socio-emotional interventions which have ‘real world’ implications for CYP. *Figure 3.2.* illustrates how the complementary strategies were implemented in the current research design to satisfy the research objectives and address the research questions.

Chapters Four to Six present the empirical work carried out in the current research: the quantitative findings of Pyramid’s short-term impact (Study One: Chapter Four); the qualitative findings of Pyramid’s short-term impact (Study Two: Chapter Five), and the quantitative findings of Pyramid’s longer-term impact (Study Three: Chapter Six). Conclusions drawn from the quantitative and qualitative strategies are integrated in Chapter Seven and their implications discussed.

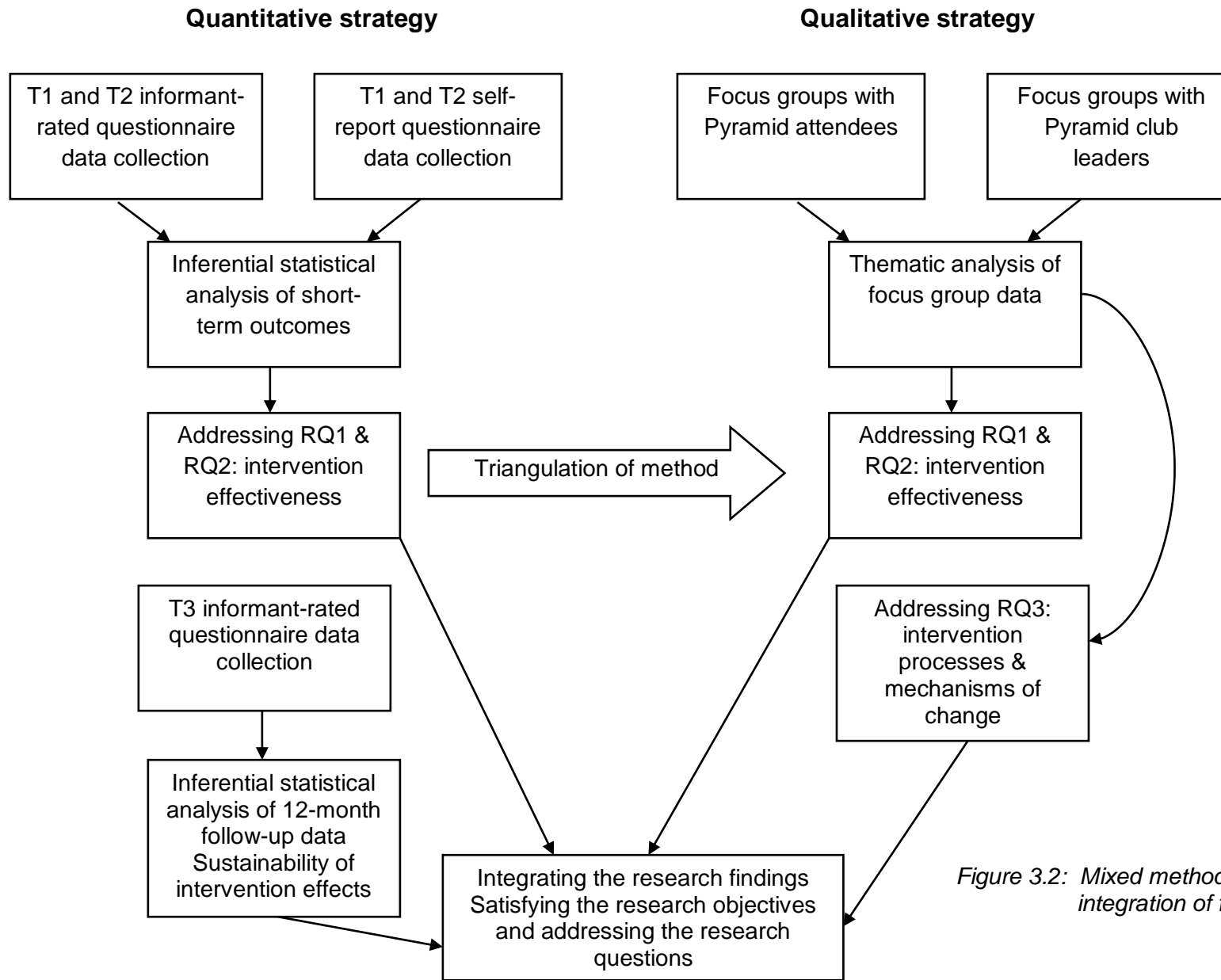


Figure 3.2: Mixed methods research strategy and integration of findings

Chapter Four

Study One: quantitative evaluation of the short-term impact of Pyramid

This chapter describes the design and procedure for Study One: an evaluation of the short-term impact of the Pyramid intervention on young people in early secondary education. An analysis of the quantitative data is presented and key findings are discussed in relation to the research questions.

4. Research objectives of Study One

There were two research objectives: to examine if Pyramid is an effective intervention for pupils in early secondary education (aged 11- to 14-years) and to investigate the impact, if any, of Pyramid on pupils' school performance. These objectives align to the research questions:

RQ1: Does the Pyramid intervention impact on the socio-emotional health of pupils in early secondary education?

RQ2: Does the Pyramid intervention impact on early secondary-aged pupils' school performance?

4.1. Method

4.1.1. Design and measures

A quasi-experimental, 2 x 2 mixed model design: group type (intervention or comparison) constituted the between groups factor and time point (baseline or post-test, within two weeks post-intervention) the within group factor. A non-equivalent groups design was chosen: Pyramid is a selective intervention offered to pupils who display appropriate eligibility criteria; therefore, randomised sampling or wait-list control were unsuitable (section 3.3.3).

Socio-emotional wellbeing measures (section 3.3.4.1.) were: the Strengths and Difficulties Questionnaire informant-rated version (SDQ: Goodman, 1997), the Strengths and

Difficulties Questionnaire self-report version for 11- to 17-year-olds (SDQ: Goodman et al., 1998) and the self-report Well-Being Questionnaire (WBQ: NPC, 2010).

School performance measures (section 3.3.4.2.) were: subject ability self-concept in English and Mathematics and academic (National Curriculum) working levels in English and Mathematics for each participant (provided by schools).

4.1.2. Participants: recruitment of schools

The researcher recruited eight schools with the support of the local Pyramid Coordinator (one in England and one in Wales). Four schools participated during the academic year 2013/2014 and a further four during 2014/15. Three schools were located in Wales and five in England (four in the London Borough of Ealing (LBE) and one in Surrey); none had previously hosted a Pyramid club. Publically accessible school information (from school websites and Ofsted/Estyn reports) identified distinctive demographic characteristics (*Table 4.0.*). All three Welsh schools had less than 2% of their cohort with English as an additional language, whereas, for three of the four schools in the LBE the figure was over 50%. The number of pupils eligible for free school meals (FSM) was under the national average for Welsh schools and over the national average for the LBE schools (but not for the Surrey school). All three Welsh schools had a higher percentage of pupils with Special Educational Needs (SEN) compared to the English schools (which were all below the national average) (<https://statswales.gov.uk/>; <https://www.gov.uk/government/statistics/schools-pupils-and-their-characteristics-january-2015>). All eight schools had received either a 'good' or 'outstanding' ('excellent') rating at their most recent inspection.

Table 4.0: Key demographics of schools: Study One

School ID No. Academic year (term) Pyramid club was hosted	Location	Description	% pupils with English as an additional language: average for Wales 6.3%; average for England 14%	% pupils eligible for FSM: average for Wales 17.5%; average for England 13.9%	% pupils on SEN register: average for Wales 20.1%; average for England 17.9%	Ofsted/Estyn* Rating
1 2013/14 (Autumn)	Flintshire, Wales	11-16, mixed comprehensive Local Authority maintained 526 pupils	1.7%	15%	37%	Excellent (2015)
2 2013/14 (Autumn/spring)	London Borough of Ealing (LBE), England	11-18, mixed comprehensive Local Authority maintained 1,246 pupils	65.2%	25.8%	10.8%	Good (2012)
3 2013/14 (Spring)	LBE, England	11-19, mixed comprehensive Local Authority maintained 1,780 pupils	51.6%	24.1%	6.1%	Outstanding (2011)
4 2013/14 (Summer)	Conwy, Wales	11-18, mixed comprehensive Local Authority maintained 1,482 pupils	1%	15%	11%	Good (2014)
5 2014/15 (Autumn)	Flintshire, Wales	11-16, mixed comprehensive Local Authority maintained 567 pupils	1%	4%	18.25%	Good (2009)
6 2014/15 (Spring)	Surrey, England	11-18, mixed comprehensive Academy (converter) 1,653 pupils	7.6%	3.5%	6.7%	Outstanding (2011)
7 2014/15 (Spring)	LBE, England	11-19, mixed comprehensive Local Authority maintained 1,032 pupils	26.9%	16.4%	5.5%	Good (2015)
8 2014/15 (Spring)	LBE, England	11-18, single-sex (female) Local Authority maintained. 1,417 pupils	61.2%	23.4%	6.2%	Good (2014)

*Estyn is the office of Her Majesty's Inspectorate for Education and Training in Wales ('Excellent' is the equivalent rating to 'Outstanding').

4.1.3. Pupil participants: the sample population

All pupil participants (N=126) were on school roll in Year 7, 8 or 9 and had a mean age of 12.53 years (SD: 0.79). The Pyramid group (N=66) comprised 26 males and 40 females. Comparison group pupils (N=60) comprised 26 males and 34 females and were matched with the Pyramid group on age, gender, socio-economic status (SES) based on eligibility for free school meals (FSM), and same (or similar) working levels in English and Mathematics based on National Curriculum (NC) levels. The demographic characteristics of participants at school level are presented in *Table 4.1.* and a summary of demographic characteristics for the whole sample in *Table 4.2.*

Recruitment for places at Pyramid club was organised by each school Pyramid Coordinator. In line with the criterion set in previous Pyramid evaluations (Ohl et al., 2012; 2008) a minimum attendance rate of 70% (seven of the ten Pyramid club sessions) was set for data to be included in the current study, thus providing an evidence-based standard (Botvin, Griffin, & Nichols, 2006). Pyramid participant numbers refer to pupils who attended a minimum of seven of the ten club sessions and whose data were provided. Data for one pupil who had received 70% dosage were not available. Eleven pupils attended between one and three sessions and their data were excluded from the analysis.

Table 4.1: Demographic characteristics of Study One participants by school

School ID	Total N: Pyramid group (PG)	Year group	FSM: N (%)	Gender: N (% male/ female)	Ethnicity: N (%)	Total N: Comparison group* (CG)
1	6	7 & 8	0 (0%)	5 male; 1 female (83.3% male)	6 White British (100%)	6
2	8	7	2 (25%)	4 male; 4 female (50% male)	4 Black African (50%); 2 Asian Indian (25 %); 2 Asian Other (25%)	8
3	7	8	2 (28.6%)	3 male; 4 female (57.1% female)	1 White British (14.3%); 3 Asian Pakistani (42.9%); 2 Asian Indian (28.5%); 1 Asian Other (14.3%)	7
4	8	7	1 (12.5%)	5 male; 3 female (62.5% male)	7 White British (87.5%); 1 Asian Indian (12.5%)	8
5	7	7	0 (0%)	3 male; 4 female (57.1% female)	7 White British (100%)	7
6	8	8	0 (0%)	4 male; 4 female (50% male)	7 White British (87.5%); 1 Asian Other (12.5%)	8
7	10	9	3 (30%)	2 male; 8 female (80% female)	4 White British (40%); 2 White Other (20%); 2 White & Asian (20% 2); 1 Black Caribbean (10%); 1 Asian Pakistani (10%)	10
8	12	8	4 (33%)	12 female (100% female)	3 White Other (25%); 2 Asian Pakistani (16.6%); 4 Asian Other (33.3%); 1 Asian Indian (8.3%); 1 White & Black Caribbean (8.3%); 1 White & Black African (8.3%)	6

**Comparison group matched with Pyramid group on age, gender, SES and NC levels in English and Mathematics.*

Table 4.2: Summary of participants' key demographic data

Total N (%) by Year group: Pyramid Group	Total N (%) Male/Female	Total N (%) eligible for FSM*	Total N (%) by ethnic group	Total N: matched comparison group
Year 7: 26 (39.4%)	26 male (39.4%)	12 (18%)	White British: 32 (48.5%) White Other: 5 (7.6%) Black African: 4 (6.1%) Black Caribbean: 1 (1.5%) Asian Indian: 6 (9.1%) Asian Pakistani: 6 (9.1%) Asian Other: 8 (12.1%) White & Black Caribbean: 1 (1.5%) White & Black African: 1 (1.5%) White & Asian: 2 (3%)	60
Year 8: 30 (45.5%)	40 female (60.6%)			
Year 9: 10 (15.1%)				

*FSM = free school meals

4.1.4. Ethical approval and obtaining consent

Ethical approval was received for the research (section 3.5.). Valid consent was provided by Headteachers from the eight participating schools and all pupil participants. No parental/carer opt-out forms were returned and consent was, therefore, assumed for use of every child's data.

4.1.5. Screening and sampling

Two of the eight schools (Schools 1 and 5) had comparatively small pupil populations and screened the whole year group. The remaining six schools employed a pre-screening list collated from referrals suggested by class tutors, subject teachers, pastoral and support staff. Multiple-informant referrals were considered appropriate as the structure of the secondary school curriculum involves pupil contact with a wide range of staff. Nominated pupils were subsequently screened using the informant-rated SDQ (Goodman, 1997) completed by the member of staff who knew the pupil best.

In line with the Pyramid three-part model (section 2.3.1.), pupils who were rated with 'high' or 'borderline' need on emotional symptoms and/or peer relationship problems i.e. scores > 3 and > 2 respectively, or had a low score for prosocial behaviour i.e. score < 6, were identified as suitable for the Pyramid intervention. Pupils who additionally scored with

'some' or 'high' difficulties on conduct problems and/or hyperactivity/inattention i.e. score > 2 and/or > 5 respectively, were discussed as individual cases. However, pupils who were rated as displaying externalising behaviours exclusively (i.e. 'high' scores in conduct problems and/or hyperactivity/inattention) were considered unsuitable for Pyramid (but could be referred for a more appropriate intervention).

Pupils were invited to attend a Pyramid club based on their SDQ scores and a subsequent assessment of suitability involving discussion between school staff, other relevant professionals (e.g. learning mentor) and the Pyramid Coordinator (*stage two* of the Pyramid three-part model). Comparison group pupils underwent the same screening procedure (informant-rated SDQ assessment) as the Pyramid group.

4.1.6. Recruitment of Pyramid club leaders

Ideally, club leader teams broadly represent the demographic composition of Pyramid attendees. The Pyramid clubs reflected this with regard to ethnicity. However, the majority of club leaders were female (80%), and two clubs (Schools 3 and 6) with mixed gender attendees were run exclusively by females. Gender and ethnicity characteristics of club leaders from the eight participating schools in Study One are presented in *Table 4.3*.

Table 4.3: Pyramid club leader demographics by school

School ID	Club leader to Pyramid attendee ratio	Total N: Status*	Gender	Ethnicity (N=)
School 1	3:7	1 pastoral support staff (I); 2 Year 12 students (I)	2 male; 1 female	3 White
School 2	4:8	1 Pyramid Coordinator (E); 3 undergraduate Psychology students (E)	1 male; 3 female	2 White; 1 Black; 1 Asian
School 3	5:7	5 undergraduate Psychology students (E)	5 female	1 White; 4 Asian
School 4	3:8	1 pastoral support staff (I); 2 Year 12 students (I)	1 male; 2 female	3 White
School 5	5:7	2 pastoral support staff (I); 3 teaching assistants (I)	1 male 4 female	5 White
School 6	3:8	2 pastoral support staff (I); 1 teaching assistant (I)	3 female	3 White
School 7	3:10	3 undergraduate Psychology students (E)	1 male; 2 female	2 White; 1 Black
School 8	4:12	4 undergraduate Psychology students (E)	4 female	2 White; 2 Asian

*I = internal school position; E = external position

4.1.7. The Pyramid intervention: therapeutic activity group

Ten sessions (1.5 hours in duration) were delivered on a regular weekly basis to pupils in the Pyramid group. Clubs were run in accordance with the manualised programme: Club leaders collaboratively planned each session; incorporating four key therapeutic activities, circle time, arts and crafts, games, and snack time/food preparation (Pyramid, 2011a) (section 2.3.2.), and accommodating distinctive phases in the group's development (Pyramid, 2011b).

To monitor if the Pyramid programme was being delivered authentically a minimum of one visit by the Pyramid Coordinator took place per club. For each club a file was retained, documenting the content of each session and weekly observations on the progress of

individual pupils recorded by group leaders, thus providing additional evidence that the intervention had been delivered as intended.

4.1.8. Predicted outcomes: SDQ and WBQ

On the basis of the screening procedure, it was predicted that at baseline assessment (Time 1: T1) the Pyramid group would have a higher mean total difficulties (TD) score on the informant-rated SDQ than the comparison group. In line with previous findings (e.g. Cassidy et al., 2014; 2015; McKenna et al., 2014; Ohl et al., 2012; 2008), it was predicted that at post-test (Time 2: T2), the mean TD score for the Pyramid group would have significantly decreased from baseline assessment and would more closely resemble the post-intervention mean TD score of the comparison group. Furthermore, it was expected that significantly decreased mean scores would be identified in specific domains which are targeted by the intervention and map onto individual subscales on the SDQ (emotional symptoms and peer relationship problems), as well as an increase in mean prosocial behaviour score. Moreover, it was predicted that the SDQ self-report data would demonstrate results consistent with findings from the informant-rated data.

In addition, based on participants' suitability for Pyramid it was expected that the Pyramid group's baseline mean scores on the WBQ would indicate lower levels of subjective well-being than the comparison group in domains pertinent to Pyramid (i.e. emotional well-being, self-esteem, resilience, and satisfaction with friends). It was predicted that at post-test assessment, mean scores on the WBQ for these subscales would have increased for the Pyramid group, bringing them approximately in line with the comparison group.

4.2. Procedure

Before the first Pyramid session in each school, baseline data were collected for participants in both groups. The two self-report questionnaires: the SDQ (Goodman et al.,

1998) and the WBQ (NPC, 2010) were administered by the researcher or the school Pyramid Coordinator. Completed questionnaires were collected by the researcher (or school Pyramid Coordinator) and participants were debriefed.

Baseline (T1) informant-rated SDQ data were sent to the researcher by the school Pyramid Coordinator. Demographic data for participants in the Pyramid and comparison groups (age, gender, eligibility for FSM and current NC working levels in English and Mathematics) were also provided by schools. After the 10-week Pyramid club (within two weeks post-intervention) T2 data were collected. Participants from both groups repeated the two self-report measures, administered by the researcher or the school Pyramid Coordinator. The repeated measure SDQ informant-rated data (same informant as the baseline measure) and pupils' updated NC working levels in English and Mathematics were provided by the school Pyramid Coordinator. The progress of every Pyramid club attendee was assessed according to changes in their SDQ scores and the results contributed to an individual school report, prepared by the researcher and disseminated to Headteachers.

4.3. Data analysis strategy

Quantitative data from the outcome measures were analysed using SPSS Version 22: data were only included in the analysis if pairs of scores (T1 and T2 scores) for participants were available (*Table 4.4*). The distributions of the data were assessed to ascertain if the assumptions of parametric testing were met. In line with previous studies (e.g. Ohl et al., 2012; 2008), a significant positive skew was expected in the distribution of the SDQ TD data from the comparison group (a sample identified as not presenting with internalising difficulties), typically reflecting the low prevalence rates of psychopathology in the general population (Stone et al., 2010). Whilst data transformation techniques can be applied to address deviations from normality, the strategy considered most appropriate

was to conduct the analysis without transforming the data (section 3.3.6.). The meaning of data is inextricably linked to context and any analysis should be driven by this as results will be interpreted within the original context (Osborne, 2002). Whilst taking the log of a variable makes the distribution less skewed it also alters the relationship between the original variables. For example, if the raw scores relate to a meaningful scale (i.e. low scores on the TD scale for the comparison group), transformed scores can be difficult to interpret (Tabachnick & Fidell, 2013). Moreover, this approach is consistent with the critical realist framework of the research (which considers context as paramount), and must be referred to in order to bring focus and avoid illegitimate references from data (Savin-Baden & Major, 2013).

Furthermore, it is widely acknowledged (e.g. Field, 2013; Totton & White, 2011) that the parametric tests appropriate for the current study: t-test; Pearson's Correlation Coefficient, and Analysis of Variance (ANOVA) are sufficiently robust and can cope with moderate violations of normality. Pagano (2004) insists that if sample sizes are equal and the size of each sample is equal to or greater than 30 (as in the current study), the t-test for independent groups may be used without appreciable error, despite moderate violations of normality and/or the homogeneity of variance assumption (sample sizes can be considered equal if the larger group is not more than one and a half times larger than the smaller group: Morgan, Leech, Gloeckner, & Barrett, 2004).

Descriptive statistics were calculated to summarise data from the measures and identify trends. A Kolmogorov-Smirnov test was selected (appropriate for a sample size > 50) to ascertain any deviations from normality in the distributions of data collected from the SDQ informant-rated version, the SDQ self-report and the self-report WBQ. The original mean was compared with the 5% trimmed mean to identify if extreme scores were having a strong influence and to ascertain if the mean was an accurate representation of the centre of data distribution, further informing selection of appropriate inferential tests.

Following preliminary analyses, appropriate inferential statistics were selected to examine significant effects on the outcome variables. In the between groups analysis, if the assumption of homogeneity of variance was not met, results corresponding with the 'equal variances not assumed' calculations were reported. This analysis takes into account the Cochran & Cox (1957) adjustment for the standard error of the estimate and the Satterthwaite (1946) adjustment for the degrees of freedom.

The alpha level (α) or significance was set at the .05 level. Effect sizes (Cohen's d for t-tests and correlations and eta squared (η^2) (appropriate for 2-way ANOVA: Levine & Hullett, 2002) were reported to determine the magnitude of significant findings. Relevant guidelines (Cohen, 1988; Rosenthal, 1996) were used to determine the strength of calculated effect size statistics (section 3.3.6.). Analyses of simple effects using t-tests were conducted following significant ANOVA results. Where appropriate (to account for multiple testing) alpha was adjusted using the Bonferroni correction (according to the number of comparisons made) and the adjusted significance level (ASL) reported.

4.4. Results

4.4.1. Summary of data collected

Data were collected from the Pyramid and comparison groups at T1 and T2. The total data collected for each outcome measure is recorded in *Table 4.4*.

Table 4.4: Summary of quantitative data collected in Study One

Outcome measure	Pyramid group (N=66)	Comparison group (N=60)
SDQ: informant-rated Total N	66	51
SDQ: self-report Total N	61	60
WBQ (including subject ability self- concept) Total N	54	58
English and Mathematics NC* levels Total N	46	46

*NC = National Curriculum

4.4.2. The SDQ informant-rated results

4.4.2.1. Preliminary analysis: data exploration

Visual inspection of histograms for the full data set indicated that the total difficulties data were positively skewed (i.e. most participants had low scores). Values of skewness and their respective standard errors were used to calculate ratios and assess significance. At T1, the subscale scores which contribute to the overall total difficulties (TD) score were found to be significantly positively skewed ($p < .05$). However, an inspection of the original TD mean with the 5% trimmed mean identified similar mean values. Furthermore, data for the prosocial subscale were significantly negatively skewed (i.e. most participants had high scores). To further interrogate the data, scores for the Pyramid and comparison groups were inspected separately to identify their distributions. A Kolmogorov-Smirnov test for the Pyramid group demonstrated that TD scores did not deviate significantly from the normal distribution at T1: $D(66) = 0.105$, $p = .07$, or at T2: $D(66) = 0.100$, $p = .17$. However, TD scores for the comparison group were significantly positively skewed (as expected) and showed abnormal distributions at both time points: T1: $D(51) = 0.152$, $p = .01$ and T2: $D(51) = 0.202$, $p = .001$.

4.4.2.2. Preliminary analysis: descriptive statistics

Descriptive statistics for the SDQ scores were calculated for the Pyramid group and the comparison group at baseline (T1) and post-test (T2) and compared to UK norms (*Table 4.5*).

Table 4.5: Descriptive statistics for informant-rated SDQ scores and UK norms

SDQ subscale	UK norms (age 11-15) Mean (SD)	Pyramid group (N=66)		Comparison group (N=51)	
		Baseline (T1) Mean (SD)	Post-test (T2) Mean (SD)	Baseline (T1) Mean (SD)	Post-test (T2) Mean (SD)
Conduct problems	0.90 (1.7)	0.88 (1.26)	0.64 (1.03)	0.59 (1.33)	0.53 (1.01)
Hyperactivity/inattention	2.60 (2.7)	3.42 (2.52)	2.80 (2.0)	2.43 (2.64)	2.24 (2.62)
Emotional symptoms	1.30 (1.9)	5.03 (2.58)	3.09 (2.35)	1.29 (1.55)	1.39 (2.01)
Peer relationship problems	1.40 (1.8)	4.67 (2.33)	2.73 (2.40)	0.98 (1.21)	1.18 (1.74)
Total difficulties	6.30 (6.1)	13.98 (4.88)	9.06 (5.37)	5.29 (4.96)	5.33 (5.40)
Prosocial behaviour (strength)	7.10 (2.4)	6.12 (2.38)	7.24 (2.28)	7.61 (2.12)	7.75 (2.25)

An inspection of the informant-rated mean SDQ scores at T1 demonstrated that the Pyramid group scored higher on the emotional symptoms and peer relationship difficulties subscales, and the TD scale than the general population. Mean scores on the conduct problems and hyperactivity/inattention subscales were similar to normative scores, as was the prosocial behaviour mean score. According to the three-band (and four-band) cut-off criteria (*Table 3.1*), the mean TD score fell in the 'borderline' (or 'slightly raised') range, mean emotional symptoms and peer relationship problems scores were in the 'borderline' (or 'high') range, whilst prosocial behaviour, conduct problems and hyperactivity/inattention mean scores were 'normal' (or 'close to average'). This indicated that the pupils selected for Pyramid were experiencing difficulties in specific domains (i.e. internalising issues) and were suitable for the intervention. The comparison group mean

scores were similar to the normative scores on all subscales at T1 and fell securely within the 'normal' (or 'close to average') banding.

At T2, the Pyramid group's mean TD score was lower than at T1 and although it was still higher than the mean for the general population it fell within the 'normal' ('close to average') range. Mean scores for emotional symptoms and peer relationship problems were also lower for the Pyramid group than at T1 and likewise fell within the 'normal' ('close to average') range. Prosocial behaviour, conduct problems, and hyperactivity/inattention mean scores demonstrated less change from T1 to T2 and all remained within the 'normal' ('close to average') range. Mean scores for the comparison group demonstrated minimal change from T1 to T2 on all subscales and correspondingly no shift in bandings was evident.

4.4.2.3. Total difficulties scores: between and within group differences

To evaluate the effects on TD scores over time a mixed model ANOVA was conducted with group type (Pyramid or comparison) as the between groups factor and time point (T1/T2) as the repeated measures factor. Levene's test was non-significant and equal variances were assumed ($F = 0.29, p = .59$; $F = 0.23, p = .63$). There was a highly significant interaction effect between time point and group type: $F(1, 115) = 28.18, p < .001, \eta^2 = .165$, indicating that the TD scores of one group had decreased significantly over time. Results also demonstrated a highly significant main effect of time point: $F(1, 115) = 27.30, p < .001, \eta^2 = .16$ and a highly significant main effect of group type: $F(1, 115) = 54.70, p < .001, \eta^2 = .332$.

Tests of simple effects were conducted to further interrogate the results and examine the main effect of group type across the two time points. A repeated measures t-test demonstrated that there was a significant decrease in TD mean score ($M = 13.98, SD = 4.88$ to $M = 9.06, SD = 5.37$) over time for the Pyramid group: $t(65) = 7.62, p < .001$. This

generated a large effect size ($d = 0.96$). Whilst the mean TD score for the Pyramid group had decreased significantly from T1 to T2, a visual inspection of the mean TD scores for the comparison group showed minimal change over the same period.

To identify any between group differences, two independent samples t-tests were conducted. Results demonstrated a significant difference in TD mean score at T1: $t(115) = 9.49, p < .001$. This generated a very large effect size ($d = 1.77$). The Pyramid group displayed significantly more socio-emotional difficulties at baseline (T1) assessment than comparison group counterparts (as predicted). At T2 the mean TD score for the Pyramid group had decreased significantly but a significant difference between groups was still evident post-intervention: $t(115) = 3.71, p < .001$ (generating a medium effect size $d = 0.69$). To take account of multiple testing, the adjusted significance level (ASL) was .02.

The condition whereby one group starts off higher (or lower) than another at pre-test (e.g. T1 TD scores) should not be a particular cause for concern (Tabachnick & Fidell, 2013). The more crucial issue is whether there is a significant group*time interaction, demonstrating whether the pattern of change is different for the groups. Profile analysis (equivalent to the between groups main effect) shows a significant difference in scores between groups (averaged across both time points) and a significant within subjects effect: a significant difference in scores between time points within the Pyramid group. Profile plots are presented in *Figure 4.0*.

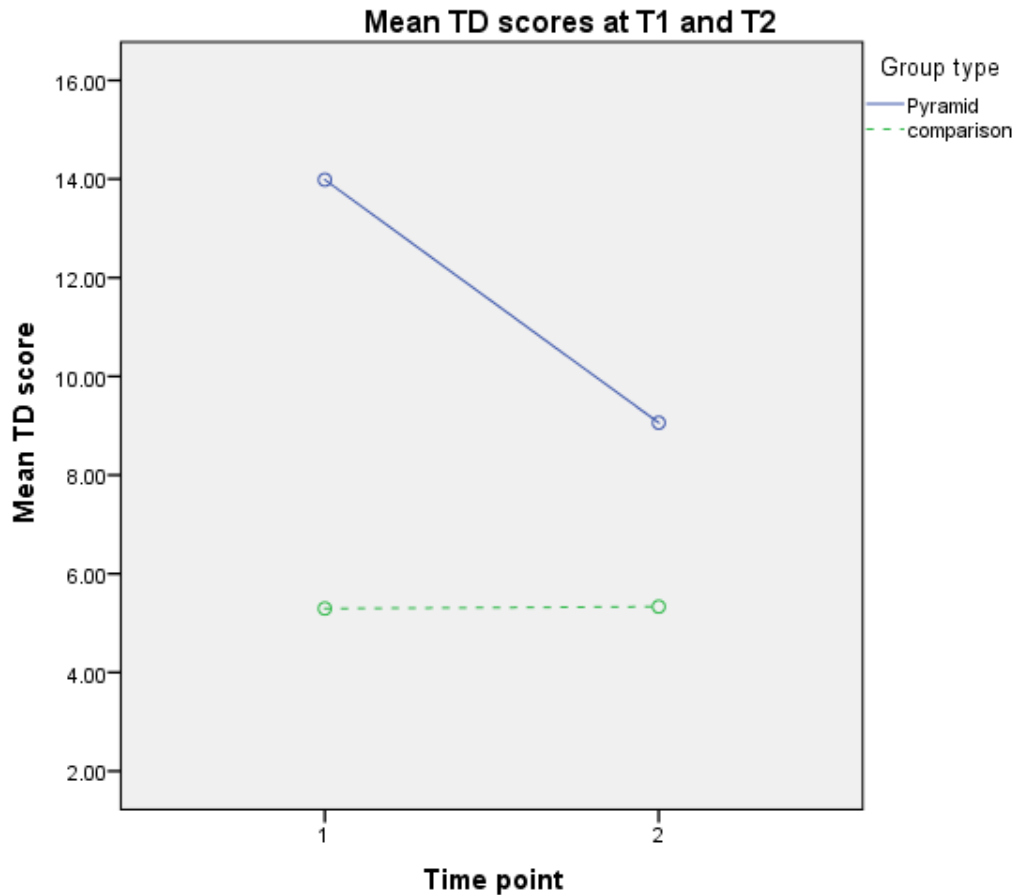


Figure 4.0: Profile plots for the Pyramid and comparison groups

4.4.2.4. Gender, ethnicity and socio-economic status as moderators

To examine any influence of gender on TD scores, a mixed model ANOVA was conducted (with gender: male/female as the between groups factor and time point: T1/T2 as the repeated measures factor). Levene's test was non-significant and equal variances were assumed ($F = 0.89, p = .35$; $F = 2.35, p = .19$). No significant interaction effect between time point and gender was observed, indicating that TD scores for the whole sample changed at a similar rate for males and females from T1 to T2. There was no significant main effect for gender: $F(1, 115) = 1.17, p = .28, \eta^2 = .01$ but a highly significant main effect of time point: $F(1, 115) = 28.26, p < .001; \eta^2 = .197$.

A second ANOVA was run with the Pyramid group data only. Levene's test reached significance so results should be interpreted with caution ($F = 5.18, p = .03$; $F = 4.17, p = .05$). Results showed no significant interaction effect between time point and gender and a non-significant main effect for gender: $F(1, 64) = 0.08, p = .78, \eta^2 = .001$. However, there was a highly significant main effect of time point: $F(1, 64) = 58.65, p < .001, \eta^2 = .474$. Thus a similar pattern of change was evident: TD scores of males and females in the Pyramid group decreased at a comparable rate from T1 to T2, suggesting the impact of Pyramid was not moderated by gender.

Ethnicity was also examined as a potential moderator (Pyramid group data only). Ethnic differences were, however, difficult to determine as some of the groups comprised small numbers. Therefore, the original ten categories of ethnicity were collapsed into four groups i.e. White, Black, Asian and Mixed. Revised categories and corresponding numbers of pupils are presented in *Table 4.6*.

Table 4.6: Collapsed ethnic categories for the Pyramid group

Collapsed ethnic category total N (%)			
White	Black	Asian	Mixed
37 (56.06%)	5 (7.58%)	20 (30.3%)	4 (6.06%)

Levene's test was non-significant and equal variances were assumed ($F = 0.18, p = .91$; $F = 0.37, p = .78$). Results from a mixed model ANOVA demonstrated no significant interaction effect between time point and ethnicity and there was a non-significant main effect for ethnicity: $F(3, 62) = 1.83, p = .15, \eta^2 = .08$. However, there was a highly significant main effect of time point on mean TD scores: $F(1, 62) = 18.45, p < .001, \eta^2 =$

.213. Overall, results suggested that TD scores for Pyramid participants decreased at a similar rate from T1 to T2, irrespective of ethnicity.

Socio-economic status (SES), as measured by eligibility for free school meals (FSM), was the third potential moderator to be examined using the Pyramid group data. Levene's test was non-significant and equal variances were assumed ($F = 0.90, p = .35$; $F = 1.52, p = .22$). No significant interaction effect was observed between FSM and TD scores over time but the main effect of FSM just reached statistical significance at the .05 level: $F(1, 64) = 3.91, p = .05, \eta^2 = .06$. Results demonstrated a highly significant main effect on TD scores over time: $F(64) = 27.94, p < .001, \eta^2 = .301$ and overall, suggested that TD scores of participants in the Pyramid group decreased at a similar rate regardless of eligibility for FSM (SES).

4.4.2.5. The SDQ subscale analysis

To probe the data further, subscale differences (between and within groups) from T1 to T2 were examined by a series of mixed model ANOVAs. Subscales pertinent to the Pyramid intervention (emotional symptoms, peer relationship problems, and prosocial behaviour) were of primary interest. Although conduct problems and hyperactivity/inattention are not targeted by the Pyramid intervention, analyses were carried out to examine any unpredicted changes in non-targeted domains. Descriptive statistics for the Pyramid and the comparison group on the SDQ subscales at T1 and T2 are presented in *Table 4.7*. and significant within group differences in mean scores from T1 to T2 have been indicated.

Table 4.7: SDQ (informant-rated) mean subscale scores at T1 and T2

SDQ subscale	Pyramid group		Comparison group	
	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)

*** $p < .001$

Analysis from the three subscales pertinent to the Pyramid intervention revealed changes over time were significant. The ASL was set at .02 for tests of simple effects carried out for each subscale domain.

Prosocial behaviour: Levene's test was non-significant and equal variances were assumed ($F = 0.19, p = .67$; $F = 0.93, p = .34$). Results showed a significant interaction effect between time point and group type: $F(1, 115) = 5.46, p = .02, \eta^2 = .04$, indicating the mean prosocial behaviour score had increased significantly for one group from T1 to T2. Results also demonstrated significant main effects of time point: $F(1, 115) = 8.93, p = .003, \eta^2 = .07$ and group type: $F(1, 115) = 7.34, p = .01, \eta^2 = .06$. A follow-up test of simple effects demonstrated an increase in mean prosocial score from T1 to T2 was significant for the Pyramid group: $t(65) = 4.09, p < .001$. This generated a medium effect size ($d = 0.48$).

There was a significant between groups difference in prosocial behaviour at T1: $t(115) = 3.51, p = .001$ (generating a moderate effect size: $d = 0.66$), with the comparison group

demonstrating a higher mean score. However, at T2 the between groups difference evident at T1 failed to achieve significance: $t(115) = 1.19, p = .24$. Results showed that after Pyramid club, the mean prosocial behaviour score for attendees had increased to a level similar to that of their comparison group peers.

Emotional symptoms: For T1 data Levene's test was significant ($F = 12.97, p < .001$) but non-significant for T2 data ($F = 1.96, p = .16$). However, results should be interpreted with caution. A mixed model ANOVA revealed a highly significant interaction effect between time point and group type: $F(1, 115) = 22.73, p < .001, \eta^2 = .145$. This indicated that emotional symptoms decreased significantly over time for one of the groups. Main effects of time point: $F(1, 115) = 18.56, p < .001, \eta^2 = .119$ and group type: $F(1, 115) = 60.33, p < .001, \eta^2 = .34$, were also highly significant. A follow-up test of simple effects identified a significant decrease in scores for the Pyramid group: $t(65) = 6.35, p < .001$. This generated a large effect size ($d = 0.79$).

As previous research has identified gender disparities in emotional symptoms to be particularly prevalent in an early adolescent population (e.g. Van Roy et al., 2006), the Pyramid group data were further scrutinised. Levene's test was non-significant and equal variances were assumed ($F = 1.24, p = .27; F = 0.00, p = .99$). Results demonstrated no significant main effect of gender: $F(1, 64) = 1.85, p = .18$ but a highly significant main effect of time point: $F(1, 64) = 41.12, p < .001$. Moreover, there was a non-significant interaction between gender and time point: $F(64) = 0.95, p = .34$, males and females showed a comparable decrease in emotional symptoms from T1 to T2. This is presented in *Figure 4.1*.

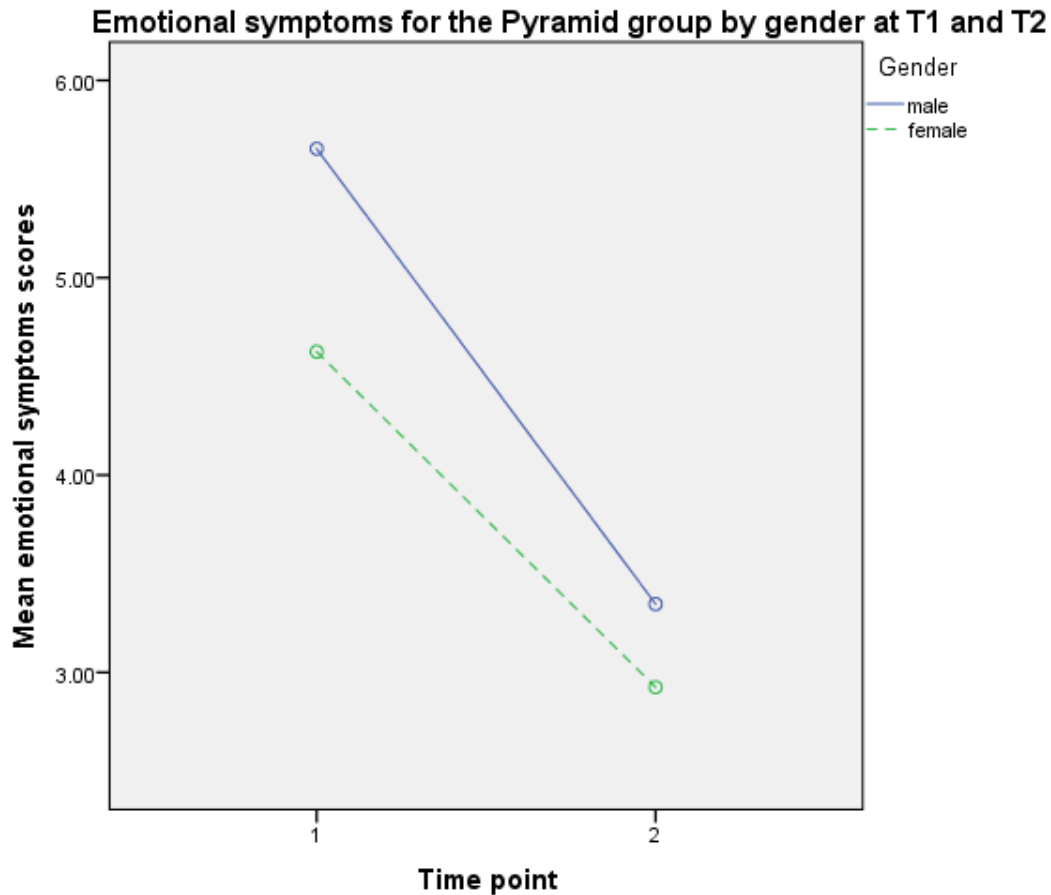


Figure 4.1: Emotional symptoms (informant-rated SDQ) by gender (Pyramid group)

Despite emotional symptoms for the Pyramid group decreasing significantly across time, significant between group differences identified at T1: $t(109) = 9.71, p < .001$ persisted at T2: $t(115) = 4.13, p < .001$, with the Pyramid group showing greater difficulties. This generated a very large effect size at T1 ($d = 1.76$) and a medium effect size at T2 ($d = 0.77$). (As Levene's test indicated unequal variances at T1: $F = 12.49, p < .001$, degrees of freedom were adjusted from 115 to 109.)

Peer relationship problems: Levene's test was significant so results should be interpreted with caution ($F = 12.49, p = .001$; $F = 9.61, p = .03$). However, a highly significant interaction effect of time point with group type was observed: $F(1, 115) = 28.37, p < .001, \eta^2 = .174$. Also, there was a highly significant main effect of time point: F

(1, 115) = 18.91, $p < .001$, $\eta^2 = .117$. Results indicated that for one group, the mean score had decreased significantly over time. A follow-up test of simple effects identified a significant decrease for the Pyramid group: $t(65) = 6.68$, $p < .001$. This generated a large effect size ($d = 0.82$).

A significant between groups difference in peer relationship problems evident at T1: $t(102) = 11.07$, $p < .001$ was still evident at T2: $t(114) = 3.90$, $p < .001$, with the Pyramid group showing greater difficulties. (As Levene's test indicated unequal variances at T1: $F = 12.49$, $p = .001$, degrees of freedom were adjusted from 115 to 102 and as Levene's test indicated unequal variances at T2: $F = 9.60$, $p = .002$, degrees of freedom were adjusted from 115 to 114.) A very large effect size was generated at T1 ($d = 1.98$) and a medium effect size was generated at T2 ($d = 0.74$).

Conduct problems: Levene's test was non-significant and equal variances were assumed ($F = 0.00$, $p = .99$; $F = 0.12$, $p = .73$). Results from a mixed model ANOVA identified no significant interaction between time point and group type: $F(1, 115) = .65$, $p = .42$, $\eta^2 = .01$. There was no significant main effect of time point: $F(1, 115) = 1.76$, $p = .19$, $\eta^2 = .02$, or group type: $F(1, 115) = 1.16$, $p = .28$. Neither group demonstrated a significant change in mean conduct problems score over time.

Hyperactivity/inattention: Levene's test was non-significant for T1 data: $F = 0.34$, $p = .56$; $F = 0.12$, $p = .73$ but significant for T2 data: $F = 4.94$, $p = .03$. Therefore, results should be interpreted with caution. However, there was no significant interaction between time point and group type: $F(1, 115) = .69$, $p = .41$, $\eta^2 = .01$. Whilst no significant main effect of time point was observed: $F(1, 115) = 2.94$, $p = .09$, $\eta^2 = .03$, a main effect of group type was significant at the .05 level: $F(1, 115) = 4.25$, $p = .04$. A follow-up test of simple effects showed a significant between groups difference in hyperactivity/inattention

at T1: $t(115) = 2.07, p = .04$ (generating a small effect size: $d = .38$), with the Pyramid group showing higher difficulties. At T2, the hyperactivity/inattention mean score for the Pyramid group more closely resembled that of the comparison group.

In summary, analysis of the subscale data revealed that the Pyramid group had significantly lower mean difficulties scores on measures pertinent to the intervention (emotional symptoms and peer relationship problems) at T2. Furthermore, a significant increase in mean score for prosocial behaviour (also pertinent to the intervention) was demonstrated over time. In contrast, no significant changes in these three domains were demonstrated by the non-intervention comparison group. Moreover, scores on the subscales measuring conduct problems and hyperactivity/inattention and not directly targeted by Pyramid demonstrated minimal within group change across time on both domains.

4.4.3. The self-report SDQ results

SDQ data were also collected from Pyramid and comparison group pupils themselves.

4.4.3.1. Preliminary analysis: data exploration

The same procedure undertaken with data from the informant-rated SDQ was repeated with self-report data. Visual inspection of histograms for the full data set indicated that total difficulties data were positively skewed. Values of skewness and their respective standard errors were used to calculate ratios and assess significance. At T1, the subscale scores which contribute to the overall TD score were found to be significantly positively skewed ($p < .05$). However, an inspection of the original TD mean with the 5% trimmed mean identified similar mean values. Consistent with informant-rated results, data for the prosocial subscale were significantly negatively skewed. Data from the Pyramid and comparison groups were then inspected separately to identify their distributions.

A Kolmogorov-Smirnov test was conducted to ascertain deviations from normality. The Pyramid group TD scores did not deviate significantly from normality at T1: $D(61) = 0.091$, $p = .20$, or at T2: $D(61) = 0.107$, $p = .08$. However, scores for the comparison group showed significant deviation from normality at both time points: T1 $D(60) = 0.116$, $p = .04$ and T2: $D(60) = 0.125$, $p = .02$. The subscale scores which contribute to the overall TD score were found to be significantly positively skewed, as expected. These findings (consistent with those from the informant-rated SDQ data) suggested data transformation could potentially reduce statistically significant levels of deviation in the comparison group distribution. However, in line with the rationale provided for adopting the current analysis strategy (section 3.3.6.) the researcher proceeded without conducting a transformation procedure.

4.4.3.2. Preliminary analysis: descriptive statistics

Descriptive statistics for the self-report SDQ scores were calculated for the Pyramid group and the comparison group at T1 and T2: comparisons with UK normative data (Meltzer et al., 2000) and informant-rated results are presented in *Tables 4.8.* and *4.9.* respectively.

Table 4.8: Descriptive statistics for self-report SDQ scores: Pyramid group

SDQ subscale	Self-report SDQ UK norms Mean (SD)	Self-report (N=61)		Informant-rated (N=66)	
		Baseline (T1) Mean (SD)	Post-test (T2) Mean (SD)	Baseline (T1) Mean (SD)	Post-test (T2) Mean (SD)
Conduct problems	2.20 (1.7)	1.43 (1.56)	1.54 (1.37)	0.88 (1.26)	0.64 (1.03)
Hyperactivity/inattention	3.80 (2.7)	3.67 (2.13)	3.36 (2.03)	3.42 (2.52)	2.80 (2.0)
Emotional symptoms	2.80 (1.9)	4.21 (2.48)	3.28 (2.57)	5.03 (2.58)	3.09 (2.35)
Peer relationship problems	1.50 (1.8)	3.54 (2.32)	2.41 (1.81)	4.67 (2.33)	2.73 (2.40)
Total difficulties	10.30 (6.1)	12.97 (5.23)	10.70 (5.69)	13.98 (4.88)	7.24 (2.28)
Prosocial behaviour (strength)	8.0 (2.4)	7.18 (1.88)	7.72 (2.32)	6.12 (2.38)	7.24 (2.28)

Table 4.9: Descriptive statistics for self-report SDQ scores: comparison group

SDQ subscale	Self-report SDQ UK norms Mean (SD)	Self-report (N=60)		Informant-rated (N=51)	
		Baseline (T1) Mean (SD)	Post-test (T2) Mean (SD)	Baseline (T1) Mean (SD)	Post-test (T2) Mean (SD)
Conduct problems	2.20 (1.7)	1.38 (1.52)	1.42 (1.74)	0.59 (1.33)	0.53 (1.01)
Hyperactivity/inattention	3.80 (2.7)	3.25 (1.95)	2.97 (1.95)	2.43 (2.64)	2.24 (2.62)
Emotional symptoms	2.80 (1.9)	2.38 (1.95)	2.33 (2.14)	1.29 (1.55)	1.39 (2.01)
Peer relationship problems	1.50 (1.8)	1.75 (1.35)	1.53 (1.47)	0.98 (1.21)	1.18 (1.74)
Total difficulties	10.30 (6.1)	8.77 (4.61)	8.25 (5.13)	5.29 (4.96)	5.33 (5.40)
Prosocial behaviour (strength)	8.0 (2.4)	7.70 (1.83)	7.85 (1.84)	7.61 (2.12)	7.75 (2.25)

An inspection of the self-report SDQ mean scores at T1 (*Table 4.8.*) revealed that the Pyramid group scored higher on the emotional symptoms and peer relationship problems subscales, and total difficulties than the general population. The mean score on the hyperactivity/inattention subscale was similar to the normative mean score, whereas for conduct problems, the Pyramid group's mean score was slightly lower. Prosocial behaviour was also marginally lower than the normative score. According to the three-band (and four-band) cut-off criteria (*Table 3.2.*), the TD mean score for the Pyramid group fell in the 'normal' (or 'close to average') range, as did mean scores on the separate subscales for emotional symptoms, conduct problems, and hyperactivity/inattention. The peer relationship problems mean score fell in the 'normal' range in the original three-band categorisation but was classified as 'slightly raised' in the more recent, four-band system. The prosocial behaviour mean score was within the 'normal' (or 'close to average') range.

Compared to informant-rated assessments, the self-report SDQ results for the Pyramid group identified fewer overall difficulties at T1: the mean TD score ($M = 12.97$, $SD = 5.23$) was lower than the informant-rated mean score ($M = 13.98$, $SD = 4.88$) and less reduction

was demonstrated at T2: $M = 10.70$, $SD = 5.69$ compared to $M = 9.06$, $SD = 5.37$ respectively. Closer scrutiny of the subscale scores revealed that pupils in the Pyramid group rated themselves with higher conduct problems compared to adult assessments at T1: $M = 1.43$, $SD = 1.56$ compared to $M = 0.88$, $SD = 1.26$ respectively. This trend was consistent at T2: $M = 1.54$, $SD = 1.37$ compared to $M = 0.64$, $SD = 1.03$. Self-reported mean prosocial behaviour scores were very similar to informant ratings at T2: $M = 7.72$, $SD = 2.32$ compared to $M = 7.24$, $SD = 2.38$ respectively. However, fewer self-reported difficulties were identified on the emotional symptoms and peer relationship problems subscales than by informants at T1. For emotional symptoms: $M = 4.21$, $SD = 2.48$ compared to $M = 5.03$, $SD = 2.58$ respectively and for peer relationship problems: $M = 3.54$, $SD = 2.32$ compared to $M = 4.67$, $SD = 2.33$ respectively. Cross-informant mean ratings on these two subscales were more similar at T2. For emotional symptoms: $M = 3.28$, $SD = 2.57$ compared to $M = 3.09$, $SD = 2.35$ and for peer relationship problems: $M = 2.41$, $SD = 1.81$ compared to $M = 2.73$, $SD = 2.40$.

Self-report SDQ subscale mean scores for the comparison group were similar to normative scores on all subscales at T1, with lower overall total difficulties. All scores fell securely within the 'normal (or 'close to average') banding. Conversely, results for the comparison group's self-report data revealed higher ratings of need than that identified by the informant reports, showing a disparate trend in cross-informant agreement identified in the Pyramid group data. Higher total difficulties at T1 and T2 were reported: the self-report mean TD score at T1 ($M = 8.77$, $SD = 4.61$) was higher than the informant rating ($M = 5.29$, $SD = 4.96$). This trend was consistent at T2: $M = 8.25$, $SD = 5.13$ compared to $M = 5.33$, $SD = 5.40$). Comparison pupils had higher self-reported scores on all four difficulties subscales compared to informants (with the highest discrepancy on emotional symptoms at T1: $M = 2.38$, $SD = 1.96$ compared to $M = 1.29$, $SD = 1.55$). In line with the Pyramid group data, prosocial behaviour ratings were very similar to informant ratings at both time points.

At T2 the self-reported mean TD score for the Pyramid group was lower than at T1 and had shifted to a score comparable to the general population (falling within the 'normal' or 'close to average' banding). Mean scores for emotional symptoms and peer relationship problems were also reduced from T1 and likewise fell within the 'normal' or 'close to average' range. Mean scores for conduct problems and hyperactivity/inattention and for prosocial behaviour demonstrated less change from T1 to T2; all remained within the 'normal' or 'close to average' range. Mean scores for the comparison group demonstrated minimal change from T1 to T2 across all subscales and subsequently there was no movement in banding. The largest shift was on hyperactivity/inattention scores ($M = 3.25$, $SD = 1.95$ to $M = 2.97$, $SD = 1.95$) and the smallest shift on conduct scores ($M = 1.38$, $SD = 1.52$ to $M = 1.42$, $SD = 1.74$).

4.4.3.3. Inter-rater agreement on the SDQ: correlational analysis

Multi-informant ratings are considered the most effective predictors of emotional and behavioural difficulties (Goodman et al., 2000a). Satisfactory levels of cross-informant agreement between SDQ self-report and proxy scores (parents or teachers) have been established in clinical and community samples (section 3.3.4.1.1.). To determine the degree of agreement between raters on the SDQ measures from the current study, reliability analysis using Pearson's correlation coefficient (r) was conducted on the Pyramid group data. Results from T1 assessment demonstrated a significant weak-to-moderate, positive correlation between informant-rated and self-report TD scores: $r(59) = .29$, $p = .02$.

To further scrutinise cross-informant agreement at T1, correlational analysis was run on the four difficulties subscales which comprise the TD scale. Results demonstrated a non-significant correlation between raters on emotional symptoms: $r(59) = .22$, $p = .10$, peer relationship problems: $r(59) = .21$, $p = .10$ and conduct problems: $r(59) = .07$, $p = .96$.

However, on the hyperactivity/inattention subscale a weak positive correlation just reached significance: $r(59) = .25, p = .05$. Correlational analysis on the prosocial subscale failed to demonstrate significance: $r(59) = .19, p = .36$. At T2 reliability analysis showed that the inter-rater correlation for TD scores failed to achieve significance: $r(59) = .11, p = .41$, with none of the composite subscales demonstrating significant results. However, T2 cross-informant scores on the prosocial behaviour subscale showed a moderate, positive correlation was significant: $r(59) = .3, p = .02$. Although cross-informant agreement did not demonstrate a statistically significant result on the TD scale at T2 both informant-rated and self-reported data from the SDQ measures had shown a similar pattern over time: total difficulties scores (and difficulties subscale scores) for the Pyramid group decreased from T1 to T2 (*see section 4.5.1. discussion on cross-informant agreement*).

4.4.3.4. Total difficulties scores: between and within group differences

To evaluate the effects on TD scores over time a mixed model ANOVA was conducted with group type (Pyramid or comparison) as the between groups factor and time point (T1 or T2) as the repeated measures factor. Levene's test was non-significant and equal variances were assumed ($F = 1.10, p = .30$; $F = 3.12, p = .08$). There was a significant main effect of time point: $F(1, 119) = 8.16, p = .01, \eta^2 = .06$, demonstrating that TD scores at T2 were significantly lower than TD scores at T1. There was also a significant main effect of group type: $F(1, 119) = 17.01, p < .001, \eta^2 = .125$. The interaction effect between time point and group type did not reach significance: $F(1, 119) = 3.22, p = .07, \eta^2 = .125$.

Tests of simple effects were conducted to further interrogate the results and examine the main effect of group type at the two time points. A repeated measures t-test demonstrated that there was a significant decrease in mean TD score ($M = 12.97, SD = 5.23$ to $M = 10.70, SD = 5.69$) from T1 to T2 for the Pyramid group: $t(60) = 3.45, p = .001$.

This generated a small-to-medium effect size ($d = 0.41$). Profile analysis (equivalent to the between groups main effect) revealed a significant difference in mean TD scores between groups (averaged across both time points) and a significant within subjects effect (manifest in the reduction in mean TD scores across time for the Pyramid group). The profile plots have been presented in *Figure 4.2*.

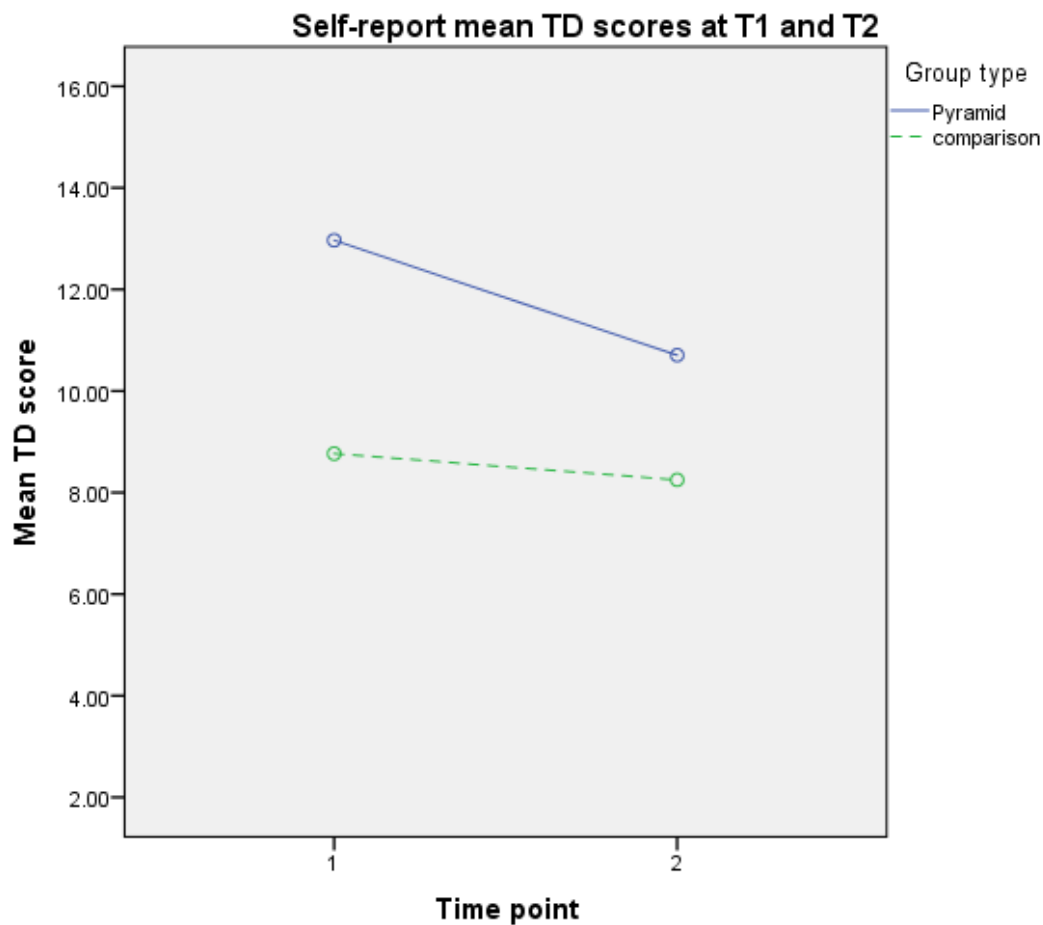


Figure 4.2: Profile plots for the Pyramid and comparison groups: self-report data

An independent samples t-test demonstrated a significant difference in mean TD scores between the Pyramid group and the comparison group at T1: $t(119) = 4.68, p < .001$. This generated a large effect size ($d = 0.85$). The Pyramid group self-reported more socio-emotional difficulties at T1 than their comparison group counterparts. This

suggested that the young people selected for Pyramid identified themselves as more 'at risk' of developing socio-emotional problems than their comparison group peers.

A significant decrease in TD scores for the Pyramid group from T1 (M = 12.97, SD = 5.23) to T2 (M = 10.70, SD = 5.69) brought post-test mean scores more in line with the comparison group. The mean TD score for the comparison group at T1 (M = 8.77, SD = 4.61) demonstrated marginal change at T2 (M = 8.25, SD = 5.13). However, a post-test independent samples t-test showed the difference between groups was significant at T2: $t(119) = 2.49, p = .01$. To take account of multiple testing the criterion for significance was adjusted (ASL: .02). The minimal pattern of change evident in the comparison group suggests that the significant decrease in mean TD score manifest in the Pyramid group was not attributable to typical development alone.

4.4.3.5. Gender, ethnicity and socio-economic status as moderators

Analysis of the informant-rated SDQ data (TD scores) for the Pyramid group showed neither gender, ethnicity or socio-economic status had a significant moderating effect: Pyramid had an equivalent impact on participants irrespective of these variables. To determine whether the self-report data were consistent with these findings a series of mixed model ANOVAs were run on the Pyramid group data only. Levene's test was non-significant and equal variances were assumed ($F = 0.51, p = .82$; $F = 0.61, p = .44$). Results demonstrated a non-significant main effect of gender: $F(1, 59) = 0.25, p = .62, \eta^2 = .004$. There was a significant main effect of time point: $F(1, 59) = 11.72, p = .001, \eta^2 = .166$ but a non-significant interaction effect of gender over time: $F(1, 59) = .06, p = .81, \eta^2 = .001$. This indicated (in line with results from informant-rated data) that the mean TD score for males and females in the Pyramid group decreased at a similar rate from T1 to T2.

The collapsed ethnic groups used to categorise Pyramid pupils for the informant-rated data analysis (*Table 4.6.*) were also utilised for the self-report data analysis. Levene's test was non-significant and equal variances were assumed ($F = 2.37, p = .08$; $F = 0.16, p = .92$). Results demonstrated a non-significant main effect of ethnicity: $F(3, 57) = 0.50, p = .68, \eta^2 = .03$. There was a significant main effect of time point: $F(1, 57) = 6.94, p = .01, \eta^2 = .107$ but a non-significant interaction effect of ethnicity over time: $F(3, 57) = .24, p = .87, \eta^2 = .01$. Again, consistent with previous findings, the mean TD score of Pyramid pupils demonstrated a comparable decrease over time irrespective of ethnicity.

For the SES data (indicated by FSM eligibility) Levene's test was non-significant and equal variances were assumed ($F = 0.02, p = .87$; $F = 0.22, p = .64$). Results identified a non-significant main effect of SES: $F(1, 59) = 0.40, p = .53, \eta^2 = .007$. There was a significant main effect of time point on TD scores: $F(1, 59) = 9.05, p = .004, \eta^2 = .132$ but a non-significant interaction effect between SES and time point: $F(1, 59) = 0.49, p = .49, \eta^2 = .01$. A pattern of change consistent with gender and ethnicity was demonstrated: the decrease in mean TD score for pupils in the Pyramid group was similar over time regardless of socio-economic status (based on FSM eligibility).

4.4.3.6. The SDQ subscale analysis

To explore the results from the self-report data further, differences in subscale scores were examined using a series of mixed model ANOVAs. Descriptive statistics for the Pyramid and comparison groups on the SDQ subscales at T1 and T2 are presented in *Table 4.9.1.* and significant within group differences in mean scores from T1 to T2 have been indicated.

Table 4.9.1: SDQ (self-report) mean subscale scores at T1 and T2

SDQ subscale	Pyramid group (N=61)		Comparison group (N=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)

* $p < .05$, ** $p < .01$

The three subscales pertinent to the Pyramid intervention demonstrated mixed results.

Prosocial behaviour: Levene's test was non-significant ($F = 0.27$, $p = .60$) for T1 data, but significant for T2 data ($F = 5.03$, $p = .03$) and results should be interpreted with caution. There was a non-significant effect of time on the mean prosocial behaviour score: $F(1,119) = 3.11$, $p = .08$, $\eta^2 = .03$ and a non-significant interaction of time with group type: $F(1,119) = 0.96$, $p = .32$, $\eta^2 = .008$. The prosocial behaviour mean score did not significantly change for either group from T1 to T2. This finding was inconsistent with results from the informant-rated subscale data which showed prosocial behaviour had increased significantly over time for the Pyramid group but not for the comparison group (section 4.5.1.).

Emotional symptoms: Levene's test was significant at T1 and T2 so results should be interpreted with caution ($F = 5.53$, $p = .02$; $F = 5.26$, $p = .03$). However, differences in the mean score for emotional symptoms over time was found to be significant: $F(1,119) = 5.48$, $p = .02$, $\eta^2 = .04$ and a significant interaction effect with group type was observed: $F(1,119) = 4.42$, $p = .04$, $\eta^2 = .03$. This indicated that for one of the groups a significant decrease in the mean score for emotional difficulties had occurred from T1 to T2. A

follow-up test of simple effects showed the reduction for the Pyramid group was significant: $t(60) = 2.87, p = .01$. This generated a small effect size ($d = 0.37$).

For emotional symptoms a significant between groups difference evident at T1: $t(113.43) = 4.51, p < .001$ (generating a large effect size: $d = 0.8$) was not significant at T2 at the ASL of .02: $t(115.80) = 2.20, p = .03$. As Levene's test indicated unequal variances at T1 ($F = 5.46, p = .02$) and at T2 ($F = 5.26, p = .02$) degrees of freedom were adjusted accordingly.

Whilst previous research using the SDQ on a large adolescent community sample (Van Roy et al., 2006) revealed higher self-reported emotional symptoms in females than males, gender disparities were not found in the current study's analysis of informant-rated data. A mixed model ANOVA was conducted on the self-report data to examine gender differences in emotional symptoms for the Pyramid group. Results were non-significant and in line with findings from informant raters: males reported (albeit marginally) higher emotional symptoms at T1 ($M = 4.44; SD = 2.68$) than females ($M = 4.03; SD = 2.34$) and at T2 ($M = 3.44; SD = 2.65$, and $M = 3.15; SD = 2.54$ respectively). However, both genders showed a comparable reduction in emotional symptoms over time.

Peer relationship problems: Levene's test was significant for T1 data ($F = 10.27, p = .002$) but not for T2 data ($F = 3.41, p = .06$) and results should be interpreted with caution. However, results from a mixed model ANOVA demonstrated a significant change in mean scores over time: $F(1, 119) = 12.95, p < .001, \eta^2 = .09$ and a significant interaction effect with group type was observed: $F(1, 119) = 5.96, p = .02, \eta^2 = .04$. This indicated that the mean peer relationship problems score for one group decreased significantly from T1 to

T2. A test of simple effects identified a significant reduction for the Pyramid group: $t(60) = 3.51, p = .001$. This generated a medium effect size ($d = 0.54$).

Between group differences in peer relationship problems were evident at both time points with the Pyramid group showing higher difficulties, at T1: $t(96.67) = 5.20, p < .001$ and at T2: $t(119) = 2.93, p = .004$. This generated a large effect size at T1 ($d = 0.9$) and a medium effect size at T2 ($d = 0.5$). As Levene's test indicated unequal variances at T1 ($F = 10.28, p = .002$) degrees of freedom were adjusted accordingly.

Although Pyramid does not directly address conduct problems or hyperactivity/inattention analysis for the subscales which map onto externalising domains was undertaken.

Conduct problems: Levene's test was non-significant and equal variances were assumed ($F = 0.004, p = .95; F = 2.16, p = .14$). Results revealed the difference in mean conduct scores over time was non-significant: $F(1, 119) = 0.27, p = .61; \eta^2 = .002$ and no significant interaction effect with group type was observed: $F(1, 119) = 0.08, p = .78, \eta^2 = .001$. No significant change in mean scores for conduct problems from T1 to T2 was evident in either the Pyramid or comparison group.

Hyperactivity/inattention: Levene's test was non-significant and equal variances were assumed ($F = 0.82, p = .38; F = 0.30, p = .59$). There was a non-significant effect on mean hyperactivity/inattention scores over time: $F(1, 119) = 2.25, p = .14, \eta^2 = .02$, with no significant interaction effect with group type observed: $F(1, 115) = .01, p = .94, \eta^2 = .00004$. Consistent with the results for conduct problems, a significant change in hyperactivity/inattention from T1 to T2 was not evident for either group.

4.4.4. The WBQ results

A second self-report measure of socio-emotional well-being, the WBQ (NPC, 2010) was implemented in Study One.

4.4.4.1. Preliminary analysis: data exploration

Visual inspection of histograms for the full data set indicated that the data were negatively skewed (i.e. most participants had high scores, indicating higher levels of well-being).

Values of skewness and their respective standard errors were used to calculate ratios and assess significance: at T1 subscales of the WBQ were found to be significantly negatively skewed ($p < .05$). However, an inspection of the original mean compared with the 5% trimmed mean for the respective subscales of the full data set identified similar mean values. To further interrogate the data, scores for the Pyramid and comparison groups were inspected separately to identify their distributions.

A Kolmogorov-Smirnov test was conducted to ascertain deviations from the normal distribution. Results for the Pyramid group demonstrated that on five subscales (self-esteem, emotional well-being, resilience, satisfaction with school, and overall life-satisfaction) the data were normally distributed at T1 ($p > .05$). On three subscales, T1 data for the Pyramid group were negatively skewed and deviated significantly from the normal distribution: satisfaction with friends: $D(54) = .179$, $p = .001$, satisfaction with family: $D(54) = .173$, $p < .001$, and satisfaction with community: $D(54) = .145$, $p = .01$. However, an inspection of the original mean for each subscale compared with its respective 5% trimmed mean identified similar values for both T1 and T2 data.

Results for the comparison group T1 data demonstrated that on the subscales related to satisfaction with friends and satisfaction with family, the data were significantly negatively skewed: $D(58) = .139$, $p = .01$, and $D(58) = .166$, $p < .001$ respectively. This was also

the case for resilience: $D(58) = .165, p < .001$ and overall life satisfaction: $D(58) = .150, p = .002$. All remaining subscales met assumptions of normality ($p > .05$). Again, an inspection of the original mean for each subscale compared with its respective 5% trimmed mean identified similar values for T1 and T2 data.

Consistent with the existing data analysis strategy (section 4.3.), the researcher proceeded without conducting a data transformation procedure.

4.4.4.2. Preliminary analysis: descriptive statistics

Descriptive statistics for the WBQ subscales were calculated for the Pyramid group and the comparison group at baseline (T1) and post-test (T2) and compared to UK normative scores provided by NPC for males and females separately. Mean scores are presented in *Table 4.9.2*. Main trends for the subscales pertinent to Pyramid are described underneath.

Table 4.9.2: Descriptive statistics for WBQ scores by gender and group, and UK norms

Subscale domain (min-max score)	UK norms Mean (SD)	Pyramid group (N=54)		Comparison group (N=58)	
		Baseline (T1) Mean (SD)	Post-test (T2) Mean (SD)	Baseline (T1) Mean (SD)	Post-test (T2) Mean (SD)
Overall life satisfaction (0-10)					
Male	7.70 (2.03)	7.21 (2.04)	8.04 (1.49)	8.54 (1.64)	7.67 (1.76)
Female	7.73 (2.0)	6.01 (2.15)	6.97 (1.56)	7.47 (1.93)	7.50 (1.75)
Self-esteem (0-40)					
Male	29.64 (5.70)	29.67 (5.65)	31.42 (5.01)	28.88 (4.76)	28.97 (5.60)
Female	28.15 (6.10)	24.83 (7.14)	26.70 (5.84)	28.79 (5.94)	29.32 (4.76)
Emotional (0-20) well-being					
Male	14.63 (4.28)	12.58 (4.57)	15.29 (2.58)	14.92 (3.94)	13.38 (4.69)
Female	12.87 (4.43)	10.17 (4.91)	13.20 (3.03)	14.18 (4.27)	12.52 (3.89)
Resilience (0-20)					
Male	17.70 (3.19)	15.46 (3.73)	16.38 (2.32)	15.33 (2.01)	14.38 (3.45)
Female	14.04 (3.34)	13.27 (3.73)	13.60 (2.50)	15.50 (3.22)	14.59 (2.90)
Satisfaction: friends (0-20)					
Male	16.46 (3.13)	15.50 (4.44)	16.75 (2.51)	17.38 (1.95)	17.33 (3.41)
Female	17.0 (2.96)	15.33 (4.29)	16.0 (3.27)	17.09 (2.05)	16.76 (3.03)
Satisfaction: family (0-20)					
Male	16.74 (3.60)	16.75 (2.38)	18.17 (2.01)	17.71 (2.12)	17.88 (2.93)
Female	16.30 (3.70)	15.43 (5.24)	15.27 (3.39)	16.47 (3.19)	17.0 (3.08)
Satisfaction: comm.*(0-20)					
Male	13.20 (4.60)	13.21 (4.15)	15.71 (3.37)	14.92 (2.92)	14.79 (3.64)
Female	13.29 (4.27)	13.60 (4.31)	14.30 (3.32)	14.77 (3.47)	14.62 (3.02)
Satisfaction: school (0-20)					
Male	14.08 (4.40)	15.0 (3.60)	15.75 (3.91)	15.50 (3.12)	14.67 (3.76)
Female	13.77 (4.17)	13.70 (4.43)	14.10 (3.82)	13.62 (3.66)	14.0 (2.69)

*comm. = community

For overall life satisfaction, males in the Pyramid group had a slightly lower mean score than the general population at T1 but higher at T2. Females in the Pyramid group had lower mean scores than the males in the Pyramid group at both time points despite an increase at T2. Self-esteem mean scores for males in the Pyramid group were higher at T1 and T2 whilst for females they were lower at both. Moreover, Pyramid females scored lower on all subscales compared to Pyramid males, except for satisfaction with community at T1. Males and females had lower mean scores on emotional well-being than the general population at T1 but both were higher at T2. However, mean resilience scores for

males and females were lower at both time points. Mean score for satisfaction with friends was also lower for females at both time points, for males it was slightly higher than the general population at T2. The mean score for satisfaction with school had slightly increased for males and females at T2 to marginally above that of the general population.

For the comparison group, the mean score for overall life satisfaction was higher for males at T1 and both male and female mean scores closely resembled those of the general population at T2. Mean scores for self-esteem were also similar for both genders compared to the general population at T2, albeit slightly lower for males and slightly higher for females. For emotional well-being an opposite pattern to that of the Pyramid group was discerned. Mean scores for both genders were higher than the general population at T1 but this had dropped to below (albeit marginally for females) at T2. Compared to the general population, mean resilience scores were lower for males but higher for females at both time points. Whereas, for satisfaction with friends, mean scores were higher at T1 and T2 for males but slightly lower for females at T2. The satisfaction with school mean score decreased for males over time but both male and female mean scores closely resembled those of the general population at T2.

Despite showing an increase in mean scores from T1 to T2, females in the Pyramid group had the lowest mean scores across all WBQ subscales at both time points (except for emotional well-being at T2 and satisfaction with school at T1 and T2). This indicated that overall, Pyramid group females had lower levels of subjective well-being than Pyramid group males, and males and females in the comparison group. However, on the subscales pertinent to Pyramid, T2 mean scores for both groups closely resembled UK norms, with the exception of self-esteem for Pyramid females (lower by 1.48) and resilience for comparison group males (lower by 3.32).

To further investigate the pattern of change over time, descriptive statistics for the Pyramid group and comparison group (both genders) were calculated and are presented in *Table 4.9.3*.

Table 4.9.3: WBQ mean subscale scores at T1 and T2

WBQ subscale	Pyramid group		Comparison group	
	Baseline (T1) Mean (SD)	Post-test (T2) Mean (SD)	Baseline (T1) Mean (SD)	Post-test (T2) Mean (SD)
Overall life satisfaction (0-10)	6.57 (2.16)	7.44 (1.61)	7.91 (1.88)	7.57 (1.74)
Self-esteem (0-40)	26.98 (6.90)	28.80 (5.93)	28.83 (5.44)	29.15 (5.08)
Emotional well-being (0-20)	11.24 (4.87)	14.13 (3.0)	14.48 (4.12)	12.89 (4.22)
Resilience (0-20)	14.22 (3.73)	14.83 (2.77)	15.43 (2.77)	14.48 (3.11)
Satisfaction with friends (0-20)	15.41 (4.32)	16.33 (2.95)	17.21 (1.20)	17.0 (3.18)
Satisfaction with school (0-20)	14.28 (4.10)	14.83 (3.91)	14.40 (3.54)	14.28 (3.16)
Satisfaction with family (0-20)	16.02 (4.23)	16.56 (3.19)	16.98 (2.84)	17.36 (3.03)
Satisfaction with community (0-20)	13.43 (4.21)	14.93 (3.39)	14.83 (3.23)	14.69 (3.26)

An initial inspection of the descriptive statistics at T1 showed the comparison group had higher mean scores across all subscales, demonstrating a greater level of subjective well-being than those in the Pyramid group. The biggest difference in mean scores was for emotional well-being (a difference of 3.24) and the lowest difference was for satisfaction with school (a difference of 0.12). At T2, mean scores for the Pyramid group had increased on all subscales and were higher than the scores for the comparison group on emotional well-being (a difference of 1.24) and marginally higher on satisfaction with school, satisfaction with community, and resilience. For the comparison group, T2 scores for emotional well-being and resilience were lower than at T1 (a decrease of 1.59 and 0.95 respectively) and marginally lower for overall life satisfaction, and satisfaction with school and community.

4.4.4.3. WBQ subscales: between and within group differences

To evaluate the effects on well-being scores over time, a series of mixed model ANOVAs were conducted with group type (Pyramid or comparison) as the between groups factor and time point (T1 or T2) as the repeated measures factor. Analyses were conducted on the overall life satisfaction subscale and the four subscales pertinent to the Pyramid intervention (self-esteem, emotional well-being, resilience, and satisfaction with friends).

Overall life satisfaction: Levene's test was non-significant and equal variances were assumed ($F = 1.39, p = .24$; $F = 0.23, p = .63$). Results demonstrated a significant main effect of group type: $F(1, 110) = 5.23, p = .02, \eta^2 = .05$. In addition, there was a highly significant interaction effect between time point and group type: $F(1, 115) = 28.18, p < .001, \eta^2 = .165$, indicating that the overall life satisfaction mean score had shifted significantly over time for one group. A test of simple effects identified a significant increase from T1 to T2 for the Pyramid group: $t(53) = 3.75, p < .001$. This generated a medium effect size ($d = 0.44$). Moreover, a significant between groups difference identified at T1: $t(110) = 3.51, p = .001$ (with a medium effect size: $d = 0.66$) was not evident at T2: $t(110) = .39, p = .39$. The criterion for significance was adjusted to .02. Results suggest that post-intervention, overall life satisfaction for the Pyramid group had increased to a level similar to that of the comparison group. Profile analysis (equivalent to the between groups main effect) is presented in *Figure 4.3*.

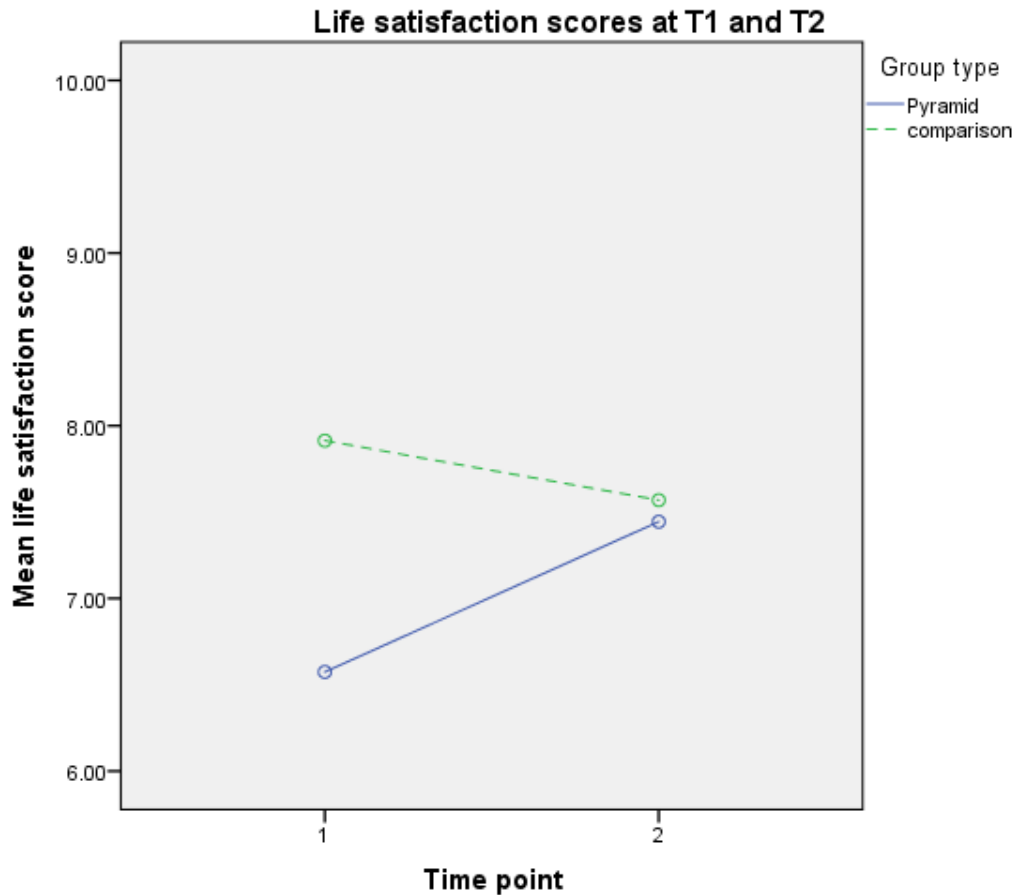


Figure 4.3: Profile plots for the Pyramid and comparison groups: WBQ data

Self-esteem: Levene's test was non-significant and equal variances were assumed ($F = 1.26, p = .26$; $F = 0.69, p = .41$). There was no significant interaction effect between time point and group type: $F(1,110) = 3.45, p = .07, \eta^2 = .03$. However, there was a significant main effect of time point: $F(1,110) = 6.52, p = .01, \eta^2 = .05$. A test of simple effects revealed that mean self-esteem scores had increased significantly from T1 to T2 for the Pyramid group: $t(53) = 2.69, p = .01$. This generated a small effect size ($d = 0.28$).

Emotional well-being: Levene's test was non-significant at T1 but significant at T2 and results should be interpreted with caution ($F = 1.72, p = .19$; $F = 6.82, p = .01$). However, there was a highly significant interaction effect between time point and group type: $F(1,110) = 40.53, p < .001, \eta^2 = .274$. Tests of simple effects identified a significant

increase in the mean emotional well-being score for the Pyramid group: $t(53) = 6.26, p < .001$. This generated a medium effect size ($d = 0.63$). Moreover, there was a significant decrease in the mean emotional well-being score from T1 to T2 for the comparison group: $t(57) = 3.19, p = .002$. This generated a small effect size ($d = 0.31$). (The criterion for significance was adjusted to .03 to account for the number of multiple comparisons.)

Resilience: Levene's test was significant at T1 ($F = 7.27, p = .01$) but non-significant at T2 ($F = .199, p = .66$) and results should be interpreted with caution. However, results demonstrated a significant interaction effect between time point and group type: $F(110) = 7.68, p = .007, \eta^2 = .07$, indicating the resilience scores of one group had shifted significantly over time. A test of simple effects revealed a decrease in the mean resilience score over time for the comparison group was significant: $t(57) = 2.32, p = .02$. This generated a small effect size ($d = 0.32$).

Satisfaction with friends: Levene's test was significant at T1 ($F = 19.42, p < .001$) but non-significant at T2 ($F = 0.01, p = .94$) and results should be interpreted with caution. No significant interaction effect was observed but there was a significant main effect of group type: $F(110) = 5.50, p = .02$. However, a test of simple effects demonstrated the difference in mean score from T1 to T2 for the Pyramid group just failed to achieve significance: $t(53) = 1.87, p = .06$.

The satisfaction with school subscale was relevant to the current research but a visual inspection of the means indicated minimal change for either group from T1 to T2: there was an increase of 0.55 for the Pyramid group. The satisfaction with family and satisfaction with community subscales (not immediately pertinent to the current research) also showed minimal change over time for the comparison group. However, there was a

greater increase in satisfaction with the community for the Pyramid group (an increase of 1.5) and a test of simple effects revealed a significant difference over time: $t(53) = 3.1, p = .003$.

4.4.4.4. Gender as a moderator for emotional well-being and self-esteem

Analysis of the informant-rated and self-report SDQ data for the Pyramid group showed no significant moderating effect of gender on emotional symptoms. To determine whether a similar pattern was evident in the WBQ data, a mixed model ANOVA was run on the emotional well-being subscale for the Pyramid group data only. Levene's test was non-significant and equal variances were assumed ($F = 0.11, p = .74$; $F = 0.03, p = .87$). Results showed a significant main effect of time point: $F(1, 52) = 37.60, p < .001, \eta^2 = .419$ and a significant main effect of gender: $F(1, 52) = 5.44, p = .03, \eta^2 = .09$ but no interaction between gender and time point on mean emotional wellbeing scores was observed: $F(1, 52) = 0.12, p = .73, \eta^2 = .001$. This indicated that despite males demonstrating a higher level of emotional well-being at T1 and T2 the level of well-being in this domain increased at a similar rate over time, irrespective of gender. This pattern of change is displayed in *Figure 4.4*.



Figure 4.4: Emotional well-being subscale (WBQ) by gender: Pyramid group

Analysis was also carried out for the self-esteem subscale and results demonstrated a similar pattern. Levene's test was non-significant and equal variances were assumed ($F = 0.95$, $p = .33$; $F = 0.06$, $p = .80$). There was a significant main effect of time point: $F(1, 52) = 6.94$, $p < .01$, $\eta^2 = .117$ and a significant main effect of gender: $F(1, 52) = 10.11$, $p = .002$, $\eta^2 = .163$ but no interaction effect between gender and time point: $F(1, 52) = 0.01$, $p = .93$, $\eta^2 = .0001$. Again, this suggests that despite males showing higher levels of self-esteem at both time points, mean scores increased at a comparable rate for males and females in the Pyramid group. This pattern of change is displayed in *Figure 4.5*.

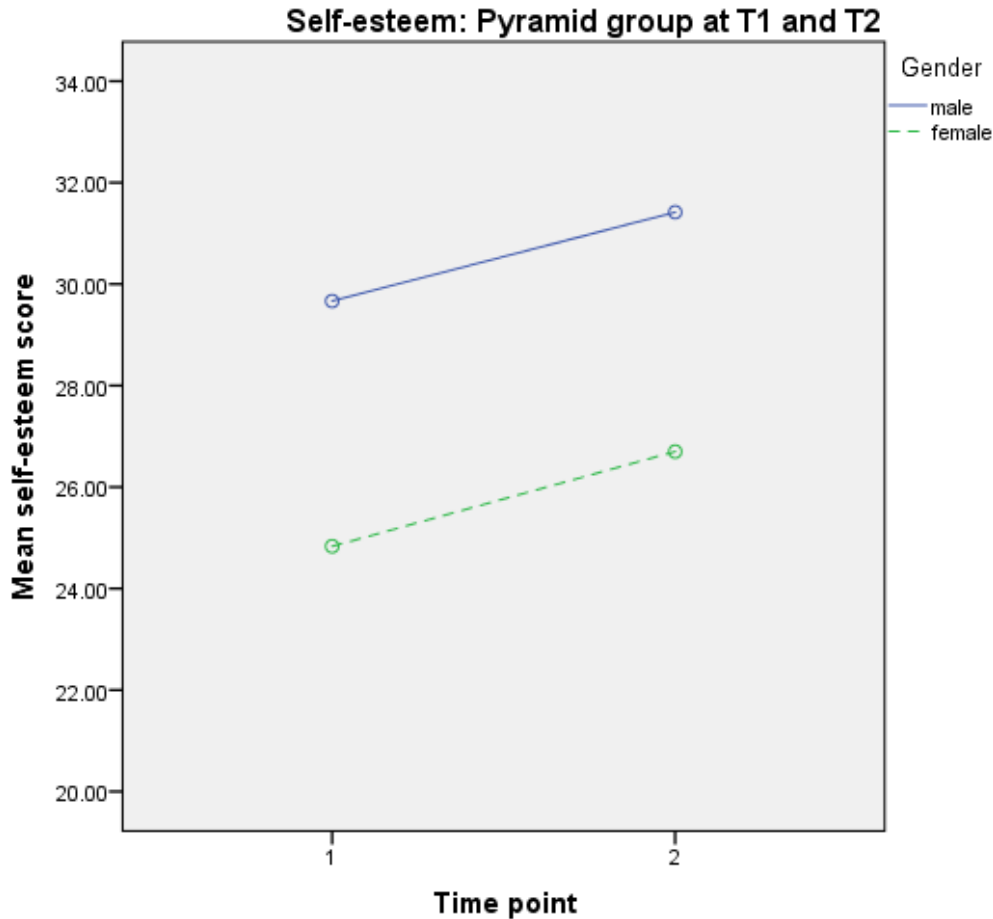


Figure 4.5: Self-esteem subscale (WBQ) by gender: Pyramid group

4.4.5. Analysis of school performance data: subject ability self-concepts

Analysis of school performance data in Study One was directed at addressing **RQ2**. Four supplementary items on the WBQ measured pupils' ability self-concept in English and Mathematics (academic well-being).

4.4.5.1. Preliminary analysis: data exploration

Visual inspection of histograms for the full data set indicated that the data were negatively skewed (i.e. most participants had high scores). Values of skewness and their respective standard errors were used to calculate ratios and assess significance: at T1 subscales of the WBQ were found to be significantly negatively skewed ($p < .05$). However, an

inspection of the original mean compared with the 5% trimmed mean for both the English and Mathematics ability self-concept subscales identified similar mean values. To further interrogate the data, scores for the Pyramid and comparison groups were inspected separately to identify their distributions.

A Kolmogorov-Smirnov test was conducted to ascertain deviations from normality. Results for both groups showed that data were negatively skewed and deviated significantly from the normal distribution ($p < .05$) at both time points. However, an inspection of the original mean with the 5% trimmed mean for the Pyramid group data at T1 and T2 identified similar mean values. This pattern in the data was consistent for comparison group T1 and T2 data.

4.4.5.2. Preliminary analysis: descriptive statistics

Descriptive statistics for ability self-concept in English and Mathematics were calculated for the Pyramid group and the comparison group at baseline (T1) and post-intervention (T2). Scores from items on the English and Mathematics ability self-concept subscales were summed individually to provide a respective total subject ability self-concept score (*Table 4.9.4*).

Table 4.9.4: Descriptive statistics for ability self-concept in English and Mathematics

Ability self-concept scale (min-max 0-12)	Pyramid group (N=54)		Comparison group (N=58)	
	Baseline (T1) Mean (SD)	Post-test (T2) Mean (SD)	Baseline (T1) Mean (SD)	Post-test (T2) Mean (SD)
English ability self-concept	8.11 (2.49)	8.46 (2.13)	8.48 (2.57)	7.64 (2.31)
Mathematics ability self-concept	6.63 (3.39)	7.15 (2.77)	8.09 (2.51)	7.57 (2.73)

Initial inspection of the means identified ability self-concept scores for the Pyramid group increased slightly in Mathematics (a difference of 0.52) and in English (a difference of 0.35) from T1 to T2. The opposite trend was discernible in the comparison group, with mean ability self-concept scores showing a slight reduction across the two time points: English (0.84) and Mathematics (0.52).

4.4.5.3. Subject ability self-concept: between and within group differences

To evaluate any significant differences in mean ability self-concept scores in English and Mathematics over time, two mixed model ANOVAs were conducted: with group type (Pyramid or comparison) as the between groups factor and time point (T1 or T2) as the repeated measures factor.

Ability self-concept in English: Levene's test was non-significant and equal variances were assumed ($F = 0.40, p = .53$; $F = 0.65, p = .42$). Results identified a significant interaction effect between time point and group type: $F(1, 110) = 9.54, p = .003, \eta^2 = .08$. However, there was a non-significant main effect of time point: $F(1, 110) = 1.62, p = .21, \eta^2 = .01$ and a non-significant main effect of group type: $F(1, 110) = 0.34, p = .56, \eta^2 = .003$. Despite no overall effects, results showed a cross-over interaction whereby the scores of one group increased over time whilst the scores of the other group decreased: the mean ability self-concept score in English increased (marginally) for the Pyramid group but decreased for the comparison group over time (*Figure 4.6*).

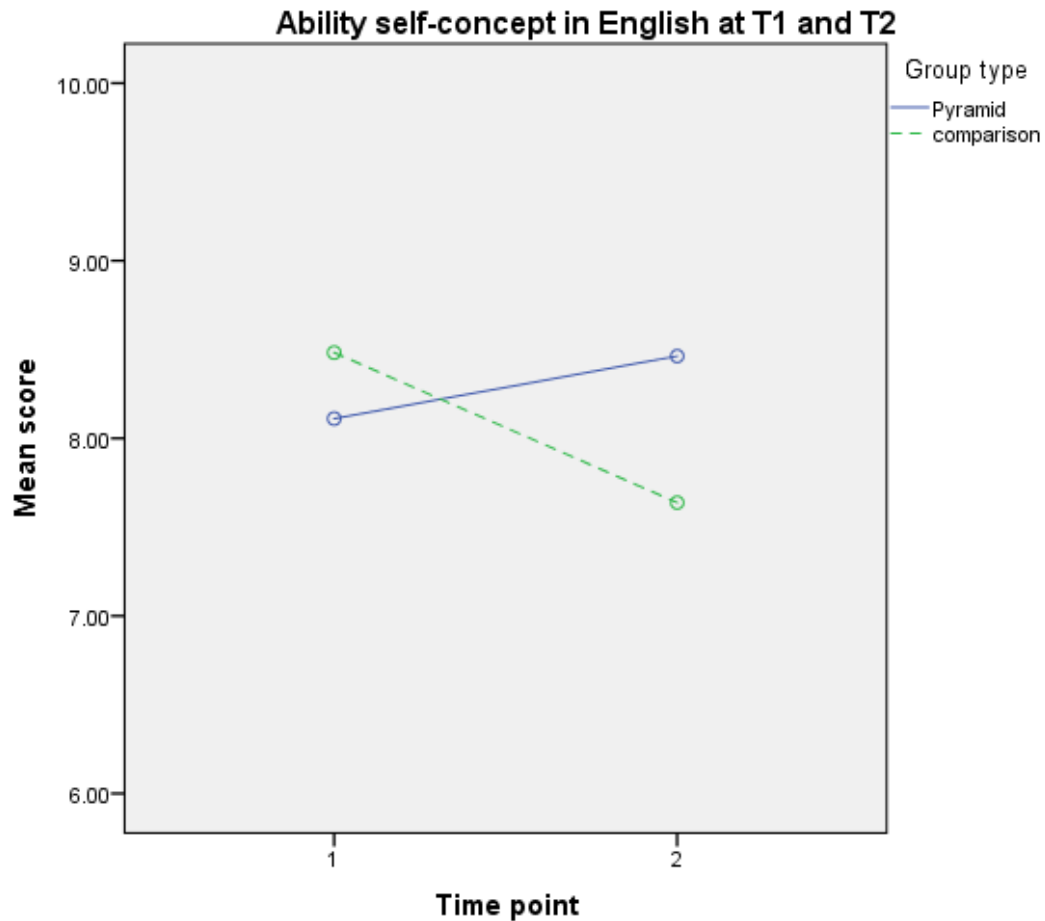


Figure 4.6: Cross-over interaction between group type and time point

A repeated measures t-test showed a significant decrease in the mean ability self-concept score in English for the comparison group from T1 to T2: $t(57) = 2.85$, $p = .01$. This generated a small effect size ($d = .37$). Visual inspection of mean scores for the Pyramid group identified minimal change.

Ability self-concept in Mathematics: Levene's test was significant at T1 ($F = 7.67$, $p = .01$) but non-significant at T2 ($F = 0.27$, $p = .61$) and results should be interpreted with caution. However, a significant interaction between time point and group type was demonstrated: $F(1, 110) = 7.05$, $p = .01$, $\eta^2 = .06$. There was a non-significant main effect

of time point: $F(1,110) = 0.00$, $p = 1.0$, $\eta^2 = .08$ and a non-significant main effect of group type: $F(1,110) = 3.48$, $p = .07$, $\eta^2 = .03$. Results, again, demonstrated a cross-over interaction whereby mean ability self-concept in Mathematics increased (marginally) for the Pyramid group but decreased (marginally) for the comparison group from T1 to T2. Ability self-concept in Mathematics for the Pyramid group had increased over time to a similar level demonstrated by the comparison group.

These findings indicate a distinct pattern of change for each group. For the Pyramid group ability self-concept in English scores showed little change over time, whereas, for the comparison group there was a significant decrease across the same time period. The apparent 'dip' experienced by the comparison group was not identified for the Pyramid group, suggesting that a possible 'buffer effect' had been generated. International research suggests perceived social support (e.g. at Pyramid club) buffers the effects of academic or other stressors on psychological well-being (e.g. Dollete, Steese, Phillips, & Matthews, 2004; Glozah, 2013; Lakey & Cohen, 2000), including negative impact on academic well-being (DeGarmo & Martinez, 2006). Moreover, despite the fact ability self-concept in Mathematics scores showed little change across time for either group, an increase for the Pyramid group at T2 combined with a concurrent decrease for the comparison group brought the scores of the two groups closer into line.

4.4.6. Analysis of school performance data: shifts in academic levels

The literature suggests (e.g. Durlak et al., 2011) that socio-emotional competency can impact on a pupil's current and prospective academic level and attainment scores.

National curriculum (NC) levels in English and Mathematics for the Pyramid group and the comparison group were collected at T1 and T2 (pupils were matched on working levels in English and Mathematics at T1). Shifts in academic performance (denoted by sub-level movement) from T1 to T2 are reported in *Table 4.9.5*.

Table: 4.9.5: Shifts in academic levels T1 to T2 in English and Mathematics

NC level shift N (%)	English		Mathematics	
	Pyramid group (N=46)	Comparison group (N=46)	Pyramid group (N=46)	Comparison group (N=46)
Same Level	19 (41.3%)	20 (43.47%)	12 (26.09%)	12 (26.09%)
Increase by 1 sub-level	14 (30.43%)	17 (36.96%)	19 (41.30%)	16 (34.78%)
Increase by 2 sub-levels	5 (10.87%)	4 (8.7%)	9 (19.57%)	5 (10.87%)
Increase by 3 sub-levels or more	1 (2.17%)	3 (6.52%)	5 (10.87%)	11 (23.91%)
Decrease by 1 sub-level	5 (10.87%)	2 (4.35%)	1 (2.17%)	2 (4.35%)
Decrease by 2 sub-levels	2 (4.35%)	0 (0%)	0 (0%)	0 (0%)

The majority of pupils in the Pyramid group (33) and comparison group (37): 71.74% and 80.43% respectively, either remained at the same level in English or had moved up by one sub-level at T2. Slightly fewer pupils in the Pyramid group (6) had improved their performance by two or three sub-levels compared to the comparison group (7): 13.04% and 15.22% respectively. However, a decrease in performance was more prevalent in the Pyramid group with seven pupils at a lower level at T2 compared to two in the comparison group: 15.22% and 4.35% respectively.

Just over a quarter of pupils in each group (12) stayed at the same Mathematics level from T1 to T2, with the majority of pupils demonstrating an improvement in performance (33 [71.74%] in the Pyramid group and 32 [69.57%] in the comparison group). However, in terms of the rate of improvement the comparison group performed better, with 11 pupils (23.91%) increasing performance by three sub-levels or more compared with five pupils (10.89%) in the Pyramid group. Only one pupil in the Pyramid group and two in the

comparison group had a lower level in Mathematics at T2. Overall, pupils' progress in Mathematics was better than in English for both groups. Mean shifts in sub-level grades at T2 for English and Mathematics are presented in *Table 4.9.6*.

Table 4.9.6: Descriptive statistics for sub-level movement from T1 to T2

Sub-level shift: (min-max: -2 to 4)	English		Mathematics	
	Pyramid group Mean (SD)	Comparison group Mean (SD)	Pyramid group Mean (SD)	Comparison group Mean (SD)
	.39 (1.04)	.74 (1.06)	1.11 (1.0)	1.28 (1.29)

To determine whether the observed trends were significant, independent t-tests were conducted. An examination of mean sub-level movement in English for the Pyramid and comparison groups showed there was a non-significant difference between groups: $t(90) = 1.58, p = .12$. Furthermore, an examination of mean sub-level movement in Mathematics showed a non-significant difference between groups: $t(84.40) = .72, p = .47$. As Levene's test indicated unequal variances ($F = 4.66, p = .03$), degrees of freedom were adjusted accordingly. Results demonstrated that mean academic levels in English and Mathematics were not significantly different at T2, with both groups continuing to demonstrate similar working levels at T2 as they did at T1.

4.4.7. Pre- and post-club preliminary feedback from attendees

Four supplementary questions on the WBQ (Pyramid group only): two at T1 and two at T2, provided preliminary feedback on participants' perceptions and expectations of Pyramid pre-club and their perceptions and experience post-club. The two pre-club questions were:

Q1: When you were invited to join the Pyramid club, how did that make you feel?

Q2: *What are you hoping to get out of Pyramid club?*

All respondents (N=54) selected at least one answer to Q1 and 11 selected two or three from the seven options. The most frequent answers to how pupils felt about being invited to Pyramid club were: 'Curious' (25 [46%] of respondents), and 'Happy' (24 [44%] of respondents). Nevertheless, eight (14%) and five (8%) respondents described themselves as 'worried' or 'uncertain' respectively before attending the first Pyramid session. Most pupils who gave more than one answer (six) described themselves as 'happy', 'pleased' and 'curious'. Four pupils who selected either 'worried' or 'uncertain' also chose 'curious'. No pupil selected 'neutral' or 'suspicious'. Overall, responses suggest the majority of pupils perceived being invited to Pyramid club as positive.

For Q2, all respondents (N=54) gave at least one answer and the majority selected two or more from the eight options. 'Improve my confidence' was selected by 35 (64%) of respondents as an outcome they hoped to achieve by attending Pyramid club. 'Have fun' (27) and 'make new friends' (25) were the second most common choices. Over one quarter (15 pupils; 27%) hoped to both 'make new friends' and 'improve my confidence'. 'Learn something new' and 'Try new things' were selected by 33% and 44% of pupils respectively. However, 'improve my confidence' was the only item selected by over 50% of respondents and suggests that pupils had some awareness of the aims of Pyramid. Moreover, 25 respondents (45%) hoped to 'become less worried about life', which indicated that almost half of selected pupils were experiencing some level of socio-emotional difficulty. A further 26 (48%) respondents hoped Pyramid would help them in other aspects of school life by enabling them to 'do better in school'. Thirteen respondents (24%) selected both to 'become less worried about life' and to 'do better in school', suggesting that for some pupils worries might be related to school performance. No respondents selected 'not sure'.

The two post-club questions were:

Q1: How would you describe your experience of going to a Pyramid club?

Q2: How do you think Pyramid club has changed you as a person?

The majority of respondents (N=54) described their experience of attending Pyramid as positive and beneficial: 43 (79%) said 'it was a 'good way to meet new people' and 46 pupils (84%) reported they had 'learnt new things'. These outcomes link to specific pre-club expectations (e.g. 'make new friends' and 'learn something new'), suggesting for some attendees expectations had been met. Benefits accrued were also perceived as extending beyond the immediate club environment: 31 respondents (57%) claimed attending Pyramid had helped them to 'enjoy school more' and 27 (50%) stated 'It made me think more about myself and my life'. Most pupils selected more than one response to the seven options: the most frequent combination (chosen by 41 pupils) was 'I learnt new things' and 'it was a 'good way to meet new people'. No respondent selected 'It was a waste of time' or 'It has made me enjoy school less'. However, ten pupils (21%) claimed 'It was hard at first but I enjoyed it in the end'.

The majority of respondents (N=54) identified improvements in socio-emotional competencies as an outcome of attending Pyramid club and selected more than one response to the eight options for Q2: 30 pupils (74%) described themselves as 'more confident', 28 (51%) pupils were 'more likely to get involved in activities' and 35 (64%) reported being 'more adventurous and willing to try new things.' The most common change, identified by 42 (77%) pupils was, 'I find it easier to talk to people', whilst 57% of respondents agreed they 'felt happier in school' after attending Pyramid club. The most frequent combined response (chosen by 33 pupils; 61%) was 'I'm more confident now' and 'I find it easier to talk to people'. However, three pupils (2%) reported that for them attending Pyramid had 'made no difference at all' to any aspect of their life. No respondent selected 'makes me more anxious' or 'I like school even less'.

4.5. Summary and discussion of the quantitative findings

4.5.1. Pyramid's impact on socio-emotional well-being

Overall, results from the three well-being measures identified a consistent pattern of change for the Pyramid group, demonstrating improvements in socio-emotional well-being over time. This was in line with findings from primary school evaluations (Cassidy et al., 2014; 2015; McKenna et al., 2014; Ohi et al., 2012; 2008). The Pyramid group participants were selected on their suitability and it was expected that their baseline total difficulties would exceed those of the comparison group. The prediction that a higher mean TD score for the Pyramid group pre-club would have significantly decreased post-club was initially supported by the informant-rated SDQ findings. Results showed a highly significant main effect of group type, accounting for 33.2% of the variance. Nonetheless, despite a significant within (Pyramid) group reduction in mean TD score, a statistically significant between groups difference remained post-test: with the Pyramid group continuing to display a higher level of total difficulties compared to the comparison group that showed consistently low prevalence rates of psychopathology, typical of the general population.

In the current study, a distinct trajectory of change for the Pyramid group compared to the comparison group was observed (characterised by a significant reduction in mean TD score from pre- to post-test which generated a large effect size: $d = 0.96$). With respect to the general population (SDQ informant-rated norms for 11- to 15-year-olds: Meltzer et al., 2000) this shifted the Pyramid group mean score from the 'borderline' (slightly raised) 'caseness' banding to 'normal' (the lowest risk category for developing socio-emotional difficulties: section 4.4.2.2.). In contrast, the trajectory for the comparison group demonstrated very little change, with participants scoring securely in the 'normal' banding at both time points.

The prediction that there would be a significant effect on specific domains targeted by Pyramid was also supported. Emotional symptoms and peer relationship problems showed a highly significant ($p < .001$) reduction from pre- to post-test, generating large effect sizes: $d = 0.79$; $d = 0.82$ respectively. This shifted the Pyramid group's category of need from 'borderline' to 'normal' for emotional symptoms and from 'borderline' (or 'high': four-band categorisation) to 'normal' for peer relationship problems. These findings are consistent with earlier studies examining specific difficulties subscales (Cassidy et al., 2014; 2015; McKenna et al., 2014; Ohl et al., 2012). The current findings were coupled with a highly significant ($p < .001$) increase in prosocial behaviour (with a medium effect size: $d = .48$). Again, consistencies were found with primary school evaluations (Cassidy et al., 2014; Ohl et al., 2012). Despite these improvements, in line with TD findings, a consistent between groups difference remained (emotional symptoms and peer relationship problems) with the Pyramid group showing higher need. Nonetheless, distinct patterns of change suggested that significant improvements in specific socio-emotional competencies manifest in the Pyramid group could not be wholly attributable to typical development.

Results from the self-report SDQ also showed improvements in socio-emotional well-being for the Pyramid group. A highly significant ($p = .001$) reduction in mean TD score for the Pyramid group from pre- to post-test was demonstrated (with a small-to-medium effect size: $d = 0.41$). However, consistent with informant-rated results, a highly significant between groups difference (with the Pyramid group demonstrating more difficulties) was evident at both time points. Furthermore, analyses of the subscale data showed significant improvements in targeted domains: emotional symptoms ($p = .01$, with a small effect size: $d = 0.37$) and peer relationship problems ($p = .001$, with a medium effect size: $d = 0.54$), but not for prosocial behaviour, where no significant increase over time for the Pyramid group was demonstrated.

Compared to informant raters, the Pyramid group self-reported fewer total difficulties (with lower scores on emotional symptoms and peer relationship problems, but higher scores on conduct problems and hyperactivity/inattention). Nonetheless, there was a statistically significant reduction in mean TD score and on subscales pertinent to Pyramid (emotional symptoms and peer relationship problems). Self-reported mean scores (all domains) showed minimal change for the comparison group. As with the informant-rated findings, distinct trajectories for the two groups were manifest. These findings were consistent with research from primary school clubs (Cassidy et al., 2014) which showed significant reductions in total difficulties, specifically on the dimensions of emotional symptoms and peer relationship problems, using both informant-rated (teacher) and self-report data.

In the current study, however, despite these statistically significant improvements, self-report data for the Pyramid group fell in the 'normal' range, in line with the general population, across all domains at pre- and post-test. This suggests that whilst socio-emotional gains were made, pupils selected for Pyramid did not self-identify (on the SDQ) as 'at risk' (and, therefore, in need of intervention), according to the 'caseness' cut-off criteria. Correlations among proxy and self-report SDQ scores have been found to be moderate (e.g. Goodman et al., 1998; Koskelainen et al., 2003) and are in line with cross-informant agreement demonstrated by other measures of psychopathology (e.g. between the CBCL and its self-report derivative, the YSR: Verhulst & Ende, 1992). The correlation between informants on the SDQ is usually around 0.3 (T Ford, personal communication, July 6, 2014). Nonetheless, the self-report SDQ appears to perform less well than other formats (Goodman et al., 2000a). Cross-informant discrepancies show that older children and adolescents often rate themselves in the 'normal' or 'borderline' range on total difficulties, whilst teachers (or members of school staff, as in Study One) and parents, usually report higher difficulties (Goodman et al., 1998).

Scrutiny of the self-report SDQ subscale scores showed the Pyramid group reported higher conduct and hyperactivity/inattention difficulties than informant-raters had scored for them; the reverse trend was true for emotional symptoms and peer relationship problems. Researchers (e.g. Goodman et al., 2000a; Muris et al., 2003) suggest that the level of inter-rater agreement depends on the type of disorder: adolescents may be more or less inclined to report specific difficulties and, therefore, it is unlikely that self-ratings reflect psychopathological individual differences without biases (Tourangeau et al., 2000). Furthermore, some studies have identified weaknesses in the component structure of the SDQ self-report version (e.g. Percy, McCrystal, & Higgins, 2008; Ruchkin et al., 2008). Confirmatory factor analysis (Van Roy et al., 2008) revealed an unclear construct and meaning for the prosocial behaviour subscale. Children and adolescents may, therefore, encounter difficulties in interpreting some items on the SDQ, thus impeding their ability to assess their behaviour on particular dimensions. A related consideration is that younger adolescents may experience problems in a less differentiated way than older ones, according to cognitive ability. It is important for researchers to estimate prevalence of psychopathology within distinct age periods, an issue which could see variable factor structures and cutoff scores emerge for different age groups (Ruchkin et al., 2008).

Findings from the self-report WBQ showed consistency with the SDQ results, indicating improvements in targeted aspects of well-being for the Pyramid group: overall life satisfaction, self-esteem, and emotional well-being. As expected, pupils in the Pyramid group had lower levels of subjective well-being compared to their comparison group peers at pre-club assessment: whilst overall life satisfaction scores were similar to the general population, emotional well-being and satisfaction with friends scores were lower. This contrasts with the trends described in the SDQ self-report data with respect to normative scores. It is pertinent to note that the WBQ was specifically designed for collecting data on subjective well-being from young people (11- to 16-years) and, unlike the SDQ self-report or the YSR measure, is not derivative from an adult version. Moreover, the WBQ

explicitly delineates the aspect of well-being to which specific items refer and, therefore, may be less prone to difficulties with interpretation.

Nonetheless, post-test findings showed that a significant between groups difference in overall life satisfaction apparent at pre-club assessment was no longer statistically significant, with a highly significant interaction between time point and group type accounting for 16.5% of the variance in life satisfaction. Again, this demonstrated distinct trajectories for the two groups and whilst the pattern of change for the Pyramid group was characterised by a significant increase in overall life satisfaction, for the comparison group there was minimal change.

In a similar vein to the SDQ, specific domains pertinent to Pyramid can be mapped onto corresponding dimensions of the WBQ: self-esteem, emotional well-being, resilience, and satisfaction with friends. Results showed improvements in a range of socio-emotional variables for the Pyramid group including self-esteem and emotional well-being, with satisfaction with friends approaching statistical significance. Conversely, for the comparison group a statistically significant decline in emotional well-being and resilience was identified post-test.

Furthermore, results from the SDQ (informant-rated and self-report TD data) indicated that Pyramid had an equivalent impact for attendees irrespective of gender, ethnicity or socio-economic status. Additional scrutiny of the Pyramid group emotional symptoms data (informant-rated and self-report) failed to demonstrate any significant gender difference or interaction effect, suggesting a similar reduction in emotional symptoms for males and females over time. A non-significant main effect of gender was not unexpected given the selection criteria for Pyramid. Conversely, a main effect of gender was identified in the WBQ emotional well-being and self-esteem data for the Pyramid group. Pyramid females

demonstrated lower levels of emotional well-being and self-esteem compared to Pyramid males pre- and post-club. These findings are consistent with research which suggests distinct gender patterns amongst adolescents, with females experiencing more internalising issues (Gutman et al., 2015) and specifically, higher emotional symptoms (Fink et al., 2015) and lower self-esteem (The Children's Society, 2015). Nonetheless, current findings from the WBQ showed consistency with the SDQ findings with respect to the non-significant interaction between gender and time point on either emotional well-being or self-esteem, indicating similar improvements for males and females over time on these dimensions, thus supporting Pyramid's equivalent impact.

Overall, distinctive trajectories for the Pyramid and comparison groups evidenced by the SDQ and WBQ findings suggest the unique pattern of change demonstrated by Pyramid pupils was not attributable to typical development alone. This provides empirical support for the effectiveness of Pyramid in improving the socio-emotional well-being of vulnerable pupils in early secondary education, extending the existing evidence base beyond primary school evaluations.

Preliminary feedback from attendees (WBQ supplementary questions) adds further support for Pyramid's effectiveness: the majority of attendees identified improvements in socio-emotional competencies i.e. confidence, peer relationships and social skills. Nonetheless, three (2%) respondents reported no change (positive or iatrogenic) over time. This raises interesting questions concerning intervention effectiveness and the suitability of selected pupils: both aspects are investigated further in the qualitative analysis (section 5.4.). Attendees' perceptions of their club experience was, overall, extremely positive and 44% were 'happy' to be invited to Pyramid. Nonetheless, the concern that school-based, selective interventions can be stigmatising is widely

acknowledged (Fazel et al., 2014) and requires further scrutiny which the qualitative method utilised in Study Two allows.

4.5.2. Pyramid's impact on school performance

Change in pupils' ability self-concept in English and Mathematics was used to gauge pupils' academic well-being. Results for the Pyramid group showed a slight increase in ability self-concept over time in English and Mathematics. A cross-over interaction was found for both subject domains: increases for the Pyramid group were coupled with corresponding decreases for the comparison group. At pre-club assessment, the comparison group demonstrated a higher ability self-concept in Mathematics than the Pyramid group, however, at post-club both groups were similar. The relative 'dip' shown by the comparison group but not evident among Pyramid pupils, suggests socio-emotional gains may have acted as a buffer. International research indicates a cross cultural attainment 'dip', particularly in traditional academic subjects among 11- to 14-year-olds (the age range of participants in the current research) which is associated with a decline in attitudes to school and learning (National Foundation for Educational Research (NFER), 2006). Interventions (e.g. Pyramid) which demonstrate an impact on socio-emotional outcomes can be attributed with a wider impact on educationally relevant attitudes and behaviours or 'academic enablers' (DiPerna & Elliot, 2002) which can reduce the risk of academic decline characteristic of this developmental period.

In contrast to the pupils' ratings of their ability self-concepts, the objective measure of school performance (National Curriculum levels for English and Mathematics) revealed no significant between groups difference in academic progress from pre- to post-club; evidence of Pyramid's impact on pupil's academic performance in the short-term was not demonstrated. However, it can be argued that the relatively brief period between assessments was insufficient for any change to be detected. Relevant literature supports

the emergence of academic gains in the longer-term (e.g. Challen, 2011; De Montjoie Rudolph, 2015; FitzHerbert, 1985; Scott Loinaz, 2014). In the current study, despite minimal change on the satisfaction with school subscale of the WBQ, preliminary feedback from attendees (section 4.4.7.) revealed that over 50% of respondents thought attending Pyramid club had helped them to 'enjoy school more'. Over time, this can improve school engagement, including pupils' participation in class, and supports the premise of 'academic enablers' which can affect longer-term academic performance. This proposition supports the rationale for assessing academic progress at 12-month follow-up and is investigated further with the qualitative analysis (section 5.4.2.1.). Current findings contribute to earlier, tentative evidence showing an impact of Pyramid on pupils' school performance: e.g. Davies, 1999; FitzHerbert, 1985; Headlam Wells, 2000 (section 2.4.3.), although further investigation, as outlined, is required.

4.5.3. Limitations of Study One

There are methodological limitations to the current study which relate to its quasi-experimental design, potential participant recruitment bias, and the outcome measures. A further restriction refers to the scope of the findings which only provide evidence of short-term effects.

Whilst ecologically valid research necessitates conducting studies in real world settings; the school environment does not easily accommodate RCT designs, the most robust method of preventing selection bias (MRC, 2006) and often described as the 'gold standard' of evaluation research (Cheney et al., 2014). However, as Pyramid is a selective intervention randomisation was not appropriate and a quasi-experimental design was implemented in the current study. Whilst a wait-list design has been applied in primary school evaluations (Cassidy et al., 2014; 2015), this was rejected on ethical grounds as sufficient Pyramid places were available for all pupils identified as in need.

Moreover, an inherent drawback of a wait-list control is that longer term follow-up is prohibited as all participants ultimately receive treatment. A 12-month follow-up study to examine sustained effects was included in the current research design, therefore, a wait-list control was not suitable.

The recruitment of schools for Study One was restricted to those running secondary Pyramid clubs during the academic year 2013/14 or 2014/15 and that volunteered to be involved in the project. The size of the study sample was moderate but nonetheless was within the a priori estimate required to demonstrate a medium effect (calculated by G*Power 3 (Faul et al., 2007) power analysis: section: 3.3.3.). Arguably, the final sample could be biased towards 'research friendly' schools with a culture and ethos conducive to supporting interventions and, therefore, positive outcomes were more likely to be demonstrated. It can, however, be suggested that support from host schools is integral to the success of Pyramid clubs and this provision should be assumed. Nonetheless, there are numerous factors that impact on the degree and consistency of support for interventions given by individual schools and this was not monitored using objective measures in the current study.

Allocation to groups (Pyramid or comparison) was completed through prescribed screening procedures (Pyramid, 2011a) and pupil matching was undertaken by school staff. The researcher was reliant on the school Pyramid Coordinator to provide these data and, whilst this was beneficial in terms of minimising potential researcher bias, it was an administrative burden on school staff. The complex structure of secondary schools necessitated multiple staff input to complete informant-rated SDQs. Whilst the current study included an adult-informant and two self-report measures to enhance methodological rigour, given the complex and time pressured environment typical of secondary schools, efficiently administering multiple measures proved challenging and

not all the data were provided (i.e. comparison group data and school performance follow-up data from School 3). Future studies should, therefore, consider thoroughly the balance between robustness and utility when selecting outcome measures.

The age range of participants in Study One permitted the use of self-report measures, an important strength of the current research design and largely precluded from studies with younger children (with the main exception of Cassidy et al., 2014; 2015). Whilst the importance of including self-report measures in evaluation research has been argued previously (section 3.1.), there are several concerns associated with their use with minors. As stated, studies have demonstrated satisfactory levels of inter-rater reliability (proxy and self-report) on the SDQ, however, consistency for younger children was found to be demonstrably lower (Goodman et al., 1998; Muris et al., 2003). The mean age of participants in Study One was 12.53 years (SD = 0.79) and towards the lower recommended age for the SDQ self-report version (11- to 17-years): concerns pertaining to interpretation have previously been described (section 4.5.1.). Moreover, adolescents may be more or less inclined to reveal anxieties or other internalising issues and cross-informant discrepancies (identified in the current study: section 4.4.3.3) may reflect subjective, partial truths, influenced by individual and situational factors (Berg-Nielsen, Vika, & Dahl, 2003). For example, social desirability or acquiescence may have influenced pupils' responses on the self-report measures which were administered by the researcher or the school Pyramid Coordinator. To combat this, procedures were implemented (section 3.5.) to minimise perceived power differentials and participants were encouraged to respond truthfully.

A further limitation refers to the premise that self-report questionnaire responses may not translate to behaviour change (Pinfold et al., 2003). Nonetheless, findings from adult informants were consistent with the overall trajectory of behaviour change (improved

socio-emotional competencies for the Pyramid group) identified from the self-report measures and provided cross-informant validation. This demonstrates the strength of the study design: utilising cross-informants and implementing more than one outcome measure, thus enhancing methodological robustness.

The comparable impact of Pyramid across discrete groups was demonstrated and has implications for schools regarding the selection of appropriate delivery models. Decision-makers can support the use of Pyramid as an intervention with evidence that it is effective across gender, socio-economic, and ethnic groups. However, the current results should be interpreted with caution: as previously reported, the sample size was moderate and furthermore, collapsed categories were employed in the ethnicity analysis. Nonetheless, the current evidence suggests Pyramid has a positive impact on participants regardless of gender, ethnicity or SES status and is, therefore, a practical intervention to implement. These findings are consistent with those drawn from primary school studies (Cassidy et al., 2014; 2015; McKenna et al., 2014; Ohi et al., 2012; 2008). Implications for practice are discussed further in section 7.3.2.

4.6. Conclusions and implications for the thesis

Overall, the quantitative findings from Study One provide new evidence that, in the short-term, Pyramid is an effective intervention for improving the socio-emotional well-being of vulnerable young people in early secondary education across gender, ethnic, and SES groups. These findings have clear implications for the development of the research.

Firstly, while these new findings extend the evidence of Pyramid's effectiveness to an older cohort, to augment the robustness and scope of the current evaluation a qualitative strategy was embedded in the research design (section 3.4.). This permitted scrutiny of the quantitative findings, offering a confirmatory (or disconfirming) 'tool' (Bryman, 2012) with respect to Pyramid's effectiveness. Although a statistically significant effect on the

Pyramid group's academic progress was not demonstrated on the quantitative measures, some tentative evidence suggests an impact on educationally relevant behaviours which warrants further examination through a qualitative method.

The qualitative study presented in the next chapter is expected to provide a deeper understanding of the effectiveness of Pyramid on both socio-emotional and school performance outcomes, thus extending the knowledge gleaned from the quantitative findings. A qualitative method will permit preliminary feedback from the WBQ regarding service users' perceptions and experience of Pyramid club to be probed and the processes and mechanisms underlying behaviour change to be investigated (**RQ3**). The rationale for implementing a mixed methods strategy to fully address the research questions is supported. Furthermore, evidence of Pyramid's short-term impact supports the rationale for conducting a longer-term study (Study Three, Chapter Six) of Pyramid's impact on early secondary school pupils' socio-emotional well-being and school performance.

Chapter Five

Study Two: qualitative evaluation of the short-term impact of Pyramid

This chapter describes the design and procedure for Study Two: a qualitative evaluation of the short-term impact of the Pyramid intervention on pupils in early secondary education. Results from a hybrid deductive-inductive thematic analysis (TA) are presented that include a narrative of the active components of Pyramid that contribute to behaviour change in attendees. Key findings are discussed in relation to the research questions.

5. Research objectives of Study Two

The first objective was to scrutinise the quantitative findings to gather supporting or disconfirming evidence about the effectiveness of Pyramid as a socio-emotional intervention. Study Two utilised methodological triangulation (section 3.2.) and was directed at probing the quantitative findings in relation to:

RQ1: Does the Pyramid intervention impact on the socio-emotional health of pupils in early secondary education?

RQ2: Does the Pyramid intervention impact on early secondary-aged pupils' school performance?

The second objective was to investigate the underlying processes and mechanisms that influence behaviour change (Durlak, 2015; Michie et al., 2013). These relate to both behaviour change procedures (BCPs) and behaviour change techniques (BCTs) (Michie et al., 2013). This objective aligns to the third research question:

RQ3: What are the elements involved in the Pyramid intervention that bring about change in attendees?

An investigation of the active components of Pyramid facilitates a deeper understanding of what works, for whom, and under what conditions (Pawson & Tilley, 2004) and informs recommendations for change and development of the Pyramid intervention.

5.1. Method

A full description of the method has been presented (section 3.4.2.).

5.1.1. Design and participants

A focus group method was implemented. Participants were recruited from the eight schools in Study One. A total of 65 Pyramid attendees participated in eight focus groups, and 23 club leaders participated in seven focus groups. Club leaders from School 8 were unavailable to attend and two of the four leaders emailed responses to the focus group questions. Focus group details are summarised in *Table 5.0*.

Ethical approval and valid consent were received from relevant stakeholders (section 3.5.).

Table 5.0: Study Two focus groups: school and participant details

School ID No. and location	Year group	Total N Pyramid group (male/female)	Total N club leaders (male/female)
School 1 Wales	7 & 8	7 (5 male/2 female*)	3 (2 male/1 female)
School 2 LBE	7	8 (4 male/4 female)	4 (1 male/3 female)
School 3 LBE	8	7 (3 male/4 female)	5 (5 female)
School 4 Wales	7	6 (3 male/3 female)	3 (1 male/2 female)
School 5 Wales	7	7 (3 male/4 female)	5 (1 male/4 female)
School 6 Surrey	8	8 (4 male/4 female)	2 (2 female)
School 7 LBE	9	10 (2 males: 8 females)	2 (1 male/1 female)
School 8 LBE	8	12 (12 female)	Responses provided via email from 2 of the 4 club leaders (both female)

*One female pupil attended whose data were not included in Study One
LBE: London Borough of Ealing

5.2. Procedure

All eight focus groups with young people took place in the school where the Pyramid club had run (six in the classroom where the Pyramid club was held and two in a private area in the school library). Seating was arranged to resemble a typical Pyramid club circle time format. The researcher facilitated all focus groups with Pyramid attendees and club leaders without assistance and within three weeks of the final Pyramid session at each school.

Focus groups with Pyramid attendees immediately preceded those held with club leaders when both sessions took place on school premises. A focus group protocol was utilised to guide the qualitative data collection and to ensure ethical procedures were met. The protocol for sessions with Pyramid attendees and club leaders were similar, however, some wording was adapted to suit the respective audience.

5.2.1. Procedure for focus groups with Pyramid attendees

The researcher introduced herself and described the study's purpose. For the ice-breaker participants were requested to think of a famous character (e.g. from a film or book), or pick a favourite name, to use as a pseudonym during the focus group; participants wrote their pseudonym on a sticky label and displayed it on their person.

The researcher explained that the purpose of the focus group was to hear about attendees' experiences of Pyramid club; participants were encouraged to speak freely about their experiences, whether positive or negative.

The researcher proceeded to go through the question schedule (section 3.4.4.1.) Participants were thanked and debriefed. Each focus group was approximately 30 minutes duration.

5.2.2. Procedure for focus groups with club leaders

The researcher introduced herself, described the study's purpose and explained how the session would be audio recorded; pseudonyms (e.g. 'Club leader 1', 'Club leader 2') were used for participant anonymity. The researcher went through the question schedule and invited concluding comments. Participants were thanked and debriefed. Each focus group was approximately 45 minutes duration.

5.3. Data analysis strategy

Data from all focus groups were transcribed verbatim by the researcher; observation notes were used to identify speakers and indicate non-verbal responses (e.g. nodding agreement).

A hybrid process of deductive-inductive TA was undertaken (Fereday & Muir-Cochrane, 2006): a priori codes (*Table 5.1.*) driven by the research questions, and existing knowledge and theory (deductive approach) were integrated with 'spontaneous' codes emerging from the data (inductive approach) through an iterative and reflexive process. In vivo coding helped prioritise the participant's voice and avoid the young person's perspective being marginalised (thus enhancing the researcher's understanding of their world view). A combination of 'top-down' and 'bottom-up' approaches integrated both expected and observed responses (as codes) in order to fully interrogate the data (Hsieh & Shannon, 2005). A code book was developed to undertake the analysis. Disconfirming evidence was sought in the transcript and coded to be included in the analysis.

Table 5.1: A priori codes developed for Study Two thematic analysis

Code number and label	Description	Deductive driver
Code 1: Socio-emotional effect (SEE)	Self-reported/informant reported changes in socio-emotional competencies e.g. self-esteem, confidence, social skills, relationships with peers	Research question, quantitative findings from Study One and existing knowledge: RQ1: Does the Pyramid intervention impact on the socio-emotional health of pupils in early secondary education? Existing literature (Lyons & Woods, 2012; Ohl et al., 2013)
Code 2: Pyramid schema	Reference to elements which reflect fundamental aspects of Pyramid e.g. aspects of delivery, core activities etc.	Research questions and existing knowledge: RQ1 and RQ3: What are the elements involved in the Pyramid intervention that bring about change in attendees? Existing literature (Lyons & Woods, 2012; Ohl et al., 2013) Pyramid club theory of change (Hughes, 2014)
Code 3: School performance effect (SPE)	Identification of any impact of Pyramid which relates to school performance	Research question and existing knowledge: RQ2: Does the Pyramid intervention impact on early secondary-aged pupils' school performance? Existing literature (e.g. Davies, 1999; FitzHerbert, 1985; Headlam Wells, 2000)
Code 4: Drivers for change	Potential elements which relate to behaviour change: procedures (BCPs) or techniques (BCTs)	Research question and existing knowledge: RQ3 Pyramid club theory of change (Hughes, 2014)
Code 5: Barriers	Factors which impede intervention effectiveness/optimum delivery; potentially preventing/inhibiting behaviour change	Research question: RQ3

5.3.1. The thematic analysis process

A six phase model (Braun & Clarke, 2006; 2013) was used to guide the TA of focus group data which is described fully in Chapter Three (*Table 3.6*).

Five a priori codes were devised based on the research questions, existing knowledge and theory and a further 50 initial codes were created (*Appendix H*). Codes were matched with data extracts; some segments were coded more than once, according to their relevance. All actual data extracts (once coded) were collated. The large number of initial codes was reviewed, involving collapsing, renaming, and removing redundant items to identify candidate themes. Similarly coded data were organised into 15 preliminary thematic categories. The iterative process continued to refine potential themes. Some candidate themes were considered to have insufficient data to support them whilst others appeared to include data that were too diverse: themes were collapsed into each other and others were re-worked into alternative themes which more adequately captured the coded data. This process culminated in 11 thematic categories used across both Pyramid attendee and club leader datasets. Within these thematic categories 27 subthemes were organised.

Once the researcher was satisfied that all the collated extracts for each individual theme showed a coherent pattern, the relevance of themes was further considered. The entire data set was re-read to ascertain if the proposed themes were an accurate reflection of meaning and to ensure nothing had been missed in earlier coding. Collated extracts were organised to provide a coherent and internally consistent reflection of the 'story' of the data: 11 thematic categories and 27 subthemes were named and subsequently subsumed within five overarching, global themes.

To enhance rigour and validity, selected focus group transcripts from both the Pyramid attendees and club leaders were independently co-coded by the researcher's first

supervisor. The level of agreement was high and resulted in a few minor changes being made to the naming of thematic categories. An analytic narrative, including embedded data extracts, was produced (section 5.4.) to present the emergent themes (the meaning elicited from the data) and to address the research questions.

Global themes and thematic categories are presented in *Tables 5.2. and 5.3.* with supporting illustrative quotations from Pyramid attendees and club leaders respectively. Themes have been mapped according to the research question/s and issue/s addressed.

Table 5.2: Pyramid attendees' perceptions and experiences of attending a Pyramid club: table of themes

Global theme	Thematic category	Subtheme	Illustrative quotation	Research Question/s (RQs) and issue/s addressed
Pyramid schema	Delivery elements	Delivery agent	<i>'They were positive and they made it fun' (John Paul, Sc7)</i>	RQ1; RQ3: Effectiveness on targeted outcomes (SEWB); elements involved in behaviour change
		Structure and format	<i>'Smaller groups is better...you get to know more people' (Nelson, Sc6)</i>	
	Atmosphere & content	Nurturing environment	<i>'Doing it [Pyramid] could put my mind off things and it would stop me from worrying' (Olaf, Sc6)</i>	
		Activity sessions	<i>[I liked best] 'the balloon game and the name game..and teamwork' (Cookie, Sc3)</i>	
	Relationships	Inter-peer	<i>'We made a lot of new friends and got to know people' (Jeff, Sc5)</i>	
		Attendee-club leader	<i>'She was like an older role model for us' (Kawai, Sc8)</i>	
Pyramid 'graduate'	Perceived outcomes	Socio-emotional gains	<i>'It helped me with my confidence for making new friends and stuff like that' (Jessica, Sc1)</i>	RQ1; RQ2: Effectiveness on targeted outcomes (SEWB); impact on school performance
		School performance effects	<i>'I put my hand up more in class and contribute more in lessons' (Gabrielle, Sc3)</i>	
	Identity	Sense of personal change	<i>'I used to be really shy ... I've got more confidence now to go and talk to people' (Freddy, Sc5)</i>	
		Group identity	<i>'You don't have to feel shy 'cos everyone is the same' (Becky, Sc8)</i>	

Global theme	Thematic category	Subtheme	Illustrative quotation	Research Question/s (RQs) and issue/s addressed
Behaviour change drivers	Behaviour change procedures (BCPs)	Setting criteria	<i>'When we came in instead of having normal cups we had our own [personally decorated] mug' (Lucy, Sc4)</i>	RQ3: Elements involved in behaviour change
		Delivery criteria	<i>'You get a chance to pick what you'd like to do' (Becky, Sc8)</i>	
		Content criteria	<i>'We could do more things [at Pyramid club] and be creative' (Gollum, Sc7)</i>	
	Behaviour change techniques (BCTs)	Demonstration and practice	<i>'They [club leaders] used to show us everything' (Princeton, Sc2)</i>	
		Social reward	<i>'I enjoyed [circle time] talking...[club leaders] were positive and made it fun' (John Paul, Sc7)</i>	
		Social support (emotional)	<i>'[The best part] was when we talked and shared things' (Jackie, Sc4)</i>	
		Goal setting (behaviour)	<i>'We played mini games just to get to know each other' (Ariana, Sc8)</i>	
Challenges and threats	Participant factors	Pre-club perceptions	<i>'A lot of us were shy and thinking what is the point of this and is it worth it' (Becky, Sc8)</i>	RQ3: Elements involved in behaviour change; recommendations for change and Pyramid development
		Stigma	<i>'And they go, 'Oh, friendship building club, just 'cos you got no friends,' some of the boys' (Elsa, Sc7)</i>	
	Wider school factors	Implementation issues	<i>'We were in a room that didn't have the right supplies [for food preparation]' (Emma, Sc8)</i>	
		Awareness and support	<i>'People barely know about it [Pyramid]' (Perseus, Sc6)</i>	

Global theme	Thematic category	Subtheme	Illustrative quotation	Research Question/s (RQs) and issue/s addressed
Progression and influence	Pyramid development and diffusion	Enhancing Pyramid	<i>'To make it improve it could go on for longer'</i> (Yoda, Sc1)	RQ1: Effectiveness on targeted outcomes; recommendations for change and Pyramid development; longer-term implications
		Cascading impact	<i>'If they did Pyramid club again we could go down and talk to people'</i> (Caterpillar, Sc5)	
	Pyramid legacy	Group 'mourning'	<i>'I'm sad that the weeks have passed but I'm quite proud'</i> (Light, Sc8)	
	'Real world' implications	<i>'We're more confident...we don't just walk past [peers]; we stop and speak'</i> (Jeff, Sc5)		

Sc = School

SEWB = socio-emotional well-being

Table 5.3: Pyramid club leaders' perceptions and experiences: table of themes

Global theme	Thematic category	Subtheme	Illustrative quotation	Research Question/s (RQs) and issue/s addressed	
Pyramid schema	Delivery elements	Delivery agent	<i>'You go by what you think, what you feel would go well'</i> (Club leader 4, Sc3)	RQ1; RQ3: Effectiveness on targeted outcomes (SEWB); elements involved in behaviour change	
		Structure and format	<i>'By the end they would suggest their own games and they would go off and organise themselves'</i> (Club leader 2, Sc5)		
		Atmosphere & content	Nurturing environment		<i>'It was always made safe before and so it was easier for them to share a story'</i> (Club leader 2, Sc7)
		Activity sessions	<i>'The games I think for them were where they were really gelling and shining'</i> (Club leader 1, Sc5)		
	Relationships	Inter-peer	<i>'You could see they had all made a special bond with one another'</i> (Club leader 1, Sc8)		
		Attendee-club leader	<i>'She started to open up about what's going off at home. She felt she could actually talk to us about that'</i> (Club leader 1, Sc4)		
		Inter-club leader	<i>'We communicated very well with each other and gave each other confidence'</i> (Club leader 1, Sc3)		
Pyramid 'graduate'	Perceived outcomes	Socio-emotional gains	<i>'Before Pyramid they wouldn't have had the confidence to go up to each other'</i> (Club leader 1, Sc1)	RQ1; RQ2: Effectiveness on targeted outcomes (SEWB); impact on school performance	
		School performance effects	<i>'They both ask questions and are so much more interactive in the class'</i> (Club leader 5, Sc5)		

Global theme	Thematic category	Subtheme	Illustrative quotation	Research Question/s (RQs) and issue/s addressed
	Identity	Sense of personal change	<i>'It was a lot to do with them feeling more and more comfortable in their own skin almost'</i> (Club leader 2, Sc6)	
		Group identity	<i>'As a group together...they're even more confident'</i> (Club leader 1, Sc5)	
Behaviour change drivers	Behaviour change procedures (BCPs)	Setting criteria	<i>'It's their club and they can arrange things around the room'</i> (Club leader 4, Sc5)	RQ3: Elements involved in behaviour change
		Delivery criteria	<i>'It was just giving them the power to choose and control and direct'</i> (Club leader 1, Sc7)	
		Content criteria	<i>'Circle time...it gave them all a chance to speak and say what they wanted to'</i> (Club leader 2, Sc1)	
	Behaviour change techniques (BCTs)	Demonstration and practice	<i>'It made sense telling their own stories as well because we would bring our own stories to share'</i> (Club leader 2, Sc7)	
		Social reward	<i>'We were always there talking to them, trying to keep it light-hearted and positive'</i> (Club leader 1, Sc7)	
		Social support (emotional)	<i>'At first it was quite difficult but over time they were more able to voice their thoughts'</i> (Group leader 1, Sc3)	
		Goal setting (behaviour)	<i>'We looked at the issues...whether it was assertiveness...to bring to the activities'</i> (Club leader 1, Sc7)	

Global theme	Thematic category	Subtheme	Illustrative quotation	Research Question/s (RQs) and issue/s addressed
Challenges and threats	Participant factors	Suitability	<i>'When he arrived it was like a bull'</i> (Club leader 3, Sc3)	RQ3: Elements involved in behaviour change; recommendations for change and Pyramid development
		Pre-club perceptions	<i>'They thought it was going to be boring'</i> (Club leader 2, Sc6)	
		Stigma	<i>'I don't think our kids felt stigmatised...[or] they probably wouldn't have gone'</i> (Club leader 1, Sc6)	
	Wider school factors	Implementation issues	<i>'We couldn't extend to outside the classroom which was sometimes quite difficult'</i> (Club leader 3, Sc3)	
		Awareness and support	<i>'I think it's their parents...winning them over'</i> (Club leader 3, Sc5)	
Progression and influence	Pyramid development and diffusion	Enhancing Pyramid	<i>'Additional [club leader] training...especially with older age groups'</i> (Club leader 1, Sc7)	RQ1: Effectiveness on targeted outcomes; recommendations for change and Pyramid development; longer-term implications
		Cascading impact	<i>'The best thing really is to get them to hear [about Pyramid] from another student'</i> (Club leader 2, Sc6)	
	Pyramid legacy	Group 'mourning'	<i>'...asked if he could come and be a leader...I think he just wants to do Pyramid club again'</i> (Club leader 4, Sc5)	
		'Real world' implications	<i>'I've also learnt that school's not all about getting good grades. It's about developing the child as a whole'</i> (Club leader 2, Sc5)	

Sc = School
SEWB = socio-emotional well-being

5.4. Findings from the thematic analysis of focus group data

Emergent themes, derived from a hybrid deductive-inductive thematic analysis of data collected from eight focus groups with Pyramid club attendees and seven focus groups with club leaders, are presented in this section (written responses to focus group questions from two club leaders were included in the analysis). The findings from the thematic analysis are described in analytical narratives, organised by global themes and mapped to specific research questions.

5.4.1. Global theme 1: Pyramid schema

The global theme Pyramid schema (*Figure 5.0.*) represents the key ingredients or ‘essence’ of the intervention: the fundamental and inter-related components which comprise Pyramid. It relates to how Pyramid attendees and club leaders discussed Pyramid’s effectiveness in relation to its targeted outcomes of improved socio-emotional well-being (i.e. **RQ1**) and the elements that bring about change (i.e. **RQ3**).

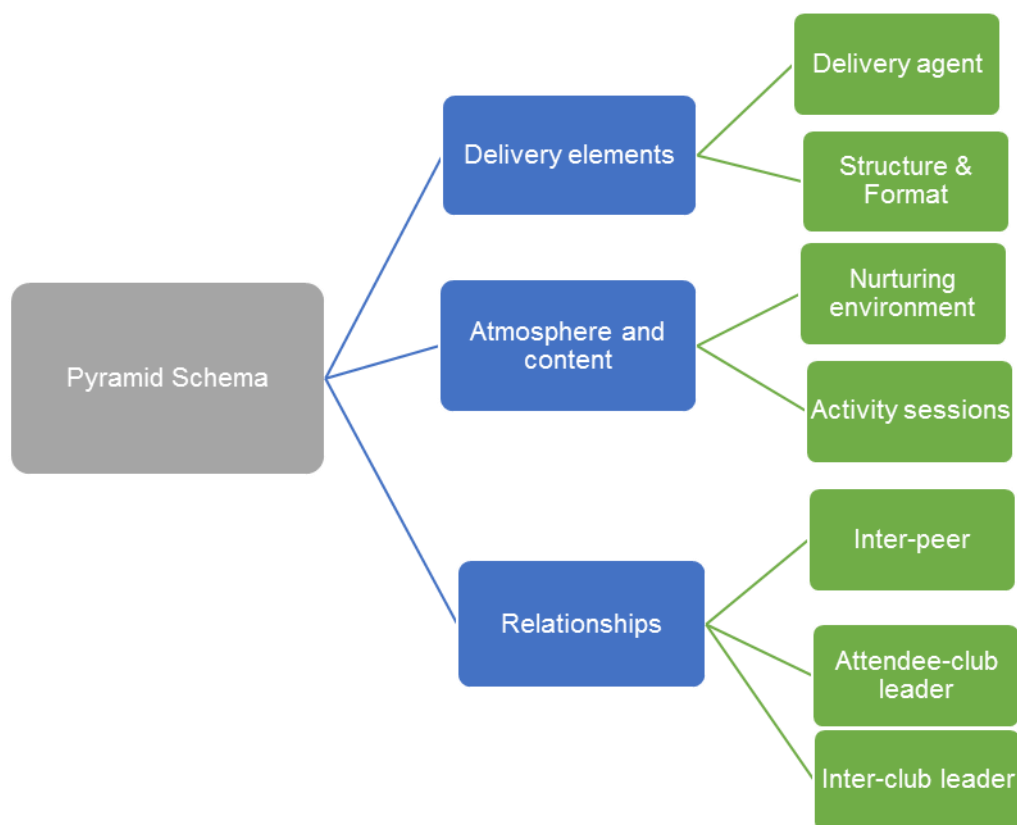


Figure 5.0: Global theme 1: Pyramid schema

5.4.1.1. Thematic category: Delivery elements

Delivery agent

The importance of the club leaders in running the Pyramid club programme was highlighted by attendees. Club leaders were described as 'helpful', 'friendly' and 'fun'. One of the most frequent responses to the focus group question asking attendees what they liked best about Pyramid club was the people who ran the groups:

I liked the teachers [*club leaders*] who helped us out because they all had their different aspects and they were all different in their own way
(Kawai, Sc8).

Club leader attributes reflected the ethos of Pyramid: praise and recognition and love and security. Club leaders were described by attendees as enthusiastic, encouraging and positive: 'They were positive and they made it fun' (John Paul, Sc7), and 'They believed things you could actually do' (Becky, Sc8). Other leader qualities valued by attendees included their consideration (e.g. remembering attendees' favourite snacks) and trustworthiness (e.g. attendees felt able to disclose personal information).

Pyramid attendees' description of the caring and empathetic role of club leaders was consistent with the reflections of the club leaders themselves on the way they ran the clubs: 'It's finding the skill in every child' (Club leader 4, Sc2); 'So I put myself in their position and I think I gained a lot' (Club leader 1, Sc3), and 'We spoke about some pretty intimate, personal things that they had experienced' (Club leader 2, Sc7).

The importance of club leader's personal attributes supports the premise that socio-emotional interventions can be delivered by a range of well-trained agents, including para-professionals.

Structure and format

The structure and format of clubs described by attendees reflected consistency in terms of a weekly routine they could expect (e.g. regular group leaders, a dedicated room, familiar choice of core activities) whilst allowing flexibility in relation to specific tasks, depending on group preferences. Attendees appreciated the typical small group structure for helping the group to bond: 'Because there was a small group of us we got on better than if there had been more of us' (Sunday, Sc6).

Club rules were established by mutual agreement during the first Pyramid session and this process aims to foster a sense of ownership and responsibility (another tenet of the Pyramid ethos). The acknowledgement of everyone's contribution and equal say was recognised and respected by attendees. For example, attendees reflected on how, as a group, they arrived at a decision about what happened at their club and how they got to choose, agreeing this was a 'fair' way to go about things: 'It's not fair if one person gives their idea. We got to choose...then we'd vote' (Lucy, Sc4).

Whilst leaders were ultimately responsible for the overall weekly plan for clubs, attendees became increasingly engaged over the weeks in actively shaping sessions:

Early on there was a couple who'd take the lead but at the end they were all taking a turn to lead or suggest. That was really good (Club leader 3, Sc5).

Although some activities corresponded to class lessons (e.g. cooking) club sessions were seen as distinct from classroom learning:

That's what I like because a lot of what we do in school is prescriptive, where that [Pyramid] was totally.... it can go where it wants to go (Club leader 2, Sc6).

5.4.1.2. Thematic category: Atmosphere and content

Nurturing environment

Pyramid club provided a space to relax where attendees could 'be themselves', feel safe and unworried. The nurturing environment of Pyramid was described by attendees as a sanctuary from outside stresses including wider school worries (e.g. academic demands):

I liked to be able to have that time when you could just relax...when you don't have to worry about homework and you can just have fun (Elsa, Sc6).

Regular access to the Pyramid 'space' engendered a sense of security and assurance over the course of the 10-week programme: 'And now I feel safer, I don't know why I just do' (Ash, Sc8).

The supportive, nurturing group environment encouraged attendees to voice their thoughts and feelings and listen whilst others shared theirs. Attendees described how they had the opportunity to share problems and issues with the group: 'Then you'd talk about problems like school' (Joey, Sc7), and

Say if you're having a bad week like, I don't know at school, you know that you've got these people there [*at Pyramid club*] (Ainsley, Sc6).

Club leaders also perceived Pyramid as a calm, nurturing space, describing it as somewhere attendees were able to relax and 'de-stress'. Sharing and reciprocal support developed within the group and several illustrative examples were gleaned:

I think it was like an activating factor that someone could say: *Actually, I had the same kind of experience myself*. One person said it and everyone else went: *actually I kind of have something in common with you* (Club leader 1, Sc7).

Providing a safe, nurturing environment was integral to establishing a supportive group and club leaders were pro-active in facilitating this:

We would also bring our own stories to share. So it gave them the ability to say: *Ok, that person has shared their story, let's share our own stories* (Club leader 2, Sc7).

Club leaders described a change in attendees' behaviour as the weeks progressed:

They learnt how to open up and get their feelings and their thoughts out because at first it was quite difficult getting something out of them but over time they were more able to voice their thoughts (Club leader 5, Sc5), and

In circle time it would be just one or two answers at the beginning, then it would be like a story with their answer (Club leader 1, Sc1).

Activity sessions

The majority of attendees were generally positive about all four core activities (i.e. circle time, arts and crafts, games, and snack time/food preparation) and were keen to identify the aspects they liked best. The most commonly used descriptor of Pyramid was 'fun': I liked all the activities, they were fun...really enjoyable' (Elsa, Sc6), and

I enjoyed it when we made the badges and pencil cases. I love designing so it was really fun (Hermione, Sc2).

However, there was evidence that some attendees were less keen on core activities: 'We had to decorate a pencil case which I wasn't that keen on, so I left it' (Sunday, Sc6), and 'When you sit in a circle and everyone asks lots of questions...that was my least favourite part' (Ella, Sc2).

Attendees perceived attending Pyramid as a learning experience: 'Not only did we just have fun but it also taught us a lot of things' (Sam, Sc8). Learning at Pyramid club was seen as distinct from a typical school lesson and having the opportunity to try new things and be creative was welcomed by attendees. Exposure to new experiences is another key tenet of Pyramid club: '*The activities* refresh your brain!' (Naruto, Sc3), and

They [*non-Pyramid peers*] think it's just like school but it's not. It's to do with your ideas (Caterpillar, Sc5).

The development of a range of competencies was recognised, including team work and cooperation, clean-up skills, and relationship skills. Promoting skills was explicit and attendees linked particular games with specific skills development: 'I liked the games because it was like team work and you got to know each other' (Cookie, Sc3), and 'You had to club together and sometimes people might not agree, so well, that helped us' (John Paul, Sc7).

Overall, club leaders agreed that the core activities worked well: the activity prompting the most peer interaction varied across groups, reflecting each group's unique dynamic. Snack time was popular with everyone and was described by club leaders as a highly social experience, with the group sitting down together, chatting and enjoying the food they had prepared. Informal conversations usually emerged during snack time but were also progressively more spontaneous during other club activities:

You'd see them all using glitter and they'd be saying: *I support Manchester City*. You got to know them through the craft, didn't you?' (Club leader 3, Sc5), and

They just genuinely got into that natural flow. They weren't forced together. That was when you really saw the whole point of it (Club leader 1, Sc6).

Core activities were effective in engaging club members and encouraging them to interact, engendering peer support and friendships:

A lot of children just do not do those sorts of activities. They go home, they put the PlayStation on and they don't interact. They actually had to talk to each other and they actually enjoyed it (Club leader 2, Sc6), and

That activity was a real demonstration of how well they were working together because they were supporting each other. When one of the girls couldn't think of anything, one of the others just jumped in immediately and said: *I know, I know for you* (Club leader 4, Sc2).

By engaging in core activities e.g. communication games, attendees discovered things they had in common, underpinning the formation and development of new friendships:

People [*in the game*] would be someone random. You wouldn't know who had the card and you had to speak to them (John Paul, Sc7), and

I liked the part when we made the cupcakes from what their personality was like. It was like really fun because from what the person told us we had to like decorate it and I could see that my partner was really happy (Becky, Sc8).

5.4.1.3. Thematic category: Relationships

Inter-peer

Inter-peer relationships flourished over the duration of the club. Pyramid was seen as instrumental in establishing valued friendships: [*Without Pyramid*] 'I'd never have met my dear friend_____ ' (Michael, Sc2), and

I never really talked to Bob in primary school.... but now I've started to talk to Bob and we've become best friends (Caterpillar, Sc5).

Club leader accounts revealed how attendees displayed prosocial behaviour during club sessions and also illustrated how they looked out for each other outside the Pyramid club setting:

There was a lot of sharing and you'd hear: *Is there any of that left to put on my cake? Or, that looks really good* (Club leader 2, Sc6), and

_____ had her back when people were mean to her on the school trip. So not only did she have someone stand up for her, it was someone who would not normally stand up 'cos they're shy (Club leader 2, Sc7).

Attendee-club leader

The attendee-club leader relationship was an important factor in attendees' positive experience of Pyramid club and leaders were popular and well liked. Club leader teams were diverse, with some members coming from the school community and some external volunteers. Regardless of status, within the Pyramid environment attendees perceived the relationship between themselves and the adults (and 6th form helpers) as relaxed and informal: 'It was like getting to know a new friend or something' (Ariana, Sc8).

The benefit of establishing an informal relationship was acknowledged by club leaders who saw their role as fundamentally supportive and the fact they were not in situ as authority figures or disciplinarians was important:

In there [*Pyramid club*] you're not a teacher. I think that really helped as well, there was no major hierarchy (Club leader 1, Sc4), and

It was nice for them to have relationships with people who were not school staff... who were friendly and could support them (Club leader 4, Sc2).

Attendees recognised and appreciated the time and effort club leaders donated to help run their Pyramid club. They were keen to express their thanks and good wishes to club leaders and made cards and presents as goodbye gifts when clubs finished: 'I want to say thank you to all of them [*club leaders*] for spending their time with us' (Princeton, Sc2).

Consistency in club leader teams is an important element of Pyramid club which reflects the vital role club leaders play in the success of clubs. The ratio of leaders to club members is intentionally high in order to foster strong relationships. Attendees looked forward to seeing familiar club leaders each week and would be quick to enquire if one of the team was absent:

You form a relationship with them. Like for example, one of the boys who we had problems with at the beginning, I feel like when we formed a relationship with him he saw us at his level (Club leader 3, Sc3).

Inter-club leader

The inter-club leader relationship was identified as contributing to the effectiveness of clubs. A commitment to team work and a collaborative approach was gleaned from club leader accounts. Diverse club leader teams brought together individuals with a range of experiences; dividing principal responsibility for different therapeutic activities enabled individuals to play to their strengths. Responsibilities were shared and session plans mutually agreed:

We sort of split Pyramid into different areas and we all took a lead on each one, rather than us all trying to do the same thing (Club leader 1, Sc5).

Inter-group leader relationships evolved over the duration of the 10-week programme as leaders got to know one another within the context of the club: [*We were*] 'knitting

together as a team' (Club leader 4, Sc5), and 'We communicated very well with each other and gave each other confidence' (Club leader 1, Sc3).

5.4.2. Global theme 2: Pyramid 'graduate'

The global theme Pyramid 'graduate' (*Figure 5.1.*) explores the unique reality of the service user in the context of their Pyramid club experience. It relates to the effectiveness of Pyramid on socio-emotional and school performance outcomes and addresses **RQ1** and **RQ2**.

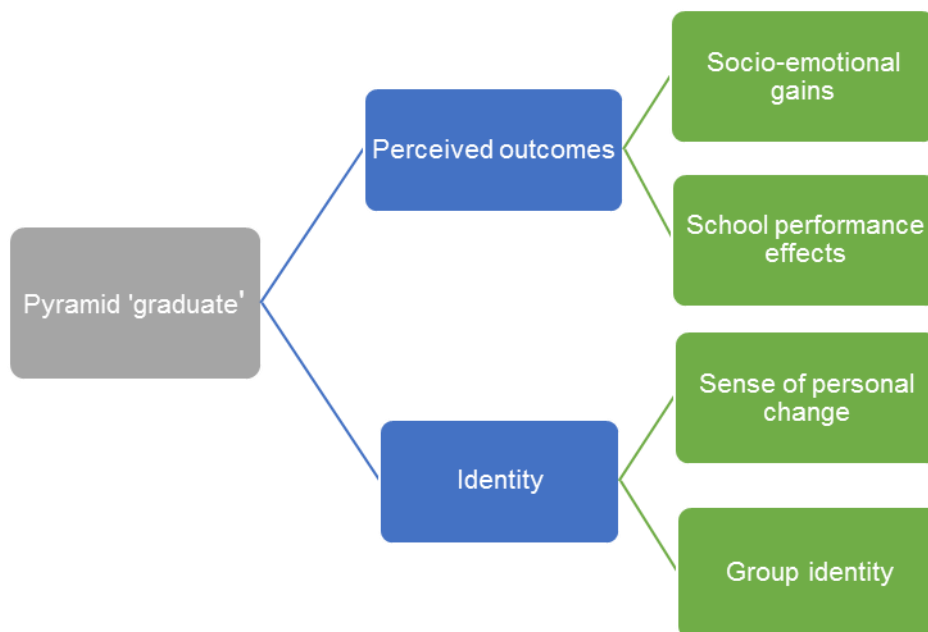


Figure 5.1: Global theme 2: Pyramid 'graduate'

5.4.2.1. Thematic category: Perceived outcomes

Perceived outcomes refers to the specific effects attendees attribute to having attended Pyramid club.

Socio-emotional gains

Attending Pyramid had a positive impact on club members' overall well-being: 'It makes me feel better than I did before' (Spiderman, Sc4). Attendees reported substantial socio-emotional gains, specifically in social skills, peer relationships, and confidence: '[Pyramid] helped me with my confidence, for making new friends and stuff like that' (Jessica, Sc1); '[Pyramid] helps you talk to people' (Colby, Sc7), and '[Pyramid] stops you being shy' (Ramsey, Sc3).

Self-reported improvements in well-being and targeted socio-emotional domains were corroborated by club leader observations. Attendees demonstrated newly developed competencies e.g. confidence to speak in front of a group: 'They actually felt better about themselves' (Club leader 2, Sc6), and

He was the one right at the front who introduced the whole assembly. To think would he have done that before? Probably not (Club leader 1, Sc1).

Social skills practice and burgeoning peer relationships were reported. Pyramid club was linked with facilitating new friendships within the group: 'I thought it [Pyramid club] was a nice way to meet new people, get to know new people' (Becky, Sc8), and 'We talked about different things and shared things' (Jackie, Sc4).

Club leaders concurred that attending Pyramid club had helped attendees tackle social skills difficulties, with sessions aimed at developing specific competencies. Attendees were able to practise social skills with their peers and do different things other than the 'normal' subjects they did in school. This was crucial for establishing friendships which was described as, 'a massive thing' for attendees to have achieved:

The friendships they formed. I mean they didn't talk to each other at the start and by the end they were walking home together and going to each other's houses over the weekend (Club leader 2, Sc7), and

One of them said to the other: *I don't know if we would have been friends if we hadn't of come here, so I'm glad we came.* That was nice that he felt that (Club leader 1, Sc5).

Other socio-emotional competencies were displayed: attendees demonstrated coping skills when things did not go to plan during a game or an activity, exhibiting resilience in the face of small 'failures'. Participating in activities because they were 'fun' rather than for the result enabled attendees to enjoy the activity for its own sake and not worry about whether it was 'correct': 'And even though it [*making cookies*] didn't turn out correct it was still yummy' (Caterpillar, Sc5). Club leaders observed coping behaviour:

Even when it went wrong, a couple of times it did, they didn't seem to mind. They took it in their stride (Club leader 1, Sc2), and

If something did go wrong it wasn't: *Miss, Miss...* They were able to laugh at their burnt biscuits and their whatever, so...it wasn't the end of the world (Club leader 2, Sc2).

Attendees described feeling better equipped to manage challenging situations with peers: 'Now I can stand up for myself' (Sarah, Sc8), and

It [*Pyramid*] like lets you make more friends and I was able to make more friends and if you fall out with them, you know how to make friends [*again*] as well (Spiderman, Sc4).

Socio-emotional skills learnt at Pyramid club were perceived as transferable, with attendees reporting increased confidence and emotional regulation in peer interactions

outside the immediate club environment. Attendees considered how they would react in wider school situations: 'Don't let anyone hurt your feelings and if they do just ignore them or go to a teacher' (Freddy, Sc5), and

Instead of putting on a big face and walking out explain to them why you're angry... Tell them if they say something and maybe it might upset you and you need to tell them but in a nice way (Lucy, Sc4).

Club leaders described how competencies initially practised in the non-threatening environment of Pyramid club were taken out into the wider social arena:

They've taken some of the things they learnt, like socialising and tried to pull that out and try and make friends, not just with the people in Pyramid group but also try and widen their own social circles (Club leader 1, Sc7).

For several individuals changes were quite dramatic:

On the first week I don't think he said hello or a word to us. Yet toward the end [*of Pyramid*] you can't keep him from talking (Group Leader 3, Sc4), and

They've all kind of gone that next step, I think. It might only for some of them be a little step but they've taken that step (Group leader 1, Sc4).

However, disconfirming evidence indicated that for some attendees, improvements were not perceived: 'It didn't really make that much of a difference' (Sunday, Sc6), and 'The feedback we had from one boy, he says he feels exactly the same' (Group Leader 2, Sc3).

School performance effects

Attendees identified how some of the skills they had learnt at Pyramid club impacted on behaviour and learning in the classroom: 'It [*Pyramid*] makes you like work together, with someone, not just alone' (Charlotte, Sc8), and

The skills here [*at Pyramid club*] help like for you to understand what the teachers are going on about when they are talking to you and stuff like that (Lucy, Sc4).

Specific changes were reported in relation to increased participation and engagement in class: 'Usually I don't participate but now I join in more stuff in classes' (Hermione, Sc2), and

Because in class you wouldn't usually talk, you'd be shy to talk and say in front of everyone and stuff but now when you go to class you usually put your hand up (Ariana, Sc8).

An impact on pupils' motivation and capacity to learn was also revealed and attendees described increased enthusiasm in the classroom: 'It's helped me focus in school and concentrate well' (Naruto, Sc3), and 'I feel more enthusiastic about every lesson' (Michael, S2).

Club leader accounts suggested that Pyramid had an impact on both socio-emotional and academic domains; improvements related to school performance (e.g. asking questions and interacting in lessons) were observed from pre-to post-club:

Week by week, growing confidence and you can see that in the classroom. We had to do these presentations in Welsh and at the start of the year I don't think he would have done it (Club leader 2, Sc5).

Attendees' overall progress was noticed by members of the wider school community, including teachers, teaching assistants and parents (who reported their observations to

club leaders): ‘She’s been doing her homework which beforehand she wasn’t’ (Club leader 1, Sc4), and ‘Anyone that’s had any contact with them really has commented on how they’ve come on (Club leader 4, Sc5).

5.4.2.2. Thematic category: Identity

Sense of personal change

Individual shifts in self-perception from pre- to post-club were identified. Attendees’ reflections of themselves prior to attending Pyramid were characteristic of a ‘typical Pyramid child’: ‘I felt really self-conscious in Year 6’ (Freddy, Sc5), and ‘I think most people here were shy before [*Pyramid*] to put up their hands in class’ (Kawai, Sc8). Attendees (Year 7 pupils) reported feeling worried around their transition to secondary school and a number of school-related anxieties were expressed: ‘Well in Year 6... people didn’t really talk to me and I didn’t feel like part of the class’ (Caterpillar, Sc5), and ‘I thought high school was going to be really scary but Pyramid really helped me’ (Rose, Sc5).

Post-club descriptions indicated a sense of personal change and achievement and contrasted sharply with pre-club accounts of being ‘shy’ and ‘self-conscious’. ‘Proud’ was a common descriptor of how attendees felt to be a Pyramid club ‘graduate’, having completed the programme: ‘Now we’ve come out of it [*Pyramid*] we can all believe in ourselves more than we did before’ (Kawai, Sc8).

Attendees described feeling confident and able to interact more with peers and school staff: ‘I used to get bullied and stuff which basically put me inside of a shell but Pyramid helped to break that shell’ (Scooby, Sc5), and ‘Like in the corridors [*before Pyramid*] I would never have spoken to any teachers or just said, hi’ (Jeff, Sc5).

Club leader observations supported an apparent shift in attendees' self-perceptions: 'It was a lot to do with them feeling more and more comfortable in their own skin' (Club leader 1, Sc7), and 'A couple of them didn't look comfortable in their own bodies [*at the start*] and just seeing them grow...' (Club leader 3, Sc3).

Group identity

Group identity emerged as a recurring subtheme. Pyramid club aims to foster a sense of belonging and group identity amongst members and is expressed in activities such as naming clubs and mutually agreeing club rules early on. Personalising art and craft objects made during sessions contributed to club members' sense of belonging and status as a group member: 'We basically took the first letter of everyone's name and called it [*our club*] that' (Ariana, Sc8), and '[*I enjoyed decorating mugs*] so when we came in, instead of having normal cups, we had our own mugs to drink out of' (Lucy, Sc4).

Attendees expressed affiliation with other club members and relationships developed which were affectionate and trusting: 'You don't have to feel shy 'cos everyone is the same' (Becky, Sc8); 'In Pyramid we're all caring about each other' (Hermione, Sc2), and 'I feel part of the class now and people are talking to me and I'm friends with _____' (Bob, Sc5). Moreover, being part of the first Pyramid club in their school was associated with occupying a unique status:

It made us feel proud and special...whoever gets to do it for the first time. You know after that people are never going to be able to do this again for the first time (Olaf, Sc6).

Club leader observations supported the importance of the group to members:

She's made comments to us about how the reason she gets up on a Monday is because she has Pyramid (Club leader 1, Sc4).

Mutual affection and group cohesiveness (connectedness) amongst club members had flourished over the life cycle of the club and were depicted:

It was amazing to see the girls as one big group at the very end of the last session sharing a group hug. You could see they had all made a special bond with one another (Club leader, 1, Sc8), and

Towards the end we did an activity where they all thought of a compliment for each other and they had me in tears because it was really lovely and heartfelt (Club leader 3, Sc5).

5.4.3. Global theme 3: Behaviour change drivers

The global theme behaviour change drivers (*Figure 5.2.*) relates to the active components of Pyramid: the behaviour change procedures (BCPs) and behaviour change techniques (BCTs) that influence and effect behaviour change in the pupils who attend Pyramid club. This global theme specifically addresses **RQ3**.

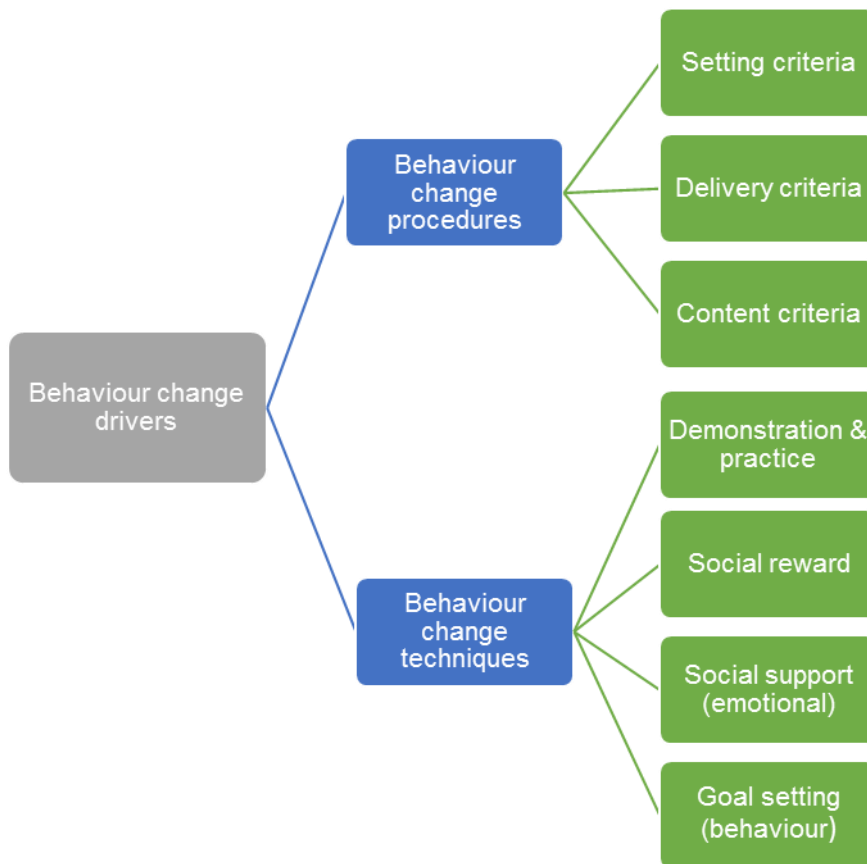


Figure 5.2: Global theme 3: Behaviour change drivers

5.4.3.1. Thematic category: Behaviour change procedures

Behaviour change procedures encompasses physical and practical (contextual) elements which are identified as providing the conditions conducive for intervention effectiveness. BCPs are linked explicitly to intervention fidelity and are specified in the Pyramid club theory of change (Hughes, 2014) and/or in the Pyramid model (section 2.2.1.).

Setting criteria

Setting criteria describes the physical Pyramid space. A suitable room for a club is part of establishing a distinguishable Pyramid area and contributes to creating a welcoming environment. Displaying club posters designed by attendees, using items made during club activities (e.g. personalised mugs) and helping to physically set up the room each week, further facilitated personalising the space and fostering a sense of group identity.

Despite some restrictions on physical space and/or resources to suit specific activities, club leaders were able to work with the allocated room to make best use of it: 'We even managed to have a balloon volleyball match in the room and they enjoyed that!' (Club leader 2, Sc3). Nevertheless, some attendees expressed dissatisfaction with the allocated club room/access to resources: 'I would have liked to go outside...we were sort of stuck in a room, that small one' (Grace, Sc7).

Delivery criteria

The majority of attendees wanted to extend Pyramid beyond its 10 weekly, 1.5 hour format; suggestions ranged from an additional few weeks to 'forever'. Substantial socio-emotional gains (section 5.4.2.1.) indicated that the duration was sufficient for most attendees to achieve improvements in targeted domains. Nevertheless, club leaders considered how more vulnerable members might benefit from additional sessions:

The truth is these 10 weeks are built up for everyone but essentially it's one size.

The idea it's 10 weeks and that should be enough but there are some students.... with a very low starting point (Club leader 2, Sc7).

Limiting Pyramid secondary school clubs to a maximum of 12 members is recommended and attendees felt being in a small group helped them to get to know one another better. Clubs are typically mixed gender (unless they operate in a single-sex school). Some initial reservations were observed: '*[At first]* they did like splitting up into boys and girls and they didn't like mingling as much apart from one girl' (Club leader 3, Sc3). However, these were resolved within the group:

It *[Pyramid]* was interacting and integrating both boys and girls and they didn't mind. They did just get on with it (Club leader 2, Sc3).

The consistency of dependable, regular club leaders and a flexible format that encourages high input from attendees have both been previously elicited as key aspects of the delivery criteria for successful clubs (section 5.4.1.1). During the early sessions activities were mainly initiated by leaders and then members increasingly took a directive role, assuming more responsibility:

We established that early with them, didn't we? *What do you want to do? This is your club*' (Club leader 4, Sc5), and

You get to be an equal. We get to pick [*what to do*], so it's not like they [*club leaders*] pick for you, you get a chance to pick what you'd like to do (Becky, Sc8).

The shift in attendees' behaviour from the early weeks to later sessions was observed by club leaders: 'By the end they would suggest their own games and go off and organise themselves' (Group leader 2, Sc5).

Content criteria

The secondary school club activities pack (Pyramid, 2011b) contains age-appropriate tasks for attendees to choose. Mutually deciding on an activity encouraged responsibility and attendees' willingness to participate (as this was generally regarded a 'fair' system). However, individual members showed initial reluctance to participate or disinterest when it was not their preferred activity. Encouraging older pupils to get involved in specific activities may be more challenging at secondary school clubs as adolescents may be generally less compliant than younger children:

The first week I was a bit stubborn towards it. Then when I sort of mixed with people it got better (Elsa, S6).

Some core activities were generally less popular with specific Pyramid groups (e.g. Art and crafts for the Year 9 club): ‘Some things [*colouring*] didn’t really suit our age, they were for younger children’ (Sunday, S6). This reflected the importance of having in-built flexibility in the programme and to modify tasks and activities appropriately:

They didn’t like the circle time [*activity*] so we had to take that into account and we changed it...to speed dating (Club leader 1, Sc3).

5.4.3.2. Thematic category: Behaviour change techniques

Behaviour change techniques refers to the underlying mechanisms that may influence behaviour change in attendees. Appropriate subthemes were labelled according to the *BCT Taxonomy v1* (Michie et al., 2013).

Demonstration and practice

Demonstration of behaviour was threaded throughout attendees’ accounts of their Pyramid club experience. Club leaders regularly provided observable sample behaviours for attendees to imitate and practice. The inter-club leader relationship previously described illustrates how, through their own good practice of working well together (e.g. ‘communicating well’ and ‘knitting together’), club leaders were providing a consistent, positive example for attendees to follow: ‘I enjoyed cooking with the ‘teachers’ [*club leaders*]...they used to show us everything’ (Princeton, Sc2), and ‘They made us like imagine and do creative stuff’ (Ramsey, Sc3).

Club leaders facilitated the process of social learning (Bandura, 1977) by modelling targeted behaviours. Modelling appropriate behaviours is a stated activity in the Pyramid club theory of change and an accompanying assumption is that attendees are able and willing to imitate them:

We stood back quite a bit and actually we showed them us having a laugh as a group. It was modelling to them, they had to learn how to do it for themselves but to be there doing it in that safe environment (Club leader 2, Sc6), and

It also made sense *[to attendees]* to tell their own stories because we would bring our stories to share (Club leader 1, Sc7).

Attendees looked up to and respected club leaders, augmenting the social learning experience (Bandura, 1977): 'She was like an older...like a role model for us' (Kawai, Sc8), and

They said they liked our positivity. One of the girls said how we come in with a positive attitude so she said she's found herself putting a positive spin on things (Club leader, 2, Sc3).

Core activities are designed so attendees can practise targeted behaviours, for example, developing social skills. This was explicit in some of the activity-based tasks and articulated by attendees: 'Loads of games involved talking to people' (Troy, Sc7), and

We did the tower *[made from newspaper]*. It showed us how important it was to communicate (Charlotte, Sc8).

Other core activities (e.g. arts and crafts) focused on building confidence and self-esteem through creativity and task completion, and the development of social skills was more implicit:

But during craft time the chatter flowed and it's because the focus I suppose was on the craft and not on who was saying what (Club leader 5, Sc5).

Food preparation and sharing snacks was associated with facilitating informal conversations and encouraging prosocial behaviours:

Taking turns as well ... they'd say, How many are there, is there one each?...a very important skill to learn (Club leader 1, Sc6).

Social reward

Attendees received encouragement and positive reinforcement from club leaders. This links to one of the underlying tenets of Pyramid, praise and recognition. Attendees were encouraged to engage in sessions and find their 'voice'; everyone's contribution was recognised and valued:

I enjoyed [*circle time*] talking about different subjects...They [*club leaders*] were positive and they made it fun (John Paul, Sc7), and

I liked how we got to boost our confidence and how we all got to say things out loud and how everyone got to be themselves there. Because usually if you are like in a group, you usually don't get to talk (Becky, Sc8).

Task-based activities such as decorating cupcakes, designing t-shirts etc. are intended to help encourage self-efficacy and a sense of achievement and club leaders were on hand to offer support if needed and to praise individual effort:

We were always there talking to them, trying to keep it light-hearted and positive...we were consistently like that which I think they felt was reliable (Club leader 2, Sc7).

Social support (emotional)

As described (section 5.4.1.2) Pyramid club offers social support to attendees in a nurturing environment where they can feel safe and not anxious. Within the supportive environment of Pyramid club, attendees were able to find their 'voice' and share their thoughts and feelings with others: 'She started to open up about what's going off at home, so that was good' (Club leader 1, Sc4). Club leaders were integral in creating a socially supportive environment:

We would also bring our own stories to share...as the time went on, she felt very, very comfortable to basically share (Club leader 1, Sc7).

Social support was demonstrated among club members who showed mutual respect and were able to relate to each other's common experiences. This is inextricably linked to the theme of group identity: 'At Pyramid we were all caring about each other...you can share and not be embarrassed' (Hermione, Sc2), and 'You have fun [*at Pyramid*] and don't have to be shy' (Martin, Sc1).

Goal setting (behaviour)

Goal setting was embedded in club activities through explicit learning aims. Club leaders matched games and activities with learning goals:

We looked at the issues to see for them as a group, whether it was assertiveness or being positive and so we would always agree it together to bring to the activities the following week (Club leader 2, Sc7).

Club members linked engaging in specific activities with learning new skills:

It [*Pyramid*] taught us not to be shy and to be more confident. Because in the activity [*role play*] it made people more confident (Sam, Sc8), and

Well my favourite bit was when we were all together and learning about friendship.
We would play a game that's linked to that (Lucy, Sc4).

5.4.4. Global theme 4: Challenges and threats

The global theme challenges and threats (*Figure 5.3.*) refers to factors which may negatively impact on the effectiveness of Pyramid, limiting or impeding anticipated behaviour change. This encompasses potential risks to the effectiveness of Pyramid and links to **RQ3**.

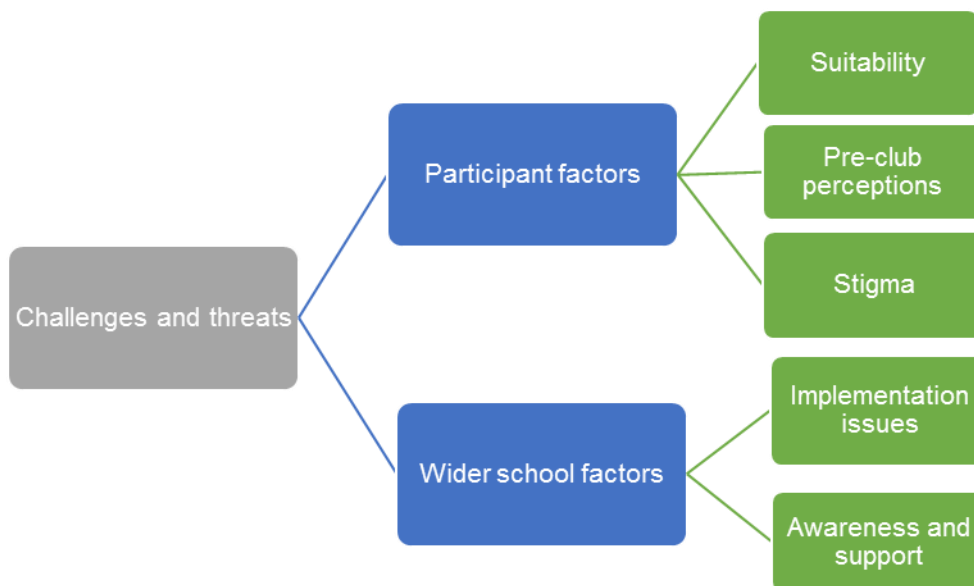


Figure 5.3: Global theme 4: Challenges and threats

5.4.4.1. Thematic category: Participant factors

Suitability

Pyramid is a selective intervention, however, the degree to which selection criteria were adhered to was variable:

It has been explained [*to teachers*] but we were still getting children with behavioural issues being recommended for Pyramid (Club leader 5, Sc5).

The presence of pupils who appear not to meet the criteria (e.g. individuals with externalising difficulties) impacted on the rest of the group:

At the beginning we had one boy who was just all over the place...before he came the group was fine but when he arrived it was like a bull. He disturbed the whole group (Club leader 3, Sc3).

Whilst the negative impact of this on other club member's experience was recognised by club leaders, some evidence suggested that after an initial period, having a 'non-typical' Pyramid pupil in the group encouraged other members to contribute more:

Having someone like _____ was bringing them out because there was always a conversation (Group leader 2, Sc4).

This raises important questions regarding the selection process which refers to both individual suitability and group compatibility which are discussed further (section 7.3.2.).

Pre-club perceptions

Perceptions of Pyramid before attending indicated a lack of awareness or uncertainty about what to expect, some young people reported negative feelings/associations and an initial reluctance to attend:

I was expecting it to be a bit boring...I thought it would be a bit cheesy and I didn't think it would be good (Elsa, Sc6), and

Perhaps they felt they had to come the first couple of weeks. [*We asked*]: *Why do you think you are all here?* Some of their responses were quite sad. I remember them saying: *because we're not very popular* (Club leader 2, Sc7).

However, perceptions changed after trying Pyramid club: 'I thought I doubt that [*Pyramid club*] would be good but I gave it a go and it's really good' (Jeff, Sc5), and

I feel proud [*completing Pyramid club*]... when I first read the thing [*about Pyramid*]

I thought it was going to be a gymnastics club (Jessica, Sc1).

Stigma

Stigma associated with Pyramid club emerged as a potential challenge. Stigma may impact on an invitee's willingness to join Pyramid club and, moreover, is detrimental to an individual's well-being and can cause distress (Schachter et al., 2008). Experience of stigma was not widely reported but some negative comments from school peers were received: 'They basically just started making fun and they just got on my nerves' (Perseus, Sc6), and

They [*class peers*] didn't know what it [*Pyramid*] was because people said things about it: *Oh, you've got to go there just to make friends. And being a bit mean* (Sunday, Sc6).

However, club leaders reported that attendees typically showed a sense of pride in being a Pyramid club member:

They are proud of where they go. I hear them in the corridor when someone says: *Where are you going? [They say]: I'm going to Pyramid club!* (Club leader 5, Sc5), and

It was their idea: [*they said*]: *we want to make a [thank you] card for Ms _____ for choosing us to send to Pyramid club'* (Club leader 1, Sc2).

5.4.4.2. Thematic category: Wider school factors

Implementation issues

Implementation issues refers to practical or physical limitations which inhibit optimum intervention delivery. Lack of relevant background information on children (and/or ineffective screening) was identified as a procedural barrier, with some schools not providing pupil profiles before clubs started. This is linked with participant factors described earlier (section 5.4.4.1), as a potential consequence was unsuitable pupils being allocated a place at Pyramid club.

As previously reported, the school-based setting of Pyramid involves access to school resources on a club-by-club basis and the suitability of allocated club spaces was mixed:

They just said they wanted a bit of freedom. We couldn't extend to outside the classroom which was sometimes quite difficult (Club leader 3, Sc2).

As clubs were mainly hosted in working classrooms there could be implications for setting-up and a delay starting the session:

[The thing I liked least was] the wait at the startyou have to wait before you can go into the room (Jessica, Sc1), and

Starting so soon after the school day was difficult at times..... It's hard to give them 100% of your attention when they arrive because maybe you are setting-up (Club leader 3, Sc5).

Programme duration, the best time of day (during school hours or after school) for Pyramid club and the ideal length of sessions were discussed. Attendees felt the appropriate length of sessions probably depended on the type of activity they were doing (e.g. cooking usually takes longer) and timings should be made flexible to suit.

Establishing regular attendance emerged as a practical challenge which had implications for planning sessions:

When we had activities for all and only seven people turned up. So you had to change it on the spot (Club leader 2, Sc3).

And also for maximising the number of pupils who could benefit from the intervention:

Two never came so from that point onwards, you've missed out on the initiation of it. Which is quite sad really because there are children who could have benefitted (Club leader 1, Sc6).

Awareness and support

Club leaders recognised that a greater awareness of Pyramid among staff and the wider school community was a pertinent issue, integral to supporting attendees and enhancing intervention effectiveness: 'They have not heard of it before and they don't understand what it's about' (Club leader 5, Sc5).

Parents demonstrated a mixed response to their child being selected for Pyramid club:

My mum said to go: *try it out. Even if you don't like it, it will still boost your confidence. I know that it will* (Freddy, Sc5), and

They took offence that their child might not be confident or be shy. They really took offence about their child being selected (Club leader 1, Sc5).

Communicating the benefits of Pyramid to parents was recognised as a challenge:

I think it's their parents, winning them over and convincing them there isn't anything wrong with their child (Club leader 3, Sc5).

Moreover, harnessing parental support to encourage young people themselves to attend clubs:

The parent wrote in to say we really want him to go and think it would be great for him but he never turned up again (Club leader 2, Sc7).

5.4.5. Global theme 5: Progression and influence

The global theme progression and influence (*Figure 5.4.*) specifically encompasses emergent issues at the end of Pyramid club and aspects linked to the wider social context. Extrapolated themes primarily relate to the future development of Pyramid but also support intervention effectiveness and, therefore, pertain to **RQ1** (i.e. impact on socio-emotional outcomes).

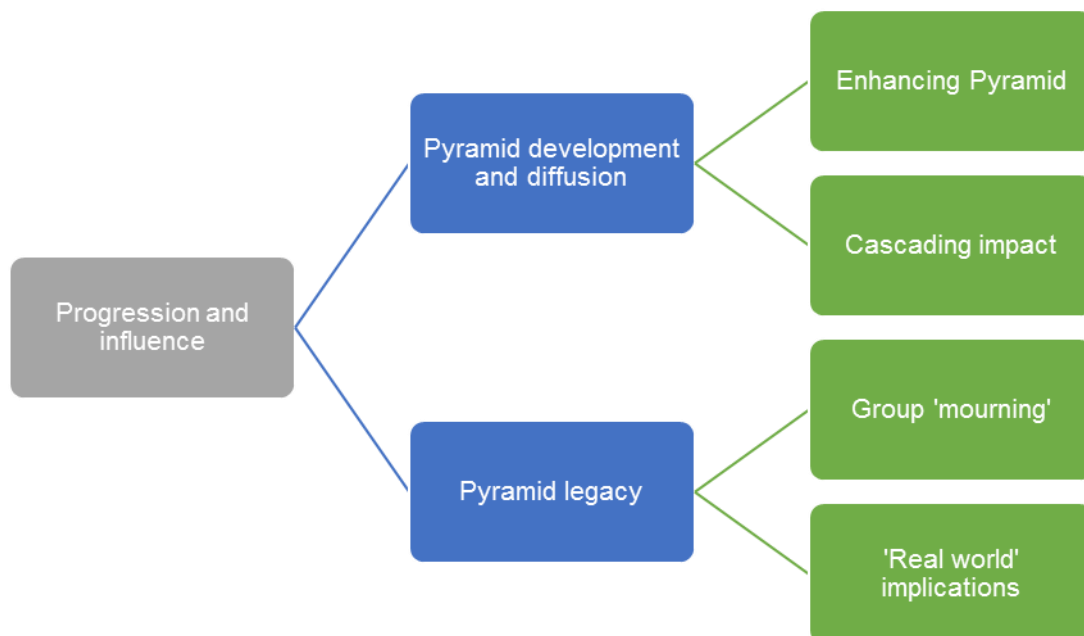


Figure 5.4: Global theme 5: Progression and influence

5.4.5.1. Thematic category: Pyramid development and diffusion

Enhancing Pyramid

The majority of attendees were very positive about their Pyramid club experience: one of the most frequent recommendations for developing and improving Pyramid was to extend the programme or to have more frequent sessions. The brevity of the intervention was noticeable if even one session had been missed: 'Add more weeks on to it because you only get 10 weeks and I missed the first week so I only got nine weeks' (Kat, Sc2).

Having some flexibility built into the duration of clubs or offering 'top-up' sessions (depending on the identified needs of individual groups) were suggested:

We were working with a very low starting point...I think some of them would have benefitted if we'd had a couple of more weeks...I would have happily done another couple of weeks...if there was the flexibility to do that (Club leader 2, Sc7), and

Have a Pyramid club that runs for a week in the summer holidays...nurture them a little bit more before they come back after the summer (Club leader 1, Sc4).

Suggested improvements for Pyramid were associated with BCPs (section 5.4.3.1.) and recommendations from attendees related to the intervention setting, delivery and content. Some clubs were restricted to inside activities, usually within one classroom, and attendees expressed a preference for a greater choice of indoor pursuits.

As described, a flexible club structure had grown across the duration of the programme. This was characterised by shared responsibility, with attendees providing input and jointly choosing activities. This was generally agreed by club members as the best format for running sessions, whilst content related suggestions overall tended to be for more of existing core activities rather than novel ones. Only one participant suggested having

access to mobile phones: 'I would have liked it if we were allowed our phones' (Sunday, Sc6), this was swiftly counter-argued by a fellow attendee: 'But if we had our phones all we would be doing is playing on our phones' (Perseus, Sc6).

Club leaders suggested engaging 6th form students as a resource for delivering clubs.

This was seen as both a practical and mutually rewarding strategy:

It helps their confidence. And most sixth formers need to put something on their UCAS form...so you've got people willing to come in and do it and are more than capable (Club leader 1, Sc6).

This delivery model had already been adopted successfully by some schools.

Suggested improvements from club leaders related to the pre-club phase of preparing for and setting-up clubs. Recommendations included gaining access to information on pupils (e.g. via contact with a nominated administrator) to facilitate awareness of specific needs and situational factors (e.g. family illness): [*We suggest*] 'a pack for schools and essential information in the pack which they should give us' (Club leader 2, Sc2).

Stricter adherence to selection criteria was a further suggestion. Ensuring the involvement of more staff to help identify the pupils most likely to benefit from Pyramid (rather than a single rater) was suggested as a tactical approach appropriate in a secondary school environment where pupils had frequent contact with multiple members of staff: 'The selection process...it's important to get more than one input' (Club leader 5, Sc5).

Some club leaders felt less prepared for working with older age groups and this was flagged as an area for training development: 'I would have more of an emphasis on secondary school children in the training' (Club leader 2, Sc7).

Cascading impact

Club members were willing to share their Pyramid experiences with school peers who might attend future clubs. In their unique position as Pyramid 'graduates' they felt they could help encourage new members. These proposals were consistent with previously reported gains in socio-emotional competencies (e.g. increased confidence and prosocial behaviour): 'If another club ran you could talk to them about what it's like because you've already done it' (Perseus, Sc6), and 'I would say about the activities and talk about the team work and encourage them all to come' (Ramsey, Sc3).

Attendees described how their experiences contributed to shaping successful club sessions which future groups could benefit from:

We got to say we'd like to do this. Now they [*club leaders*] know that's a good activity for other people. So you feel you've helped them [*the next Pyramid group*] (Elsa, Sc6).

Club leaders agreed that Pyramid 'ambassadors' were a valuable resource for raising wider awareness; a better understanding and promotion of Pyramid were recognised as important to support the growth of future clubs: 'We need to market it better next time' (Club leader 1, Sc6); 'The best thing really is to get them to hear it from another student rather than from an adult' (Club leader 2, Sc2), and

I also think it would be handy for teachers to see that's a Pyramid child. We would also like them [*teachers*] to feedback on the progress of those particular students.

How they are doing now in lessons? Have they noticed a difference?' (Club leader 5, Sc5).

5.4.5.2. Thematic category: Pyramid legacy

Group 'mourning'

Club members experienced mixed emotions at the end of the 10-week programme. The majority of attendees were upset that their club had finished and were sad to say goodbye to club leaders: '*[I feel]* upset because we won't be able to see them *[club leaders]* again' (Becky, Sc8). Club leader observations illustrated the bond that had developed between the leaders and attendees:

The cards they wrote were so lovely and they were reaching out for cuddles. But they were really sad about going (Club leader 2, Sc7).

Despite feeling sad, attendees were able to reflect on what they had achieved over the duration of the programme. Newly developed competencies were transferable to the wider social arena:

I did feel sad on the day *[Pyramid ended]* but now I see how it helps and it's made me more confident and I can actually talk to people (Caterpillar, Sc5), and

I feel very proud in the way I've been to Pyramid and I've built more confidence, so there's a point in me going, rather than just going to have fun (Sarah, Sc8).

'Real world' implications

The impact of Pyramid on specific outcomes (i.e. socio-emotional well-being and school performance) in the short-term was evidenced and have been described in detail (section 5.4.2.1). Whilst it can be argued that short-term improvements may attenuate, previous Pyramid evaluations (e.g. FitzHerbert, 1985; Ohl, 2009) and the wider literature (e.g.

Kolvin et al., 1981; Scott-Loinaz, 2014) indicate that immediate gains from brief, group-based interventions can endure. In the current study, post-test improvements suggested stability in the longer-term with wide reaching effects. A number of ‘success stories’ emerged and future benefits were anticipated:

I think it’s about how it’s affected them in the long-term not just in the 10 weeks...It’s opened doors for them really (Club leader 2, Sc5), and

One of the girls is now taking part in volunteering work at school and she was the one who didn’t have any confidence at the start (Club leader 1, Sc3).

The ‘real-world’ implications of Pyramid were also discernible in club leaders’ individual accounts. Satisfaction and personal and professional development were described: ‘I think it’s made me better at my job’ [*Pastoral support worker*] (Club leader 1, Sc1); ‘I think it was a positive experience...it helped my confidence as well as the children’s’ (Club leader 5, Sc3), and ‘It was fun, it was rewarding to see the gradual and in some cases quite quick change’ (Club leader 2, Sc2).

An enlightened view regarding the importance of pupils’ socio-emotional well-being was elicited from club leaders (especially those who were school staff), with potential implications for future intervention implementation and influence on school culture:

I’ve also learnt that school’s not all about getting good grades. It’s about developing the child as a whole. There’s more to a child than just the grades. They need to have the social skills...be able to talk to their peers and stuff like that. That’s really important I think as well (Club leader 2, Sc5), and

Don't worry about the science - until you get their well-being right they're not in a place to engage in the classroom. When they're ready emotionally, then they can engage with the work (Club leader 5, Sc5).

5.5. Summary and discussion of the qualitative findings

The findings of the qualitative study and its limitations are considered in this section. The active components of Pyramid underlying behaviour change are fully presented within a theoretical context in the concluding chapter, where qualitative and quantitative findings are integrated and implications for theory, practice, and further research are discussed.

The thematic analysis of data from focus groups with Pyramid attendees and club leaders identified improvements in targeted domains (i.e. socio-emotional competencies) from pre- (T1) to post-club (T2). This provides confirmatory evidence in relation to **RQ1** and strengthens the conclusions drawn from Study One (section 4.5.) through triangulation of method (Bryman, 2012). Nonetheless, some disconfirming qualitative evidence was presented which suggested that a very small number of attendees perceived Pyramid to have had no effect and this merits further investigation.

Key tenets of healthy child development: praise and recognition, love and security, new experiences, and responsibility (Kellmer-Pringle, 1980) are embedded within the inter-related components of Pyramid (Pyramid schema) and were elicited from the data.

Attendees' Pyramid club experience was typified by learning new competencies and developing positive relationships. Perceived benefits included increased confidence, social skills, coping skills, and emotional regulation. Improvements in targeted areas were manifest in attendees' sense of personal change (from pre-club depictions of 'shy' pupils to post-club descriptions of 'confident' young people: encapsulated within the theme of

identity). This evidence suggests Pyramid is an effective socio-emotional intervention for selected pupils in early secondary education and is consistent with findings from quantitative (e.g. Cassidy et al., 2014; 2015; McKenna et al., 2014; Ohl et al., 2012; 2008) and qualitative (e.g. Lyons & Woods, 2012, Ohl et al., 2013) studies of primary school Pyramid clubs.

Impact on attendees' school performance (i.e. **RQ2**) was also elicited. Socio-emotional competencies were applied in the wider school context and identified in the classroom (e.g. presenting work confidently and collaborating with others in group tasks).

Improvements in non-targeted domains which relate to school performance and may impact on academic outcomes were reported by attendees, including greater participation and engagement in lessons, and increased motivation and capacity to learn. Club leaders' accounts were consistent: their own observations and feedback from class teachers supported the nurturing of educationally relevant behaviours which could have a longer-term impact on academic outcomes. Quantitative results (Study One) had shown a slight increase in Pyramid pupils' ability self-concept in English and Mathematics, although not statistically significant. However, the qualitative findings suggested an impact on other 'academic enablers' (relevant behaviours and attitudes to enhance progress: DiPerna & Elliot, 2002) e.g. volunteering to answer questions in class. This can affect academic progress and, importantly for the research reported in this thesis, supports the rationale to measure changes in pupils' academic performance at longer-term (12-month) follow-up.

The Pyramid club theory of change (Hughes, 2014) was used as a framework for the current evaluation and findings from Study Two show how the application of multiple theories embedded in the model created a unique 'synergy', allowing expected outcomes to be achieved (section 7.3.1.). Behaviour change drivers were thematically organised as procedures or techniques. Behaviour change procedures (BCPs) encompassed the

setting, delivery and content of Pyramid. These elements are either incorporated within the pre-club phase e.g. negotiating a suitable room (section 2.3.1.) and/or are components of the 'activities' criterion of the Pyramid club theory of change (Hughes, 2014) e.g. 'therapeutic activities' delivered by trained agents. Underlying mechanisms of change were categorised as behaviour change techniques (BCTs) (Michie et al., 2013) and were identified as: demonstration and practice (incorporated within the Pyramid club theory of change), social reward and social support (which correspond to two underlying tenets of Pyramid: praise and recognition, and love and security), and goal setting (targeting specific behaviours through new learning experiences). These findings help to explicitly align Pyramid's theoretical framework within a competence enhancement model (Huppert, 2009; Keyes et al., 2010) (section 7.3.1.1.).

The global theme 'challenges and threats' presented several factors that can impinge on the effectiveness of Pyramid, exposing potential behaviour change inhibitors: this is of key relevance to future Pyramid club implementation and diffusion (section 7.3.2.). Participant factors included the suitability of selected club members (pupil selection using prescribed processes is an assumption of the Pyramid club theory of change), pre-club perceptions (which relates to the pre-club phase and the effective promotion of Pyramid), and stigma (recognised as a concern with selective interventions: Fisak, Richard, & Mann, 2011; Greenberg, 2010). Wider school factors were linked with BCPs: lack of pupil information, room/resource restrictions, programme duration, club timings and session length emerged as procedural issues (which pertain to the pre-club phase). Attendance was an important implementation challenge and can be linked to awareness and support for Pyramid from the wider school community (also identified as an area for development).

The perspective of CYP was of paramount consideration in the current research and is integral to evaluating services which impact on them (McLaughlin, 2015; Shaw et al.,

2011). Suggested improvements from club attendees (incorporated in the thematic category Pyramid development and diffusion) related to BCPs, including delivery aspects (e.g. number and duration of sessions) and content criteria (e.g. variety of activities). Moreover, feedback from both attendees and club leaders has influenced Pyramid's development, helping to enhance applied practice: a novel contribution of this study is that service users' and club leaders' perspectives have contributed to the creation of an extended five-part Pyramid model (section 7.5.1.).

The thematic content of Pyramid legacy encapsulated both the immediate aftermath following the 'demise' of each club and the longer-term implications. Group 'mourning' supports the effectiveness of Pyramid with regard to targeted outcomes (i.e. **RQ1**). However, when Pyramid club finished mixed emotions were expressed: attendees exhibited a sense of loss; the group to which they were 'connected' (encompassed in the subtheme 'group identity') had formally ended. Nonetheless, club 'graduates' simultaneously felt rewarded; they had accrued socio-emotional competencies and enjoyed a sense of personal achievement. Attendees reflected on how, post-club, they felt they could apply newly developed skills in the wider school environment and beyond and this was something they were proud of. Opportunities for attendees to flourish and develop their potential were identified through wider school connections (e.g. attending extra curricula activities, and participating and engaging more in class). Sustained socio-emotional well-being and associated benefits on school performance were anticipated by club leaders e.g. pupils were deemed better equipped to engage in learning and do well, having had their socio-emotional needs nurtured. Pupils' socio-emotional well-being and the potential longer-term effects on academic performance (i.e. changes in NC sub-levels in English and Mathematics) are examined in a 12-month follow-up, quantitative study (Study Three).

Benefits for club leaders related to both volunteer satisfaction and personal and professional development. Of particular pertinence was the heightened awareness amongst club leaders of the value of developing socio-emotional competencies in the school environment. This has implications for intervention diffusion (e.g. via positive feedback to the senior management team responsible for programme selection), and the potential to impact on wider school culture (e.g. encouraging a school-wide ethos which values socio-emotional well-being). Engaging the whole school community can help foster an ethos which reinforces and amplifies pupils' socio-emotional development (Banerjee et al., 2014). This proposition is discussed further in Chapter Seven in the context of integrating a five-part Pyramid model in Health Promoting Schools.

5.5.1. Researcher reflexivity

The reflexive process enables the researcher to consider their position and clarify any biases, conscious or unconscious, they bring to the study (Bryman, 2012), thus providing a criterion against which the quality of the research and the trustworthiness of the findings can be assessed. Emphasis is on the need to identify sources of bias and then to apply strategies to deal with them (Cohen, Manion, & Morrison, 2013). At every stage of the current study the researcher was conscious of her role and subjectivity and the potential impact of bias on both the research process and interpreting the findings. The researcher has worked in secondary schools with young people in both a teaching and advisory capacity and as a Pyramid club leader in a primary school. This experience equipped her with skills for the facilitator role (e.g. active listening, interviewing and running groups). However, the researcher was aware that her prior experience as a club leader may have caused her to anticipate responses from participants and be less aware of novel phenomena when directing the flow of the discussion. As described, steps were taken to ensure all participants' responses were suitably probed for elaboration, helping to reduce the risk of novel phenomena being overlooked. The researcher's status in the research

encounter (an adult authority figure) was reflected on and focus group protocols as previously described were designed to address this concern and an informal research encounter was purposively created.

5.5.2. Limitations of Study Two

There were several limitations to the current study which relate to aspects of implementing a focus group method, data collection by a single researcher, factors pertinent to the thematic analysis and the notion that self-reported verbal data may not translate to behavioural change. A further concern relates to establishing the 'quality' of qualitative findings, as a broad conception of what this constitutes exists in the literature (Cresswell, 2003). Researchers should, therefore, select a 'core term' which best fits with the philosophical assumptions of their study (Savin-Baden & Major, 2013). For example, 'trustworthiness' is congruent with the critical realist stance of the current research. The four essential tenets of 'trustworthy' qualitative research are credibility, dependability, confirmability, and transferability (Lincoln, Lynham, & Guba, 2011), which the researcher sought to uphold: these elements are discussed in the context of the study's limitations.

Adult authority is a specific issue when focus group participants are CYP as they may see the researcher as the 'expert' and be inclined to provide responses they feel are expected (Gibson, 2007). Although a degree of social desirability and acquiescence cannot be excluded from the current study, it is unlikely that the attendees' accounts were biased in any important way. As described (section 3.5.), the research was designed to reduce perceived power differentials and to minimise acquiescence and social desirability bias. Participants were encouraged to express their views authentically and neither positive nor negative affirmations were given. In addition, the children's primarily positive accounts were corroborated by the accounts of the club leaders and observations from other stakeholders (e.g. parents, teachers). Moreover, a small number of children reported that they felt Pyramid had no impact upon them, thus demonstrating that they did not feel

obliged to give socially desirable responses. This aligns with evidence from the literature (e.g. Kirsch, 2009; Van Roy et al., 2006) that suggests adolescents are less compelled to give socially desirable responses than younger children.

The researcher also acknowledged that focus groups with club leaders were similarly vulnerable to the influence of perceived power differentials: leaders had unequal status outside of the club environment (e.g. sixth form pupils and school staff). The researcher used appropriate facilitator techniques, encouraging all participants to express their views to ensure no voices were marginalised. The focus group setting mirrored the familiar, non-hierarchical environment of Pyramid club to make participants at ease and all club leaders contributed to the discussion. Again, it is unlikely that attendees' accounts were biased in any important way.

Furthermore, to facilitate open responses and to guide the discussion a question schedule was utilised. This may have primed participants to focus on specific aspects of their experience, for example, positive perceptions of attending/running a Pyramid club. However, this was counterbalanced by including questions which referred, for example, to aspects of the club that attendees liked the least and features attendees/leaders would change. The question schedule was used flexibly and the focus group transcripts illustrate how the discussion moved in different directions whilst still addressing the topic of interest (Savin-Baden & Major, 2013).

All focus groups were conducted by the researcher without assistance and were limited by the experience and expertise of a single facilitator. It can be argued that a second researcher would augment data collection and strengthen the credibility of the findings. Nevertheless, using constant reflexivity the researcher was able to scrutinise her position in relation to the research throughout the study. Moreover, 'thick description' (Kuzel &

Like, 1991) was used to provide transparency of the research process and an audit of the methods and procedures employed during focus group data collection (and subsequent analysis and interpretation).

Several strategies were implemented to support the credibility of the findings. Member checking with focus group attendees (i.e. through active listening techniques and paraphrasing for validation) was used to ensure responses were recorded accurately and verbatim quotations were included to articulate the 'true voice' of participants. Collecting the views of multiple informants also supports credibility (triangulation of informants) as attendees and club leader accounts were highly consistent. Whilst it can be argued that selected quotations may reflect the biases of the researcher, negative case analysis was also conducted. Disconfirming evidence was presented which suggested that a minority of attendees perceived Pyramid to have had no effect on them. It has previously been reported (section 5.4.4.1.) that some attendees were identified as 'non-typical' Pyramid members and it is possible that these pupils were those less likely to report benefitting from the intervention. This raises important questions relating to both Pyramid's effectiveness and school screening procedures which result in non-suitable pupils being offered a Pyramid club place.

Focus group data were coded and themes identified by the researcher which provides consistency in the analysis. In addition, codes and themes initially generated by the researcher were cross-validated by the researcher's first supervisor, permitting the perspective of another researcher with differing expertise to corroborate the findings (Fereday & Muir-Cochrane, 2006): high concordance between researchers was established and minor revisions to the names of some themes were agreed. This level of concordance indicates that the researcher remained neutral throughout the process and

that, although interpretation was involved, the conclusions are confirmable (Savin-Baden & Major, 2013).

Transparency in reporting is also associated with dependability and indicates the confidence a reader has that repeating the research process as described, on the same data set, will yield a similar interpretation of findings (Bryman, 2012). The researcher provided a detailed account of her rationale, selection of participants, data collection and the analysis, comprehensively documenting the method and context of the research (Lincoln et al., 2011). As previously reported, 'thick description' (Kuzel & Like, 1991) of the research process was undertaken, thus providing a solid framework for comparison (Cresswell, 2003).

Generalisability (or external validity) is not a typical aim of qualitative research (Polit & Beck, 2010), however, the concept of transferability refers to the extent to which the results are relevant to participants in other settings (i.e. Pyramid attendees or group leaders across clubs). In Study Two, young person participants (Pyramid attendees) were recruited from eight, geographically spread, clubs and represented three school years (Year 7, 8 and 9: age range 11- to 14-years). The nature of qualitative enquiry allows the unique perspective of a particular group of respondents to be presented and in the current study a range of Pyramid stakeholders was given a voice i.e. attendees of different ages and leaders from clubs run in several locations. Participants were representative of Pyramid secondary school club attendees across England and Wales and the degree of congruence between the current study context and the context to which findings can be inferred (other Pyramid clubs) was high, thus supporting the transferability of findings.

A further limitation of Study Two refers to the premise that an individual's verbal views may not translate to behavioural change, concurrent or future (Pinfold et al., 2003): this limitation also applies to written questionnaire responses e.g. self-report quantitative data in the current research. However, as previously described there was high consistency between club leader and attendee accounts, supporting behaviour change in Pyramid attendees from pre-club (T1) to post-club (T2). Moreover, club leader accounts included corroborating evidence from other witnesses (e.g. parents, school staff) who also observed pupils' improved socio-emotional competencies.

5.6. Conclusions and implications for the thesis

In line with the quantitative findings which demonstrated the short-term effectiveness of Pyramid, findings from the current study support the rationale for investigating sustained behaviour change over the longer-term and the potential impact on academic outcomes (i.e. Study Three). The next chapter, therefore, examines whether short-term improvements in socio-emotional competencies (identified in Study One and supported by Study Two) are sustained at 12-month follow-up, and investigates impact on pupils' school performance as measured by academic level. A full synthesis of the quantitative and qualitative findings in the context of relevant theory, the extant research, and current policy and practice is provided in Chapter Seven.

Chapter Six

Study Three: evaluation of the longer-term impact of Pyramid

Chapters Four and Five documented the short-term impact of Pyramid on a cohort of pupils in early secondary education and reported gains on the dual domains of interest: socio-emotional well-being and pupils' school performance. This chapter reports a follow-up study using quantitative methods to identify if improvements in socio-emotional well-being demonstrated at two weeks post-test had been sustained one-year on, and to examine pupils' academic progress. An analysis of the data is presented and key findings are considered in relation to previous conclusions.

6. Context and research objective of Study Three

The objective of Study Three was to investigate the impact of Pyramid at 12-month follow-up and the research questions examined in Study One and Study Two:

RQ1: Does the Pyramid intervention impact on the socio-emotional health of pupils in early secondary education?

RQ2: Does the Pyramid intervention impact on early secondary-aged pupils' school performance?

A synthesis of the evidence from previous longer-term evaluations of Pyramid was presented in Chapter Two (section 2.4.) and, combined with the short-term findings from the current research (Chapters Four and Five), informed the rationale for Study Three. In particular, findings from a study with primary school children (aged 7- to 8-years) demonstrated sustained improvements for intervention pupils' socio-emotional well-being on targeted domains compared to a comparison group (which showed a decline) at 12-month follow-up (Ohi, 2009). Stable improvement was found in a study with the same age group where significantly higher pre-club TD scores on the SDQ (Goodman, 1997; Goodman et al., 1998) for the intervention group aligned with those of comparison group peers at 12-month follow-up assessment (Goodwin, 2009). This was attributed to a significant increase in the comparison group TD scores and a 'buffer effect' of Pyramid on

the intervention group. Moreover, in addition to sustained gains in socio-emotional well-being, follow-up studies have shown longer-term impact on school performance measures: for example, greater social skills and academic progress (FitzHerbert, 1985), and increased learning skills and motivation (Cooper, 2001), relative to comparison group pupils. Despite methodological limitations (section 2.4.), evidence from primary school evaluations suggests that short-term socio-emotional gains for Pyramid recipients were sustained at one-year (or longer) follow-up assessment, supporting the durability of the intervention's impact.

In line with initial findings from primary school Pyramid studies examining longer-term impact (e.g. Cooper, 2001; FitzHerbert, 1985; Goodwin, 2009; Ohl, 2009), the current research on an older cohort (aged 11- to 14-years) has shown significant short-term improvements in targeted socio-emotional domains for Pyramid attendees compared to comparison group peers (section 4.5.). Through method triangulation, evidence of Pyramid's effectiveness (Study One) was supported by qualitative findings (Study Two) gleaned from a thematic analysis of focus group data from service users and club leaders (section 5.5.).

Furthermore, findings from Study One demonstrated a statistically significant cross-over interaction whereby pupils' ability self-concept in English and Mathematics increased for the Pyramid group but decreased for the comparison group, suggesting a 'buffer effect' against the academic 'dip' characteristic of this developmental stage (section 4.4.6.). This is consistent with qualitative findings (Study Two) which indicated an impact on educationally relevant behaviours (or 'academic enablers': DiPerna & Elliot, 2002) for the Pyramid group (e.g. increased participation and engagement in the classroom). In Study One, the between groups difference in academic National Curriculum (NC) sub-level movement (in English and Mathematics) from baseline (T1) to post-test (T2) was not

statistically significant. However, it was anticipated (in keeping with a competence enhancement model: Huppert, 2009; Keyes, 2010) that at T3 (12-month follow-up) improved socio-emotional competencies would have had sufficient duration for effects to have cascaded and be identified on objective measures of school performance. Previous studies have shown outcomes on academic measures at longer-term assessment (e.g. Challen et al., 2010; FitzHerbert, 1985; Scott-Loinaz, 2014).

6.1. Method

6.1.1. Design and measures

A quasi-experimental 2 x 3 mixed model design; group type (intervention or comparison) constituted the between groups factor and time point (baseline: T1; post-test: T2, or 12-month follow-up: T3) the repeated measures factor. A priori power analysis (G*Power 3: Faul et al., 2007) projected a sample size of N=86 to detect a medium effect size ($d = .5$) for a mixed model ANOVA with alpha at .05 and 80% power, and N=27 for a within subjects t-test (same ES, alpha and power).

The measure used in Study Three to examine socio-emotional well-being was the Strengths and Difficulties Questionnaire informant-rated version (SDQ: Goodman, 1997) which enabled comparison with T1 and T2 data. This measure has been described in detail (section 3.3.4.1.1.). Results from Study One using cross-informant (school staff and self-report) versions of the SDQ showed a similar pattern of change for the Pyramid group (i.e. significant improvements in targeted domains: emotional symptoms and peer relationship problems) and increased prosocial behaviour was identified from informant-rated data. Socio-emotional improvements were supported by a second self-report measure of well-being (the WBQ: NPC, 2010). For Study Three it was considered acceptable and prudent to implement a single measure of socio-emotional well-being (the SDQ informant-rated version). In Study One, as reported, multiple measures had shown

similar findings. Moreover, the informant-rated SDQ's robustness as an indicator of child and adolescent psychopathology is amply supported in the literature (e.g. Goodman et al., 2000a); it has been used in previous follow-up evaluations of Pyramid (e.g. Goodwin, 2009; Ohi, 2009) and it is relatively easy to administer (practical and time effective compared to collecting data from pupil self-report measures), and was deemed likely to yield a higher response rate from schools. Consistent with Study One, adult informants were teachers or members of school staff (e.g. Pastoral staff) who knew the pupil well.

The single measure to examine pupils' school performance in Study Three was academic level in English and Mathematics (requested in NC level provided by schools): academic data are regularly collated and readily available in schools. However, NC levels were removed as a common assessment framework in 2015 to allow greater flexibility for schools (National Association of Head Teachers) (NAHT, 2014). Schools were permitted to continue with NC levels during a transition period and as a consequence of these changes, T3 English and Mathematics data for Study Three were provided in NC levels by five schools (54 pupils) and in current GCSE levels by two schools (28 pupils).

6.1.2. Participants

Seven of the eight participating schools from Study One contributed to the follow-up evaluation research. Pupils in the Pyramid and comparison groups had been matched on age, gender, ethnicity and SES at T1. School 3 declined to provide 12-month follow-up data without explanation. Participants were all secondary school pupils attending the remaining seven schools in either England or Wales. T3 data were not available for eleven pupils from the Pyramid group who contributed data for Study One (four pupils had relocated and data for School 3 (seven pupils) were not provided). T3 data were not available for seven pupils from the comparison group (one pupil had relocated and data for the remaining six (from School 7) were not provided: School 3 did not provide

comparison group data at T2 or T3. The final sample (N=99) comprised 55 Pyramid pupils (22 males; 33 females) and 44 comparison pupils (22 males; 22 females). The attrition rate from Study One for the follow-up (T3) evaluation was 15% (N=18) of the original sample: five males and six females from the Pyramid group, and three males and four females from the comparison group. Demographic details for the current Study Three sample are provided in *Table 6.0*.

Table 6.0: Demographic characteristics of Study Three participants

School ID/location	Current Year group	Total N Pyramid group (N=55)	Gender N (male/female)	Total N Comparison group (N=44)	Gender N (male/female)
1: Wales	8 & 9	6	5 male/1 female	6	5 male/1 female
2: LB Ealing	8	8	4 male/4 female	6	3 male/3 female
4: Wales	8	8	5 male/3 female	8	5 male/3 female
5: Wales	8	7	3 male/4 female	7	3 male/4 female
6: Surrey	9	7	3 male/4 female	7	4 male/ 3 female
7: LB Ealing	10	8	2 male/6 female	4	2 male/2 female
8: LB Ealing	9	11	11 female	6	6 female

LB = London Borough

Note: School 3 (Study One sample) did not provide follow-up data and has been removed from T3 analysis

6.2. Procedure

Ethical approval and valid consent for the collection of T3 data were received from relevant stakeholders (section 3.5.). The researcher contacted the respective school Pyramid Coordinator or Head of Year from all eight schools that had participated in Study One to request collection of follow-up data.

A copy of the SDQ (informant-rated version) was re-distributed to each school Pyramid Coordinator to circulate to relevant school staff to complete. In line with the procedure implemented in Study One, the member of school staff who knew the pupil best was

selected to conduct the assessment (as pupils had moved up one academic year this was not the same rater as T1 and T2). Completed SDQ forms were collated by the school Pyramid Coordinator and returned to the researcher with current academic data (English and Mathematics levels) for Pyramid and comparison group pupils.

6.3. Data analysis strategy

Consistent with the strategy described in Study One, data were only included in the analysis if sets of scores (T1, T2 and T3 data) for participants were available. The distributions of the data were assessed to ascertain if the assumptions of parametric testing were met. As in Study One, a significant positive skew was expected in the distribution of the data collected from the comparison group. Nonetheless, in line with the rationale previously outlined (section 4.3.) the researcher conducted the analysis without data transformation.

Descriptive statistics were calculated to summarise data from the SDQ informant-rated version and identify trends. A Kolmogorov-Smirnov test was selected to ascertain any deviations from normality in the data distributions. Data were also explored by comparing the original mean with the 5% trimmed mean to inform the selection of appropriate inferential tests which were subsequently undertaken. In the between groups analysis, if the assumption of homogeneity of variance was not met, results corresponding with the 'equal variances not assumed' calculations were reported. Violations of the assumption of sphericity were assessed using Mauchly's test of sphericity. If significant (with an epsilon value > .75) the Huynh-Feldt correction was reported (Girden, 1992).

6.4. Results

6.4.1. The SDQ informant-rated results

6.4.1.1. Preliminary analysis: data exploration

As anticipated and consistent with Study One, visual inspection of the full data set indicated that Study Three data distributions for the TD scale and composite subscales were positively skewed (indicating the low levels of psychopathology in the general population). Values of skewness and their respective standard errors were used to calculate ratios and assess significance, and data were found to be significantly positively skewed ($p < .05$). Also in line with the exploratory analysis results for Study One, Study Three data for the prosocial subscale were found to be significantly negatively skewed (the majority of participants had high scores).

Scores for the Pyramid and comparison groups were inspected separately to identify their distributions. Results from a Kolmogorov-Smirnov test demonstrated that Pyramid TD scores did not deviate significantly from normality at T2 ($D(55) = .087, p > .05$), or at T3 ($D(55) = .090, p > .05$). However, T1 data were found to be significantly skewed at the $< .05$ level: $D(55) = .124, p = .03$. As previously suggested, skewness does not make a substantive difference in the analysis given a reasonably large sample size (Tabachnick & Fidell, 2013) and whilst transformation techniques can be applied, this strategy was not adopted in the current research. Pyramid data were further explored by comparing the original TD mean with the 5% trimmed mean which identified similar mean values (indicating the mean was an accurate representation of the centre of data distribution). Results from the data exploration indicated, in line with Study One, that analysis in the current study could proceed with confidence without the need to transform the data.

6.4.1.2. Preliminary analysis: descriptive statistics

Means and standard deviations for T1 (baseline), T2 (post-test), and T3 (12-month follow-up) data for the Pyramid and comparison groups are presented in *Table 6.1*. UK normative data (11- to 15-year-olds) for the informant-rated SDQ (Meltzer et al., 2000) are provided for comparison. Significant within group differences from T1 to T2 and from T1 to T3 (to examine sustained effects) were calculated from the inferential statistical analysis that follows (section 6.4.1.3.) and have been indicated.

Table 6.1: Descriptive statistics for SDQ TD scores at T1, T2 and T3

	UK SDQ norms (age 11-15) Mean (SD)	Baseline (T1) Mean (SD)	Post-test (T2) Mean (SD)	12-month follow-up (T3) Mean (SD)
Pyramid group	6.30 (6.1)	14.40 (4.94)	9.24 (5.43) ^{***}	9.11 (5.42) ^{***}
Comparison group		5.43 (5.09)	5.20 (5.40)	5.61 (5.50)

^{***} $p < .001$

Inspection of the mean TD scores at the three time points demonstrates the pattern of change in total socio-emotional difficulties from pre-intervention (baseline: T1) to 12-month follow-up for both groups. The biggest difference in mean TD score between groups was at T1 (8.97) with the Pyramid group scoring higher difficulties, as expected. The smallest difference was at T3 (3.5) which was marginally lower than the T2 difference (4.04). For Pyramid attendees, the T1 mean TD score was more than twice that of the general population and fell in the 'borderline' (or 'slightly raised') range of difficulties: according to the three-band (and four-band) categories of 'caseness' (Table 3.1.). At T2 (post-test), the mean TD score had decreased, and although still higher than that of the general population, fell within the 'normal ('close to average') range. At T3 (12-month follow-up), the reduction in mean TD score demonstrated at T2 was similar (showing a

marginal decrease from T2 of 0.13), suggesting minimal change over the 12-month, post-Pyramid period.

The trajectory of TD scores for the comparison group over the three time points showed little fluctuation. The TD mean score was marginally lower than that of the general population at T1 (a difference of 0.87). At T2, scores indicated minimal change and the same trend was observed at T3. Accordingly, the comparison group mean TD scores fell securely within the 'normal' range according to categories of 'caseness' at all three time points.

6.4.1.3. Total difficulties scores: between and within group differences

To identify any sustained impact of Pyramid, the difference in TD scores over time was examined using a 2 x 3 mixed model ANOVA: the two groups (Pyramid or comparison) constituted the between groups factor and the three time points (T1, T2, or T3) the repeated measures factor. Levene's test was non-significant and equal variances were assumed ($F = 0.26, p = .61$; $F = 0.02, p = .88$; $F = 0.02, p = .88$). Results showed the interaction between group type and time point was highly significant: $F(1, 97) = 27.13, p < .001, \eta^2 = .124$, indicating that the TD scores of one group had decreased significantly over time. Results also showed a highly significant main effect of time point: $F(1, 97) = 23.64, p < .001, \eta^2 = .126$ and a highly significant main effect of group type: $F(1, 97) = 39.18, p < .001, \eta^2 = .288$.

Tests of simple effects were conducted to identify a significant reduction in mean TD score for the Pyramid group and if this was manifest at T3 (indicating longer-term impact). A repeated measures t-test showed a significant decrease in mean TD score across time from T1 ($M = 14.40, SD = 4.94$) to T2 ($M = 9.24, SD = 5.43$): $t(54) = 7.12, p < .001$. This

generated a large effect size ($d = 0.9$). Moreover, a significant difference was found between the mean TD score calculated at T1 and T3 ($M = 9.11$, $SD = 5.42$): $t(54) = 7.47$, $p < .001$. This also generated a large effect size ($d = 1.02$). A minimal difference was observed between T2 and T3 scores (0.13) and the statistically significant reduction in total difficulties identified at T2 was sustained at 12-month follow-up assessment.

To investigate the between groups difference in TD scores for the Pyramid and comparison groups across the same time period, two independent sample t-tests were run. A highly significant between groups difference was demonstrated at T1, with the Pyramid group showing a higher mean TD score: $t(97) = 8.56$, $p < .001$ (this generated a very large effect size: $d = 1.74$). Results for the T3 data revealed that despite a significant within group reduction in mean TD score for the Pyramid group, a significant between groups difference persisted: $t(97) = 3.17$, $p = .002$ (this generated a medium effect size: $d = 0.64$). To account for multiple testing on the data the criterion for significance was corrected (the adjusted significance level (ASL) was .01).

As previously posited, the crucial issue in evaluating the impact of an intervention is to identify whether there is a significant group*time interaction, demonstrating a distinct pattern of change for each group (Tabachnick & Fidell, 2013). Profile analysis (equivalent to the between groups main effect) demonstrated a significant difference in scores between groups and a significant within subjects effect i.e. a significant reduction in total difficulties scores across time for the Pyramid group. The distinct trajectories exhibited by the Pyramid and comparison groups from T1 to T3 are shown in *Figure 6.0*.

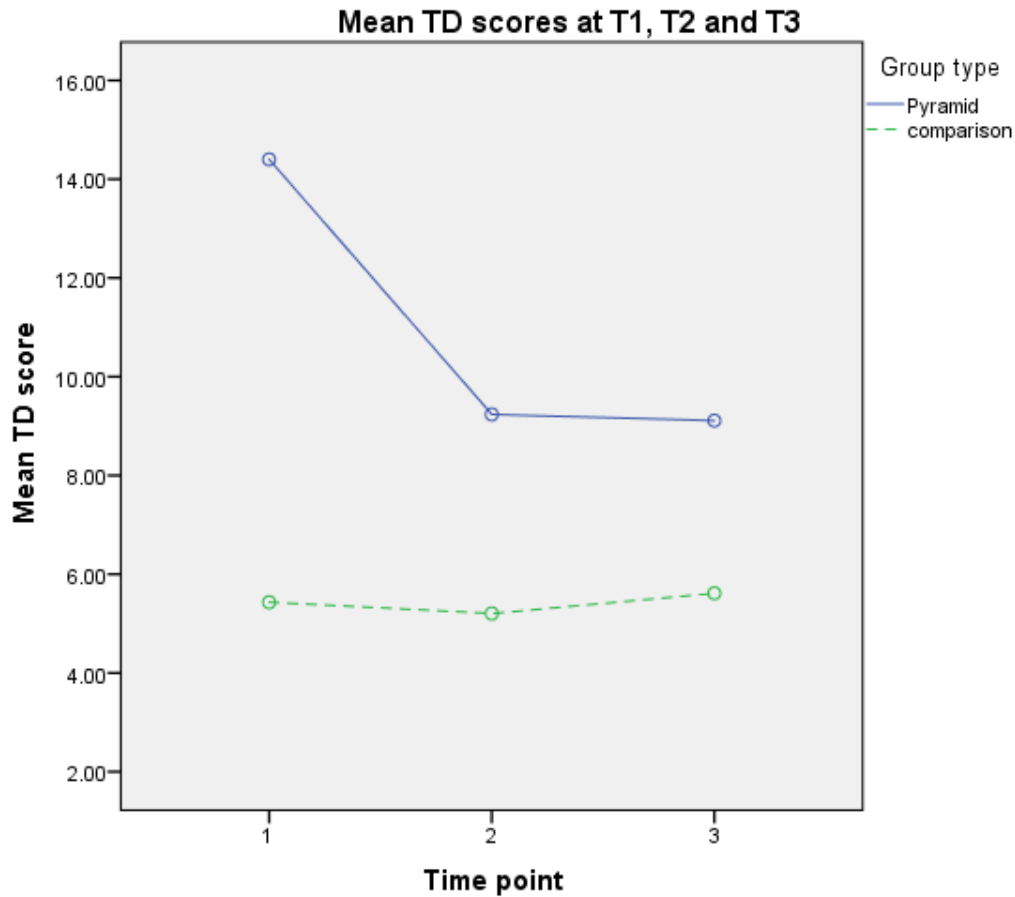


Figure 6.0: Profile plots for the Pyramid and comparison groups: SDQ TD means

6.4.1.4. Gender, ethnicity and socio-economic status as moderators

In Study One, TD scores decreased at a similar rate over time regardless of gender, ethnicity, or socio-economic status. To determine if this pattern of change was consistent for the Study Three sample, a series of mixed model ANOVAs were conducted with gender (male/female), ethnicity (White/Black/Asian/Other), and socio-economic status (eligible/not eligible for FSM) as the respective between groups factors, and time point (T1, T2 or T3) as the corresponding repeated measures factor.

Gender: Levene's test for the gender data was non-significant for TD scores at T2 and T3 ($F = 1.85, p = .18$; $F = 1.35, p = .25$) but at T1 reached significance ($F = 4.4, p = .04$). Nevertheless, a non-significant interaction effect was observed between time point and

gender: $F(1, 53) = 0.37, p = .55, \eta^2 = .007$ and the main effect of gender was also non-significant: $F(1, 53) = 0.01, p = .91, \eta^2 = .0002$. Results indicated (consistent with Study One) that changes in TD mean score for the Pyramid group were similar for males and females over time (Figure 6.1.).

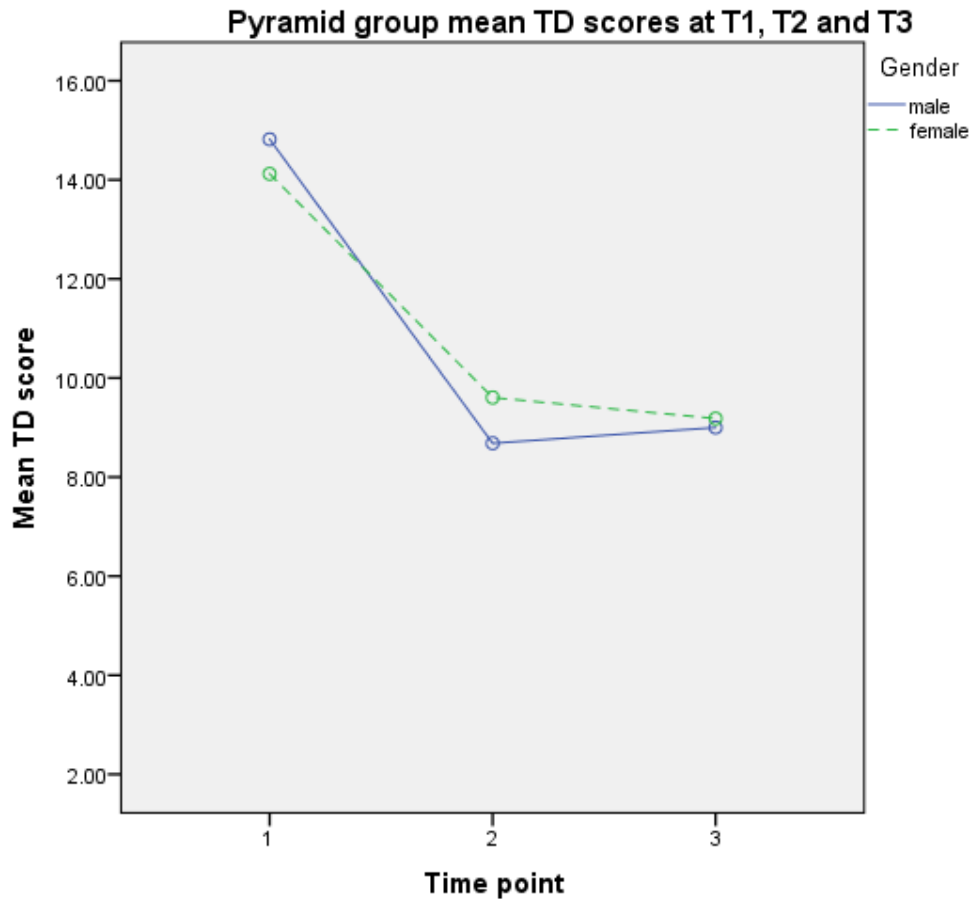


Figure 6.1: Pyramid group mean TD scores over time by gender

Ethnicity: Due to small numbers in some of the original ethnic groups (as in Study One), the original ten categories were collapsed into four broader groups (Table 6.2.).

Table 6.2: Study Three sample: collapsed ethnic categories for the Pyramid group

Collapsed ethnic category total N (%)			
White	Black	Asian	Mixed
34 (61.81%)	5 (9.1%)	13 (23.64%)	3 (5.45%)

Levene's test for the ethnicity data was non-significant for TD scores at all three time points and equal variances were assumed ($F = 0.20, p = .90$; $F = 1.39, p = .26$; $F = 2.64, p = .06$). Results from a mixed model ANOVA showed there was no significant interaction effect between time point and ethnicity: $F(3, 51) = 0.54, p = .66, \eta^2 = .07$ and the main effect of ethnicity was also non-significant: $F(3, 51) = 1.41, p = .25, \eta^2 = .08$. This suggested (consistent with Study One) that changes in TD scores over time were similar for Pyramid participants, irrespective of ethnicity.

Socio-economic status: Study One demonstrated that the main effect of FSM status just reached statistical significance at $p = .05$, although no significant interaction effect was observed between FSM status (as a measure of SES) and time point. For the FSM data from Study Three, Levene's test was non-significant for TD scores at all three time points and equal variances were assumed ($F = 0.009, p = .93$; $F = 0.87, p = .36$; $F = 0.55, p = .46$). Results from a mixed model ANOVA showed no significant interaction effect between time point and FSM status: $F(1, 53) = 0.02, p = .88, \eta^2 = .017$, and the main effect of FSM status was also non-significant: $F(1, 53) = 3.32, p = .07, \eta^2 = .059$. Findings were again consistent with Study One, and indicated that the FSM status of Pyramid participants did not have a significant effect on TD scores over time, with a similar pattern of change being observed for FSM and non-FSM pupils.

6.4.1.5. The SDQ subscale analysis

Study One demonstrated significant improvements for the Pyramid group on subscales measuring targeted domains (i.e. emotional symptoms, peer relationship problems, and prosocial behavior subscales), whilst comparison group scores remained consistent across all subscales from T1 to T2. To examine if the trends identified in the Study One data were consistent with T3 data (indicating sustained effects of Pyramid) the individual subscales of the SDQ for the Study Three sample were analysed.

6.4.1.6. Descriptive statistics: SDQ subscale scores

Descriptive statistics for the SDQ subscale scores of the Study Three sample were calculated for the Pyramid and comparison groups. Means and standard deviations for T1 (baseline), T2 (post-test), and T3 (12-month follow-up) data are presented in *Table 6.3* (Pyramid group) and *Table 6.4* (comparison group), with UK norms for 11- to 15-year-olds (Meltzer et al., 2000) for comparison. Significant within group differences from T1 to T2 and from T1 to T3 were calculated from the inferential statistical analysis that follows (section 6.4.1.7.) and have been indicated.

Table 6.3: Descriptive statistics for SDQ subscale scores T1, T2 and T3: Pyramid group

SDQ subscale	SDQ UK norms	Pyramid group (N=55)		
	(age 11-15) Mean (SD)	Baseline (T1) Mean (SD)	Post-test (T2) Mean (SD)	12-month follow-up (T3) Mean (SD)
Conduct problems	0.90 (1.7)	0.93 (1.33)	0.62 (1.1)	0.67 (1.14)
Hyperactivity/inattention	2.60 (2.7)	3.56 (2.57)	2.75 (2.09)	2.76 (2.27)
Emotional symptoms	1.30 (1.9)	5.07 (2.57)	3.18 (2.29)***	2.98 (2.30)***
Peer relationship problems	1.40 (1.8)	4.85 (2.39)	2.93 (2.38)***	2.69 (2.15)***
Prosocial behaviour (strength)	7.10 (2.4)	6.51 (2.21)	7.64 (1.98)***	7.22 (2.35)

*** $p < .001$

Table 6.4: Descriptive statistics for SDQ subscale scores T1, T2 and T3: comparison group

SDQ subscale	SDQ UK norms (age 11-15) Mean (SD)	Comparison group (N=44)		
		Baseline (T1) Mean (SD)	Post-test (T2) Mean (SD)	12-month follow-up (T3) Mean (SD)
Conduct problems	0.90 (1.7)	0.59 (1.37)	0.43 (0.87)	0.95 (1.63)
Hyperactivity/inattention	2.60 (2.7)	2.45 (2.59)	2.27 (2.64)	2.43 (2.51)
Emotional symptoms	1.30 (1.9)	1.36 (1.63)	1.27 (1.97)	1.09 (1.95)
Peer relationship problems	1.40 (1.8)	1.02 (1.17)	1.23 (1.82)	1.14 (1.52)
Prosocial behaviour (strength)	7.10 (2.4)	7.66 (2.04)	7.88 (2.28)	7.36 (2.53)

Compared with UK norms, on two of the targeted difficulties (emotional symptoms and peer relationship problems), mean scores for the Pyramid group were higher than those for the general population at T1, falling in the ‘borderline’ (or ‘high’) category. At T2, mean scores for both of these targeted domains had decreased sufficiently to fall within ‘normal’ bandings. For emotional symptoms there was a decrease of 1.89 from T1 (M = 5.07, SD = 2.57) to T2 (M = 3.18, SD = 2.29). On peer relationship problems there was a decrease of 1.92 from T1 (M = 4.85, SD = 2.30) to T2 (M = 2.93, SD = 2.38). Data collected at T3 demonstrated high consistency with T2 scores (a slight decrease of 0.20 and 0.24 for emotional symptoms and peer relationship problems respectively); akin to the pattern identified with TD scores, minimal change over the 12-month follow-up period was demonstrated. Mean scores for prosocial behaviour were similar to normative scores at T1 and T2 (with an increase of 1.54 at T2), as were the mean scores for non-targeted domains (conduct problems and hyperactivity/inattention) which showed minimal fluctuation over time. This pattern of ‘caseness’ was consistent at T3, with mean scores on all targeted subscales remaining in the ‘normal’ range.

Consistent with the trajectory previously discerned regarding TD scores, subscale scores for the comparison group showed similar stability across the three time points. Mean scores on all subscales were close to those of the general population at T1; T2 scores indicated minimal change and the same trend was observed at T3. In line with the TD mean score, all subscale mean scores for the comparison group fell within the 'normal' range at all three time points.

6.4.1.7. SDQ subscale scores: between and within group differences

To identify the longer-term impact of Pyramid on targeted domains, a series of mixed model ANOVAs were conducted. In Study One, analysis of the subscales pertinent to Pyramid had identified significant differences in scores for the Pyramid group from T1 to T2, demonstrating improvements in all three domains i.e. emotional symptoms, peer relationship problems, and prosocial behavior. To examine any changes over the three time points (T1, T2 and T3) corresponding subscale data from the Study Three sample were examined.

Prosocial behaviour: Levene's test was non-significant and equal variances were assumed ($F = 0.16, p = .69$; $F = 3.59, p = .06$; $F = 0.40, p = .53$). Results from a mixed model ANOVA identified a non-significant interaction effect between group type and time point, although this approached significance at the .05 level: $F(1, 97) = 3.65, p = .06, \eta^2 = .025$. Moreover, no significant main effect for time point or group type were observed. However, tests of simple effects revealed a significant increase in mean prosocial behaviour score for the Pyramid group from T1 to T2: $t(54) = 3.81, p < .001$, generating a medium effect size ($d = 0.54$); the difference between T1 and T3 mean scores just failed to reach significance: $t(54) = 1.95, p = .06$. Overall, these findings indicate prosocial behaviour improved for the Pyramid group and the minimal difference between T2 and T3 mean scores suggests gains were maintained.

Emotional symptoms: Levene's test was non-significant for T2 scores ($F = 1.87, p = .18$) but significant for T1 scores ($F = 9.85, p = .002$), and for T3 scores just reached significance ($F = 3.87, p = .05$). Results should, therefore, be considered with caution. Nevertheless, a highly significant interaction effect was identified between group type and time point: $F(1, 97) = 13.77, p < .001, \eta^2 = .085$. There were also highly significant main effects of group type: $F(1, 97) = 50.94, p < .001, \eta^2 = .344$ and time point: $F(1, 97) = 23.27, p < .001, \eta^2 = .125$. The distinct pattern of changed demonstrated by the two groups is presented in *Figure 6.2*.

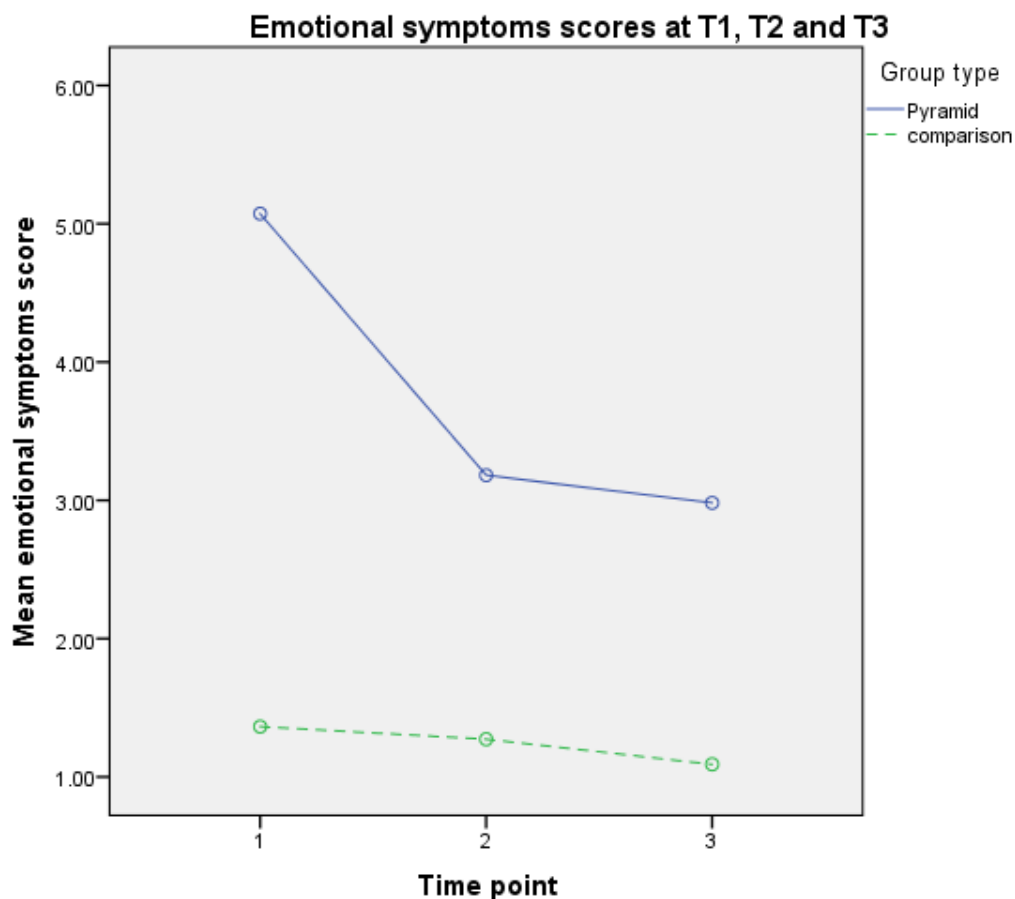


Figure 6.2: Emotional symptoms subscale (SDQ) for the Pyramid and comparison groups

Tests of simple effects were conducted to see whether there was a significant reduction in emotional symptoms scores for the Pyramid group over time and to identify if this was manifest at T3. A repeated measures t-test showed a significant decrease in mean

emotional symptoms across time from T1 ($M = 5.07$, $SD = 2.57$) to T2 ($M = 3.18$, $SD = 2.29$): $t(54) = 6.04$, $p < .001$. This generated a medium effect size ($d = 0.7$). Moreover, a significant difference was found between the mean emotional symptoms scores calculated at T1 and T3 ($M = 2.98$, $SD = 2.31$): $t(54) = 6.27$, $p < .001$. This generated a large effect size ($d = 0.8$). A minimal difference was observed between the Pyramid group's T2 and T3 emotional symptoms scores (a decrease of 0.20), and the statistically significant reduction in emotional symptoms identified at T2 was sustained at 12-month follow-up assessment.

To monitor any between groups difference in emotional symptoms for Pyramid and comparison pupils from pre-intervention (T1) to 12-month follow-up (T3), two independent sample t-tests were run. Results demonstrated a significant between groups difference at T1: $t(92.51) = 8.72$, $p < .001$ (as Levene's test indicated unequal variances: $F = 9.85$, $p = .002$, degrees of freedom were adjusted accordingly). This generated a very large effect size ($d = 1.7$). Follow-up analysis at T3 found that a significant between groups difference remained: $t(97) = 4.34$, $p < .001$, generating a large effect size ($d = 0.8$). To account for multiple testing the criterion for significance was adjusted (ASL .01). These findings suggest that despite a significant within group reduction in mean score on emotional symptoms for the Pyramid group (bringing it into the 'normal' banding), this remained significantly higher than the mean score for comparison peers.

As described (section 3.3.5.), gender disparities in emotional symptoms have been reported as particularly prevalent in early adolescence (e.g. Fink et al., 2015; Gutman et al., 2015). However, analysis of the Pyramid group data from Study One demonstrated a non-significant main effect of gender and a non-significant interaction effect between gender and time point, with males and females exhibiting a similar reduction in emotional symptoms from T1 to T2. Data for the Study Three sample (Pyramid group only) was

examined to identify if a consistent pattern emerged at longer-term assessment. As Levene's test was non-significant for the emotional symptoms scores at all three time points equal variances were assumed ($F = 0.59, p = .45$; $F = .03, p = .87$; $F = 3.90, p = .06$). In line with Study One, a mixed model ANOVA found a non-significant main effect of gender: $F(1, 53) = 0.82, p = .37$ and a non-significant interaction effect of gender and time point: $F(1, 53) = 1.81, p = .18, \eta^2 = .013$. Emotional symptoms scores for males and females demonstrated a similar pattern of change over the longer-term. This trajectory is illustrated in *Figure 6.3*.

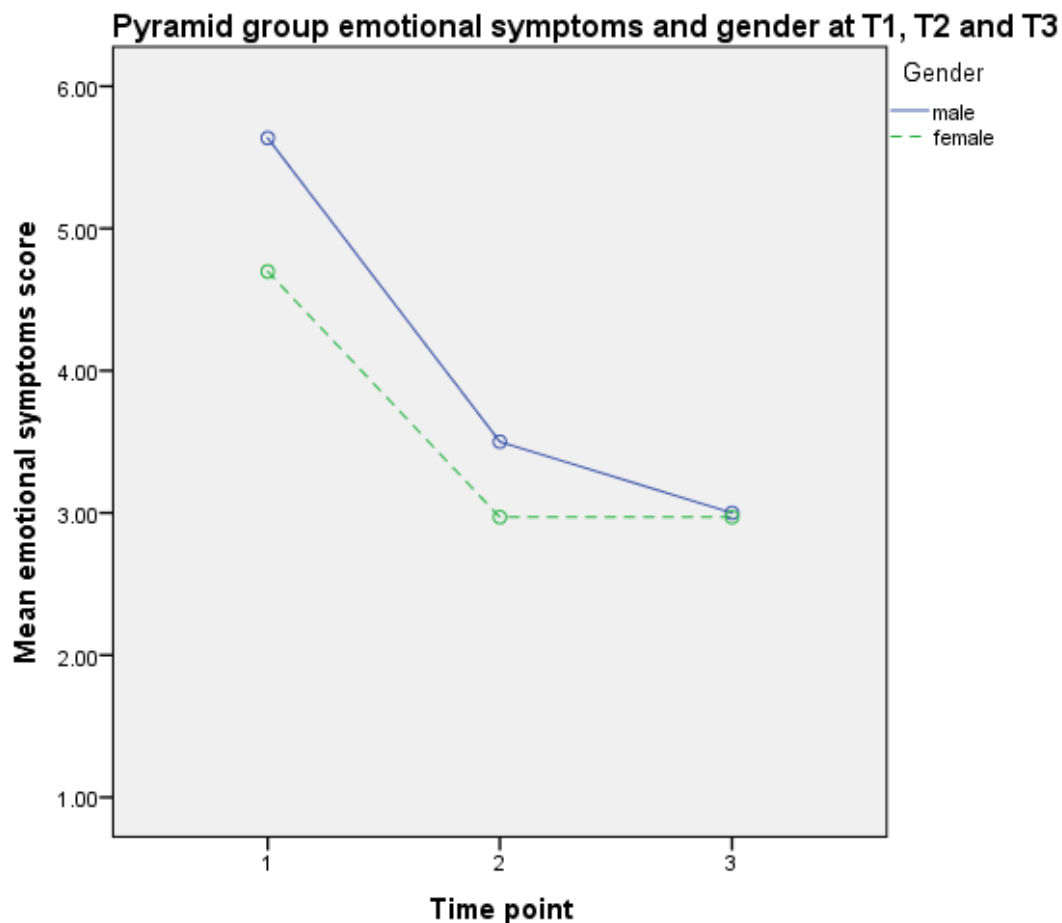


Figure 6.3: Emotional symptoms subscale (SDQ) for males and females (Pyramid group)

Peer relationship problems: As Levene's test was significant for data at all three time points, results should be interpreted with caution ($F = 13.83, p < .001$; $F = 6.20, p = .02$; $F = 5.42, p = .02$). Nevertheless, a highly significant interaction effect between group type and time point was observed: $F(1, 97) = 33.79, p < .001, \eta^2 = .139$. There were also highly significant main effects of group type: $F(1, 97) = 54.02, p < .001, \eta^2 = .358$ and time point: $F(1, 97) = 27.38, p < .001$. The distinct pattern of change demonstrated by the two groups is presented in *Figure 6.4*.

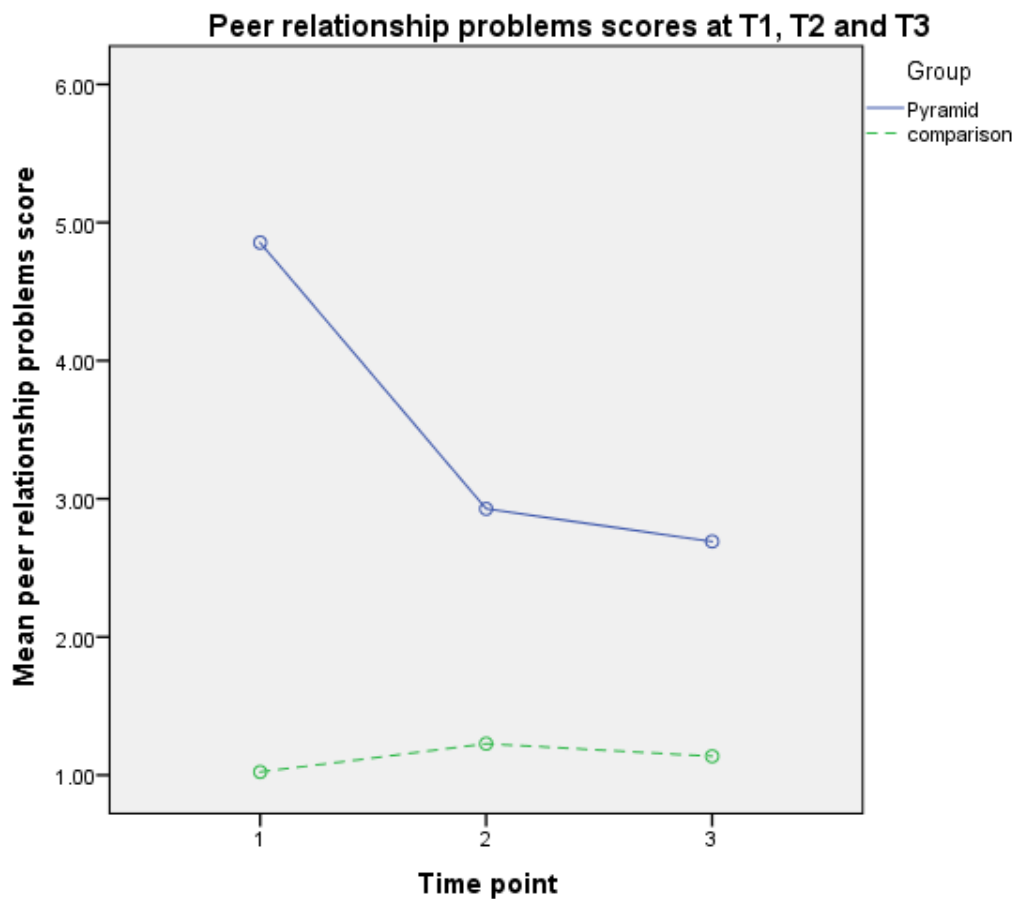


Figure 6.4: Peer relationship problems subscale (SDQ) for the Pyramid and comparison groups

Tests of simple effects were conducted to see if there was a significant reduction in peer relationship problems for the Pyramid group over time and to identify if this was manifest

at T3. A repeated measures t-test showed a significant decrease in mean peer relationship problems scores from T1 ($M = 4.85$, $SD = 2.39$) to T2 ($M = 2.93$, $SD = 2.39$): $t(54) = 5.91$, $p < .001$. This generated a large effect size ($d = 0.8$). Moreover, a significant difference was found between mean scores calculated at T1 and T3 ($M = 2.69$, $SD = 2.15$): $t(54) = 7.47$, $p < .001$. This also generated a large effect size ($d = 0.9$). Similar to emotional symptoms, a minimal difference was observed between T2 and T3 scores (a decrease of 0.24), with the statistically significant reduction in peer relationship problems identified at T2 sustained at 12-month follow-up assessment.

To monitor any between groups difference in peer relationship problems for Pyramid and comparison pupils from T1 to T3 two independent sample t-tests were run. Results indicated a significant between groups difference at T1: $t(81.84) = 10.40$, $p < .001$. This generated a very large effect size ($d = 2.1$). Follow-up analysis at T3 found that a significant between groups difference remained: $t(95.64) = 4.21$, $p < .001$, generating a large effect size ($d = 0.8$). (As Levene's test indicated unequal variances at T1: $F = 13.83$, $p < .001$ and at T2: $F = 5.42$, $p = .02$, degrees of freedom were adjusted accordingly). To account for multiple testing the criterion for significance was adjusted (ASL .01). Findings were consistent with the trend identified for emotional symptoms: despite a significant within group reduction in the mean score for peer relationship problems for the Pyramid group (bringing it into the 'normal' banding), this remained significantly higher than the mean score for comparison peers.

As previously reported, conduct problems and hyperactivity/inattention difficulties are not areas specifically targeted by Pyramid but were examined in Study One to identify any unexpected effects and analyses were similarly conducted in Study Three.

Conduct problems: Levene's test was non-significant and equal variances were assumed ($F = 0.1, p = .91$; $F = 2.32, p = .13$; $F = 2.48, p = .12$). A mixed model ANOVA demonstrated a non-significant interaction effect between group type and time point which suggested a similar shift in scores over time for both groups: $F(1.924, 186.621) = 2.63, p = .08, \eta^2 = .026$ (as Mauchly's test was significant the appropriate adjustment has been reported). No significant main effect, either of time point or group type was observed, indicating both groups experienced little change over time with conduct problems.

Hyperactivity/inattention: Levene's test was non-significant and equal variances were assumed ($F = 0.08, p = .78$; $F = 2.25, p = .14$; $F = 1.54, p = .22$). A mixed model ANOVA demonstrated a non-significant interaction effect between time point and group type: $F(1, 97) = 2.23, p = .14, \eta^2 = .013$, indicating a similar shift in scores over time for both groups. No significant main effect was observed for time point or group type, suggesting little change with hyperactivity/inattention difficulties over time for either group.

6.4.2. Inter-rater agreement on the SDQ: post-test and 12-month follow-up

In Study One, informant-rated SDQs for the sample were completed by the same member of school staff who knew the pupil well (e.g. form tutor or pastoral staff) at T1 and T2. At 12-month follow-up (T3), pupils had moved up a year group and individual staff most equipped to complete SDQ assessments for the Study Three sample were different. To determine the degree of agreement between raters in Study One and Study Three, reliability analysis using Pearson's correlation coefficient (r) was conducted with T2 and T3 data for the Pyramid group. Results demonstrated a positive correlation between raters on TD scores: $r(55) = .53, p < .001$ which generated a large effect size. The coefficient of determination was calculated and identified 27.8% of shared variance amongst Study One and Study Three raters.

To further scrutinise inter-rater agreement for Study One and Study Three scores, correlational analyses were run on the four subscales comprising the TD scale and all were significant. Results indicated a medium, positive correlation for conduct problems: $r(55) = .40$, $p < .002$, a large, positive correlation for hyperactivity/inattention: $r(55) = .57$, $p < .001$, a large, positive correlation for emotional symptoms: $r(55) = .61$, $p < .001$ and a medium, positive correlation for peer relationship problems: $r(55) = .41$, $p < .002$. Additional analysis on the prosocial behaviour subscale revealed a significant, medium, positive correlation: $r(55) = .37$, $p < .01$. Overall, these findings show strong levels of agreement between informant-raters from Study One and Study Three.

6.4.3. Analysis of the school performance data

To investigate the impact of Pyramid on pupils' school performance, Study One examined shifts in pupils' National Curriculum (NC) sub-levels in English and Mathematics from T1 to T2 (short-term change). Results failed to demonstrate statistically significant between group differences. Nonetheless, as previously described an impact on academic performance (identified in sub-level movement) was anticipated at longer-term follow-up. Data from the Study Three sample were analysed to examine shifts in pupils' academic levels in English and Mathematics at 12-month follow-up.

6.4.3.1. Shifts in NC academic levels in English and Mathematics

The Pyramid and comparison group were matched on the same (or similar) NC levels in English and Mathematics at T1 and no significant between groups difference in mean sub-level movement for either subject was identified at T2 (section 4.4.6.). This suggested that pupils in both groups continued to work at similar levels at post-test, short-term assessment. Shifts in academic performance (denoted by sub-level movement) from T2 to T3 were calculated and are reported in *Table 6.5*.

Table 6.5: Shifts in NC sub-levels: T2 to T3 for English and Mathematics

NC level shift	English		Mathematics	
	Pyramid group (N=27) N (%)	Comparison group (N=27) N (%)	Pyramid group (N=27) N (%)	Comparison group (N=27) N (%)
Same level	5 (18.52%)	8 (29.63%)	3 (11.11%)	8 (29.63%)
Increase by 1 sub-level	7 (25.93%)	9 (33.33%)	11 (40.74%)	8 (29.63%)
Increase by 2 sub-levels	8 (29.63%)	6 (22.22%)	6 (22.22%)	8 (29.63%)
Increase by 3 sub-levels	6 (22.22%)	4 (14.81%)	5 (18.52%)	2 (7.41%)
Increase by 4 sub-levels	1 (3.7%)	0 (0%)	2 (7.41%)	1 (3.7%)

The majority of pupils (22: 81.5%) in the Pyramid group had progressed in English from T2 to T3 as indicated by a shift in their teacher reported NC levels by one sub-level or more. However, five pupils (18%) had remained at the same level. In the comparison group eight pupils (29%) had stayed at the same level in English from T2 to T3. One quarter of the Pyramid group compared to one third of the comparison group had increased by one sub-level in English, however, more pupils in the Pyramid group than the comparison group had improved by two (eight and six pupils respectively), three (six and four pupils respectively), or four (one and zero pupils respectively) sub-levels.

The majority of pupils (25: 88%) in the Pyramid group had progressed in Mathematics from T2 to T3 as indicated by a shift in their teacher reported NC levels by one sub-level or more. However, three pupils in the Pyramid group (11%) had remained at the same level. In the comparison group eight pupils (29%) had stayed at the same level in Mathematics from T2 to T3. The highest proportion of Pyramid pupils (40%) demonstrated an upward shift of one sub-level compared to 29% of comparison group pupils. More pupils in the comparison group (eight) compared to the Pyramid group (six)

showed an increase by two sub-levels. Pupils demonstrating the most progress in Mathematics from T2 to T3 (by three or four increases in sub-level) comprised seven pupils (18%) in the Pyramid group and three pupils (10%) in the comparison group. Mean shifts in sub-level grades at T3 for English and Mathematics are presented in *Table 6.6*.

Table 6.6: NC English and Mathematics sub-level movement from T2 to T3

Sub-level shift: (min-max: 0 to 4)	English		Mathematics	
	Pyramid group Mean (SD)	Comparison group Mean (SD)	Pyramid group Mean (SD)	Comparison group Mean (SD)
	1.67 (1.14)	1.22 (1.05)	1.70 (1.13)	1.28 (1.09)

To determine whether the observed trends were statistically significant, two independent t-tests were conducted. An examination of mean sub-level movement in English for the Pyramid and comparison groups showed there was a non-significant difference between groups: $t(52) = 1.49$, $p = .14$. An examination of mean sub-level movement in Mathematics also showed a non-significant difference between groups: $t(52) = 1.46$, $p = .15$. Consistent with the findings from Study One, results demonstrated that the between groups shift in academic levels in English and Mathematics were not significantly different. This suggested that at T3 the two groups were continuing to demonstrate similar working levels in both subjects (as they had at T1 and T2).

Inspection of the within group difference in sub-level movement between T2 and T3, however, revealed a different pattern of change for Pyramid and comparison pupils. In English, both groups demonstrated a significant difference in sub-level movement, as expected, given the longer duration between T2 and T3 assessments i.e. one academic year compared to one term between T1 and T2 assessment. The result from a repeated measures t-test for the Pyramid group was: $t(26) = 4.78$, $p < .001$ (generating a very large

effect size: $d = 1.25$), and for the comparison group: $t(26) = 2.79$, $p = .01$ (generating a large effect size: $d = .07$). Moreover, in Mathematics a significant within group difference was identified for the Pyramid group: $t(26) = 2.43$, $p = .02$ (with a medium effect size: $d = .06$), but not for the comparison group: $t(26) = 0.47$, $p = .63$. This suggests that whilst overall both groups were continuing to demonstrate similar progress, the sub-level movement within the Pyramid group showed a significant difference for both English and Mathematics compared to only English for the comparison group (with the magnitude of effect greater for the Pyramid group).

6.4.3.2. Comparison of teacher-reported GCSE levels at T3

As described (section 6.1.1.), national changes to school reporting procedures impacted on the data provided by two schools at T3. As numerical GCSE grades do not correspond to the subscales of the previously reported NC levels, current GCSE levels from Schools 7 and 8 are presented in *Table 6.7.* for descriptive purposes only.

Table 6.7: Current GCSE levels at T3: Pyramid and comparison groups

Current GCSE level	Pyramid group (N=14) English total N	Comparison group (N=14) English total N	Pyramid group (N=14) Mathematics total N	Comparison group (N=14) Mathematics total N
GCSE level 1	0	0	0	0
GCSE level 2	1	0	0	1
GCSE level 3	1	3	3	1
GCSE level 4	4	2	5	7
GCSE level 5	4	4	1	2
GCSE level 6	3	3	2	0
GCSE level 7	1	2	2	3
GCSE level 8	0	0	1	0
GCSE level 9	0	0	0	0

GCSE levels are graded from level 1-9; with 9 being the highest

Pupils from Schools 7 and 8 were in Year 10 and Year 9 respectively at T3 data collection. According to the revised monitoring criteria, the majority of pupils in both the Pyramid group (eight: 57%) and the comparison group (nine: 64%) were working at a GCSE level 5 or above in English (representing a 'good pass': Ofqual, 2017). For Mathematics, six pupils (43%) in the Pyramid group and five pupils (36%) in the comparison group were working at a GCSE level 5 or above. Visual inspection of the current GCSE grades suggested that pupils in the Pyramid and comparison groups were working at similar levels in both subjects.

6.5. Summary and discussion of the follow-up quantitative findings

6.5.1. Pyramid's impact on socio-emotional well-being

Study Three showed that the Pyramid group maintained improvements in their TD scores (identified at post-test: T2) when re-assessed on the SDQ-informant rated measure at 12-month follow-up. These findings correspond with those from primary school evaluations demonstrating sustained effects at 12-week follow-up (Cassidy et al., 2014; 2015; McKenna et al., 2014) and at one-year follow-up (Goodwin, 2009; Ohi, 2009). Furthermore, analysis of the subscale data revealed that stable improvements were consistent across two of the three domains pertinent to the Pyramid intervention (i.e. emotional symptoms and peer relationship problems), suggesting continued impact on targeted difficulties. Trajectories for the Pyramid group and the comparison group had shown little change from T2 to T3. Whereas this pattern was typical for the comparison group across all three time points, the Pyramid group had shown significant change from T1 to T2 on total difficulties, emotional symptoms, peer relationship problems, and prosocial behaviour; indicating an intervention effect at T2. Overall, the minimal change across domains from T2 to T3 supports the sustained impact of Pyramid on pupils' socio-

emotional competencies, augmenting the extant evidence base (e.g. Cassidy et al., 2014; 2015; Cooper, 2001; FitzHerbert, 1985; Goodwin, 2009; McKenna et al., 2014; Ohi, 2009).

As previously reported, the Study One sample showed a significant between groups difference in mean TD score at pre-club and post-club assessment, with the Pyramid group continuing to demonstrate more difficulties. The same pattern was discernible with data from the Study Three sample: despite a significant within group reduction for the Pyramid group (with a large effect size), a significant between groups difference persisted at 12-month follow-up. This trend was consistent for emotional symptoms and peer relationship problems. Nonetheless, as argued extensively elsewhere, identifying a significant within group change over time (as in the current study) is of greater relevance for establishing the effectiveness of an intervention (Tabachnick & Fidell, 2013).

Furthermore, in line with Study One, gender, ethnicity and socio-economic status were examined as potential intervention moderators and findings were consistent: Pyramid had an equivalent impact (reduction in total difficulties) for Pyramid attendees regardless of gender, ethnicity or SES. This supports previous findings with primary-aged children (Ohi, 2009) and, moreover, extends the evidence base by demonstrating Pyramid's sustained effectiveness across discrete demographic groups with an older age cohort. Consistent with Study One, scrutiny of the emotional symptoms data showed no gender disparities and similarly demonstrated equivalent, sustained impact of Pyramid (reduction in symptoms) on males and females over time.

Overall, with respect to socio-emotional outcomes, results from Study Three identified a significant reduction in difficulties in targeted domains for the Pyramid group over time which accounted for 12.4% of the variance in total difficulties, 8.5 % of the variance in emotional symptoms and 13.9% of the variance in peer relationship problems. These findings (consistent with Study One) showed that the trajectories of the two groups were

highly distinct. For the Pyramid group this was characterised by significant socio-emotional improvements in targeted domains from pre-club to post-club which were maintained over the longer-term (for emotional symptoms and peer relationship problems), whereas for the comparison group, a stable trajectory persisted over the same time period with minimal fluctuation across domains.

6.5.2. Pyramid's impact on school performance

Study Three findings on the school performance data revealed that Pyramid and comparison group sub-level shifts (NC levels) were not significantly different at 12-month follow-up, indicating that pupils were working at similar levels in both subjects (consistent with Study One, short-term follow-up findings). However, further scrutiny of the within group change over time showed a distinct pattern for the Pyramid group: there was a significant difference in mean sub-level movement for English and Mathematics suggesting, as expected, more progress was made over this time period (i.e. from post-club to longer-term follow-up) than from pre- to post-club. However, for the comparison group, whilst a significant difference was identified in English (albeit of less magnitude than the Pyramid group) there was no significant difference for Mathematics, suggesting a 'dip' in expected progress between post-club and longer-term follow-up not seen in the Pyramid group.

These findings are consistent with those of Study One and suggest that Pyramid has a 'buffer effect' against the typical decline in academic attitude and progress, particularly in traditional subjects (English and Mathematics), associated with this developmental stage (NFER, 2006; Ofsted, 2015a). Study Three findings are also in line with qualitative conclusions (Study Two) which indicate that Pyramid has an impact on educationally relevant behaviours (e.g. participation and engagement in the classroom) which support academic well-being. A competence enhancement model (Huppert, 2009; Keyes et al.,

2010) suggests that improvements in socio-emotional competencies will cascade to other domains and it was anticipated in the current study that an impact would be discernible on objective measures of school performance at longer-term follow-up. Although this was not demonstrated, it can be argued that a more extensive time period is required to see any longer-term effects translate to academic levels or exam grades. Previous studies have demonstrated outcomes on academic measures at four-year (Scott-Loinaz, 2014) and five-year follow-up (FitzHerbert, 1985).

6.5.3. Limitations of Study Three

Findings from Study Three contribute to the Pyramid evidence base and to the extant literature on longer-term evaluations described as currently lacking (Durlak et al., 2015). Nonetheless, there are several limitations: these pertain to the quasi-experimental design, sample characteristics, participant attrition, and outcome measures.

As previously described (section 4.5.3.), the current research was incompatible with an RCT design (Pyramid is a selective intervention), whilst ethical considerations and the inclusion of a longer term follow-up study prohibited the use of a wait-list comparison group.

Limitations with respect to characteristics of the original sample (Study One) have been discussed (section 4.5.3.). Nonetheless, the number of eligible schools and participants for the current research meant the original sample was moderate in size and attrition was predicted to be a concern at follow-up. Hosted interventions, offered in an existing community (e.g. schools), are affected by multiple causes of attrition. Across a range of intervention studies, attrition rates have been reported to range from 5-70% and, if in excess of 20%, are thought to be of significant concern (Marcellus, 2004; Valentine &

McHugh, 2007). The participant attrition rate from Study One to Study Three was 15% (N= 18). The T3 sample comprised N=99 pupils (55 Pyramid; 44 comparison). Despite this reduction, the minimum sample size (N=86) required to detect a medium effect size ($d = .5$) for a mixed model ANOVA with alpha at .05 and 80% power was exceeded (N=99) and the minimum sample size (N=27) required for a within subjects t-test (same ES, alpha and power) was met (calculated from G*Power 3 a priori power analysis: Faul et al., 2007). Furthermore, most of the participant attrition in Study Three was accounted for by one school (School 3) and, therefore, is less likely to bias the outcomes at the participant level in any consistent way. Nevertheless, as previously suggested the final sample could be biased towards 'research friendly' schools, thus increasing the likelihood of yielding positive outcomes.

Practical limitations were associated with data collection in complex secondary school settings (also described in Study One: section 4.5.3) and included the multiple raters required to complete the informant-rated SDQ. The researcher was reliant on the School Pyramid Coordinator to collate the T3 data and whilst the administrative burden for schools had been reduced (fewer outcome measures) response rates varied: School 3 did not provide follow-up data and was removed from the analysis and data for School 7 (where the school Pyramid Coordinator had left) were incomplete. Nonetheless, correlational analysis showed strong levels of inter-rater agreement across all SDQ subscales, which suggests high consistency amongst staff members for pupil assessments and strengthens the findings.

National changes to the academic monitoring framework for schools (introduced during the current research) and the subsequent removal of universal National Curriculum levels, affected 12-month follow-up data and disrupted the planned analysis. NC level (in English and Mathematics) was the single measure of pupils' school performance selected for T3

analysis described in the original study design. However, these data were provided from only five of the seven participating schools, enabling progress from post-club to longer-term follow-up to be charted for 58% (N=46) of the Study One sample. Descriptive academic data at T3 (current GCSE level) were provided for a further 30% of the original sample. However, as GCSE grades do not correspond to specific NC sub-levels, comparison with post-club data was not possible for this subset of data. GCSE data provided for only one time point limited the analysis undertaken and the conclusions that could be drawn. Nevertheless, these data suggest that pupils in the Pyramid and comparison groups were working at similar levels in both subjects at T3 and is, therefore, consistent with the T3 NC level data. Further scrutiny of school performance findings from the NC data suggested distinct trajectories for the Pyramid and comparison groups over time, with the Pyramid group exhibiting greater change. This warrants further investigation by examining school performance outcomes at a longer follow-up period, for example, pupils' GCSE results in Year 11.

6.6. Conclusions and implications for the thesis

In conclusion, Study Three findings support sustained improvements in socio-emotional competencies for an older cohort of Pyramid club attendees (aged 11- to 14-years) and, moreover, suggest an impact on school performance. Providing evidence of longer-term gains is a crucial component of robust evaluation research (DH, 2015: Durlak et al., 2015) and, as previously argued, is required by intervention decision-makers to make fully informed implementation choices. In Chapter Seven, findings from the quantitative and qualitative analyses (Studies One, Two and Three) are integrated and their implications for theory, practice, and policy discussed.

Chapter Seven

Integration of the research findings: discussion and implications

This chapter synthesises and discusses findings from the three studies in relation to the impact of Pyramid on pupils in early secondary education (aged 11- to 14-years). Research questions addressed effectiveness on socio-emotional outcomes, the impact on pupils' school performance, and the active components of behaviour change. Findings are considered with respect to the Pyramid club theory of change and relevant theories and practical implications for the Pyramid model are presented. Limitations and strengths of the research are considered. Overall findings are discussed in the context of school-based mental health promotion: an integrated five-part Pyramid model and future research directions are proposed.

7. Review of the aims and objectives of the current research

The current evaluation of Pyramid aimed to address gaps in the literature. Whilst earlier studies have provided robust evidence for Pyramid's effectiveness in improving the socio-emotional well-being of primary school children (7- to 8-years: Cassidy et al., 2015; McKenna et al., 2014; Ohl et al., 2012; 2008, and transition age: Cassidy et al., 2014; Lyons & Woods, 2012), studies on older children in early secondary education are lacking. Moreover, evaluations have predominantly focused on establishing programme effectiveness and although this is a priority, robust evaluation requires an understanding of the active components of behaviour change (Moore et al., 2015). The research also sought to address the dearth of socio-emotional intervention studies that examine impact on pupils' school performance. These aims are linked to the demand for evidence-based models of good practice, enabling schools to promote socio-emotional well-being and tackle the increasing levels of psychological distress identified in CYP in the UK (DH, 2015; Thorley, 2016).

A critical realist paradigm (Bhaskar, 2008) provided the philosophical framework, supporting a mixed methods design to enable a better understanding of 'reality' (Archer et

al., 2007) and methods were selected on the basis of their suitability to address research questions. The objectives of the quantitative phase were to examine the short-term (Study One) and longer-term (Study Three) impact of Pyramid on socio-emotional and school performance outcomes (**RQ1** and **RQ2**). The objectives of the qualitative phase were to scrutinise quantitative findings on Pyramid's effectiveness and to investigate the active components of behaviour change (**RQ3**).

7.1. Integration of the quantitative and qualitative findings

Independent analyses presented in Chapters 4, 5 and 6 showed that young people who attended Pyramid demonstrated improvements in socio-emotional well-being, with an equivalent effect across gender, ethnic and SES groups, and that this improvement was sustained at 12-month follow-up. Furthermore, an impact on educationally relevant attitudes and behaviours ('academic enablers') was identified. This section considers these key findings along with the components of Pyramid underlying behaviour change (**RQ3**).

7.1.1. Evidence of improvements in pupils' socio-emotional well-being

The research shows that pupils who attended a Pyramid club demonstrated improved socio-emotional well-being, discernible immediately post-club and maintained longer-term (one-year on). Consistency of findings from three quantitative measures suggests the positive impact of Pyramid on targeted socio-emotional domains, supporting intervention effectiveness with an early adolescent population. The pattern of change over time showed a distinct trajectory of improvement for Pyramid attendees compared to non-intervention peers. The significant change from pre- to post-club for Pyramid attendees reflects the crucial distinction between groups (Tabachnick & Fidell, 2013) and thus, intervention effects. Large effects were observed on targeted domains (emotional symptoms and peer relationship problems) at post-test and 12-month follow-up.

Moreover, Pyramid's equivalent impact across discrete pupil level characteristics (gender, ethnicity and SES) suggests the intervention can be successfully delivered across socio-demographic groups. Club members' responses to WBQ questions showed that the majority felt they had benefitted from attending; gains in specific competencies (e.g. confidence and social skills) were widely reported. Furthermore, self-described socio-emotional competencies and club leader comments (focus group data) provided corroborating, qualitative evidence of Pyramid's effectiveness.

The research findings are consistent with those from primary school evaluations with 7- to 8-year-olds (McKenna et al., 2014; Ohi et al., 2012; 2008) and 10- to 11-year-olds (Cassidy et al., 2014). SDQ (informant-rated) findings from Study One replicated those of primary school evaluations (Cassidy et al., 2014; 2015; McKenna et al., 2014; Ohi, 2008; 2012) and expand the Pyramid literature to include evidence of short-term effectiveness with older pupils in early secondary education.

Cross-informant results from the SDQ (informant-rated and self-report versions) showed a consistent trend: adult and pupil raters identified improvements in socio-emotional well-being (also found in Cassidy et al., 2014). However, scrutiny of the self-report subscale data revealed Pyramid attendees rated themselves higher on conduct problems and lower on emotional symptoms, and peer relationship problems than adult informants rated them. Apart from TD scores pre-club and prosocial behaviour post-test, inter-rater reliability analysis failed to demonstrate significant levels of self-report and informant-rated agreement on the SDQ. These findings align with researchers (e.g. Achenback, 2005; Muris et al., 2003; 2004) who conclude that multi-informants agree moderately at best. Nonetheless, despite the lack of statistically significant cross-informant agreement, the overall pattern of change over time was consistent. Some authors (e.g. Ederer, 2004) claim that internalising issues are more accurately identified by self-report than proxy.

Although SDQ self-reports identified fewer emotional symptoms and peer relationship problems (their scores were in the 'normal' range) compared to informant raters, Pyramid attendees did reveal experiencing internalising difficulties pre-club (as evidenced by the WBQ and focus group data). This suggests specific measures or methods may be more or less sensitive in identifying self-reported needs.

Qualitative findings validating the short-term effectiveness of Pyramid on targeted socio-emotional outcomes were consistent with studies with Year 3 children (Ohl, et al., 2013), and transition club service users, their parents and teachers (Lyons & Woods, 2012), identifying similar improvements. In Study Two, the global theme 'Pyramid schema' represents the composite elements of the intervention: evidence of Pyramid's effectiveness emerged from analysis of these inter-related components. Attendees' Pyramid experience was characterised by socio-emotional skills development and positive relationship building, augmenting support for improvements over time in targeted domains.

A second global theme, 'Pyramid graduate' encapsulates the 'unique' reality or meaning for the service user (Denzin & Lincoln, 2011). Reflecting on their experience, perceived benefits of attending Pyramid club and a sense of personal change emerged. Attendees reported substantial socio-emotional gains in targeted areas: social skills, peer relationships, confidence, coping skills, and emotional regulation. Self-described improvements were corroborated by club leader observations of pupils' behaviour change over time. Some attendees experienced dramatic changes, others less so, and whilst disconfirming evidence revealed a small minority felt 'the same' after Pyramid club, no iatrogenic effects were reported, a finding which is consistent with previous evidence (Ohl et al., 2013).

The suggestion that Pyramid 'opened doors' was encapsulated in the thematic category 'Pyramid legacy', predicting that behaviour change identified post-club (e.g. greater confidence and increased engagement in school and extra curricula activities) would persist. Findings from Study Three supported sustained effects and were consistent with studies with younger children (Goodwin, 2009; Ohi, 2009) demonstrating post-club improvements in Pyramid pupils' socio-emotional well-being (in targeted domains) still evident one-year on. Current findings that show Pyramid's effectiveness in a 'real world' setting over time, address the lack of evidence demonstrating the longer-term implications of specific interventions (Durlak et al., 2015).

7.1.2. Evidence of impact on pupils' school performance

Research findings provide preliminary understanding of Pyramid's impact on secondary school pupils' school performance.

In Study One, the comparison group showed a significant decrease or 'dip' in ability self-concept in English from pre- to post-club. In contrast, the Pyramid group showed no significant change. Moreover, a significant cross-over interaction was demonstrated for pupils' English and Mathematics ability self-concepts (characterised by an increase for the Pyramid group and a decrease for the comparison group). A wide body of international research has documented the 'dip phenomenon' in education (e.g. Evangelou et al., 2008; Hayes & Clay, 2007), a timespan during middle years of schooling (11- to 14-year-olds) where 'least progress is made' (NFER, 2006, p2) and which is characterised by a marked decline in pupils' attitudes to school and learning. Pupils can lose their self-esteem and disengage from education. In England, studies suggest that the most pronounced 'dip' is experienced in Year 8 and the traditional academic subjects (English and Mathematics) are most affected (NFER, 2006; Ofsted, 2015a). Current research participants were within middle years education and, therefore, typically susceptible. Distinct trends in

pupils' ability self-concept in English and Mathematics from pre- to post-club indicate that Pyramid may have had a 'buffer effect', with Pyramid attendees showing some resilience to the 'dip phenomenon'. To tackle the persistent decline associated with this developmental period, strategies are required to encourage resilient, independent learners (GL Assessment, 2016); it can be suggested that Pyramid offers one such approach and this premise merits further investigation.

Qualitative findings indicate Pyramid's impact on educationally relevant behaviours. Attendees associated the skills and competencies they had learnt at Pyramid club with changes in their behaviour in the classroom, for example, greater confidence and social skills were linked with increased participation and engagement. Pupils reported increased motivation and capacity to learn. Self-described improvements were supported by club leader comments and from feedback leaders received from school staff. These findings are consistent with those reported from primary school studies (e.g. increased confidence in the classroom: Headlam Wells, 2000; improved learning skills and motivation: Cooper, 2001) and contribute to the limited evidence supporting the impact of Pyramid on pupils' school performance.

Current findings suggest the emergence of 'academic enablers' (DiPerna & Elliot, 2000) that have potential to impact on academic performance. Researchers (e.g. Wentzel, 2009) maintain that pupils who interact socially and have good relationships with peers are more academically engaged and achieve higher levels of achievement: positive peer interaction promotes prosocial behaviour (e.g. co-operation, following rules, negotiation and compromise), as demonstrated in the current research. These behaviours and attitudes facilitate efficient classrooms and promote effective learning. They are linked to the concept of school connectedness (pupils feel more included, accepted and supported) which has a bidirectional relationship with mental well-being and school performance

(Catalano et al., 2004; Vaz et al., 2015). Longitudinal research has shown that prosocial behaviour in primary school is a better predictor of academic achievement in secondary school than pupils' test scores or grade point average (e.g. Caprara et al., 2000).

Despite the emergence of 'academic enablers' in this research, there was limited evidence of improvement in school performance for the Pyramid group as measured by academic levels in English and Mathematics. Pyramid and comparison group pupils (matched at baseline on the same or similar levels in English and Mathematics) were working at comparable levels immediately post-club and at 12-month follow-up. Nonetheless, it could still be argued that insufficient time had elapsed for effects to show on standardised measures. Evidence suggests that Pyramid is a 'slow release fertilizer' (FitzHerbert, 1993), triggering progress that may take time to manifest on non-targeted domains. A longitudinal study (FitzHerbert, 1985) reported better educational outcomes (attendance and teacher reported academic progress) for Pyramid pupils compared to a non-intervention comparison group at five-year follow-up. Similarly, Scott Loinaz (2014) showed that pupils who had achieved greater socio-emotional gains after a *Nurture Group (NG)* programme in Year 7 and 8 achieved better overall GCSE results at the end of Year 11 compared to pupils who had made the least improvement. These findings are consistent with longitudinal findings (e.g. Caprara et al., 2000) which show a link between earlier socio-emotional competencies and longer-term academic success. Conversely, studies on the *UK Resilience Programme (UKRP)* (Challen, 2010; 2011) demonstrated improved academic performance at one-year follow-up but not at two-, suggesting an attenuation effect over time. Further research is required to examine the premise that Pyramid can trigger longer-term impact on school performance, including academic progress, at designated follow-up periods (yearly) over an extended period (up to GCSE examinations year).

Although the Pyramid and comparison groups showed no differences in academic levels in English and Mathematics across the study, a distinct pattern of within group change was evident. In particular, the trajectory for the comparison group showed no significant difference in sub-level movement in Mathematics between pre-test and post-test assessment (one term), and post-test and 12-month assessment (one academic year), indicative of the typical 'dip phenomenon'. However, this was not the pattern demonstrated by the Pyramid group (i.e. a significant difference was identified, showing greater movement between the post-test and 12-month period). This tentatively supports the premise that attending Pyramid club had a 'buffer effect' and highlights the value of using a range of measures to investigate intervention effects on pupils' school performance.

7.2. Components of Pyramid underlying behaviour change

Evidence gathered using a focus group method is discussed in this section with regard to **RQ3**: What are the elements involved in the Pyramid intervention that bring about change in attendees? This extends the current findings beyond establishing intervention effectiveness and offers some understanding of the complex and dynamic phenomenon of behaviour change experienced by Pyramid attendees.

Thematic analysis identified the procedures that have an important contextual influence on intervention effectiveness and the specific techniques which prompt behaviour change. The Pyramid club theory of change (Hughes, 2014) and relevant theories which underpin the model (*Table 2.0.*) were mapped to research findings, thus providing a greater understanding of behaviour change by demonstrating explicit links between theory and outcomes (Prestwick et al., 2014).

7.2.1. Behaviour change procedures (BCPs): linking theory to outcomes

BCPs incorporate the physical and practical (contextual) elements that provide the optimum conditions for intervention effectiveness and are linked to intervention fidelity (section 7.3.2.). BCPs identified in Study Two include characteristics of the setting (e.g. allocated space within school); aspects of the delivery (e.g. the group composition), the dosage (e.g. minimal hours of contact time), and the duration (e.g. length/number of sessions); factors pertinent to the delivery agent (e.g. vetted and fully trained); factors pertinent to participants (e.g. suitability for the intervention established via robust screening), and dissemination of the therapeutic content.

BCPs are stated in the Pyramid club theory of change (*Figure 2.0*) and/or are described in the Pyramid preventative model (section 2.3.1.). Personalising the club room was encouraged, helping attendees feel 'safe' in the Pyramid space (satisfying lower level needs: Maslow, 1987) and fostering group connectedness (characteristic of the group 'forming' stage: Tuckman & Jensen, 1977). The level of consideration club leaders displayed (reported as high by attendees in Study Two) influenced group members' perceptions of comfort, warmth and safety (Butler & Wintram, 1991).

A high ratio of club leaders to young people permits each member to be: 'the frequent focus of the accepting and encouraging attention of an adult' (Ohl et al., 2008, p119), thus promoting the child-focused environment (shaped by early influences e.g. Kellmer-Pringle, 1980; Schiffer, 1977) that underpins the Pyramid model. Club leaders' practice reflected key tenets of the Pyramid ethos; praise and recognition, and love and security (Kellmer-Pringle, 1980). Club leaders were described by their individual characteristics and behaviours which aligned with these tenets (e.g. helpful, enthusiastic, encouraging and positive). This suggests that personal attributes supersede professional status as criteria

for effective club leaders, supporting the premise that interventions can be delivered by a range of trained agents (Walker & Snell, 2016).

An assumption of the Pyramid model is that selected pupils are identified through prescribed procedures (section 2.3.1.). Qualitative findings showed that a minority of attendees were 'non-typical', indicating that in some cases selection was not robustly conducted and places were allocated to pupils with externalising difficulties (e.g. hyperactivity/inattention). Given the complexity of secondary schools (with pupils having contact with multiple staff), efficient screening is more challenging, requiring strategies to ensure selection criteria are met and all available places are utilised (section 7.3.2.). A further assumption is that club members attend a minimum of seven of the ten sessions for the intervention to be effective. A minimum dosage criterion of 70% was set as an evidence-based standard (Botvin et al., 2006) for participants' data to be included in the research. Overall, integrated findings showed positive outcomes on targeted domains, indicating that 70% intervention dosage was sufficient to instigate behaviour change for most attendees. Nonetheless, it emerged from the thematic analysis (club leader data) that groups comprising more vulnerable pupils could potentially benefit from a longer programme. This raises several wider considerations including: if a different intervention is required for more vulnerable pupils; if specific socio-emotional programmes of different lengths would be more suitable for some groups, and how to establish selection criteria. For Pyramid, the question arises as to whether the existing programme can be adapted to suit the variable dosage needs (for optimum impact) of different groups e.g. by extending the number of continuous sessions or offering Pyramid 'top-up' opportunities.

Pyramid clubs reflected consistency in terms of a weekly routine (core activities) with regular club leaders (session plans and leader observations were recorded in the club file as a fidelity check: section 7.3.2.). Whilst structure is widely considered an integral

feature of a successful therapeutic group (e.g. Schiffer, 1984; Yalom & Leszcz, 2005), the flexible format of sessions permitted Pyramid's manualised programme to be delivered around group preferences rather than to a prescribed plan. Attendees increasingly took a lead in activities: flexibility in disseminating therapeutic content encouraged responsibility (essential for healthy development: Kellmer-Pringle, 1980) and enhanced group connectedness through active involvement and collaborative working (Catalano et al., 2004). Pyramid club (characterised by attendees contributing to decisions, taking ownership and sharing responsibility) mirrors the typical expectations of secondary school where pupils' increasing independence is expected. This relates to stage-environment fit theory (Eccles, 2004) which refers to the 'goodness of fit' between developmental needs and the contextual supports and opportunities that a given environment (e.g. Pyramid club or school) provides; impacting on motivation, behaviour and mental well-being. Key developmental needs of early-to-mid adolescents have been identified as including incremental opportunities for autonomy and to demonstrate competence, caring and support from adults, developmentally appropriate supervision, and acceptance by peers (Whitlock, 2006), factors which are characteristic of Pyramid club.

7.2.2. Behaviour change techniques (BCTs): linking theory to outcomes

For consistency and to facilitate synthesis, the *BCT Taxonomy v1* (Michie et al., 2013) was utilised (section 3.4.5). Four BCTs were identified: demonstration and practice, social reward, social support (emotional), and goal setting (behavioural).

Demonstration and practice

This refers to club leaders modelling and promoting appropriate behaviours. Findings suggest that leaders regularly demonstrated suitable behaviours for attendees to imitate and practise, facilitating social learning. Observation, imitation and modelling are key conduits: attendees observed actions and outcomes which they could then code and

apply as a guide to future action (Social Learning Theory (SLT), Bandura, 1977).

Moreover, observed behaviour is more likely to be adopted if the model has high status, prestige or power (Bandura, 1977). Club leaders were popular, well-liked and respected by attendees, thus leader attributes were more likely to enhance the social learning process which influences behaviour change.

At Pyramid club, expected behaviours were observed and new performance patterns practised by club members e.g. participating in snack time promoted prosocial behaviours including social skills, table manners and clean-up skills (Cerda, Nemiroff, & Richmond, 1991). Emotional responses can be developed through a similar process (Bandura, 2001) i.e. through observing the affective reactions of others. Witnessing how peers engage in activities (e.g. volunteering to speak first during circle time) without experiencing any adverse consequences can reduce pre-held inhibitions or anxieties. Attendees who were anxious about social encounters e.g. speaking in the group, were more inclined to join in after observing others perform without experiencing negative consequences.

Internal mental states are key in the learning process and club members who feel satisfied by their actions (e.g. sharing an experience during circle time) are more likely to repeat the behaviour if it instils a positive feeling of satisfaction (Bandura, 2001). The role of emotion and feelings is essential to experiential learning and aligns with Social Information Processing (SIP) theory (Crick & Dodge, 1994): CYP interpret social cues and make decisions about behaviour based on past experience, as well as current goals for the situation, anticipated outcomes and self-efficacy. The learner is 'agentic' in learning, which is enriched through active engagement in personally meaningful experiences (Bandura, 2001). Pyramid club provided regular learning experiences that attendees could extrapolate to wider social settings, for example, team games supported developing strategies and methods to manage typical school encounters e.g. class group work.

Social reward

Pupils selected for Pyramid have often experienced problems making friends and may feel socially rejected or isolated, as participants reported in Study Two. These specific socio-emotional difficulties correspond to Maslow's (1987) categories of need for self-esteem, and love and belongingness. Praise and recognition, a key tenet of Pyramid, is a fundamental contributor to self-esteem needs (Bandura, 1977; Kellmer-Pringle, 1980). The role of leader in the therapeutic group is to offer 'unconditional acceptance' of the CYP as they present themselves (Schiffer, 1976). Pyramid leaders offered proximal, specific and genuine praise and recognition, providing informative feedback and supporting the social learning process. 'Success' was broadly defined, for example, working well as a team or volunteering first for an activity, in contrast with wider school criteria whereby praise and recognition is typically channelled at academic achievement. At Pyramid club self-esteem needs could be met readily through behaviours other than academic performance.

Social support

A focus on inclusivity from the outset contributed to Pyramid attendees developing a sense of belongingness and group connectedness. Group members who feel safe in a non-threatening, therapeutic environment become more willing to talk about their feelings and experiences and they observe improvement in others (Gallo-Lopez & Schaefer, 2010). 'Universalisation' is fostered; individuals see they share similar thoughts and feelings with others and become more willing to engage in the therapeutic process (Yalom & Leszcz, 2005). Within the supportive Pyramid environment attendees were able to find their 'voice' and were encouraged to participate without fear of negative consequences.

Goal setting

Pyramid's manualised programme is linked to specific learning goals e.g. developing social skills. The distinct phases of a small group's development (Tuckman & Jensen, 1977) are recognised and map to corresponding resources (*Figure 2.2.*) e.g. during the 'performing' stage focus is on competency enhancement and developing responsibility: corresponding activities include decision-making games and role plays. Explicit learning goals were incorporated into weekly sessions which club leaders jointly planned.

Attendees associated particular activities with gaining specific skills, for example, building newspaper towers with communications skills. As previously described, the flexible delivery format allowed choice from a range of games and activities (encompassing the same learning goals) which matched the stage of the group's development and particular interests. Willingness to participate is enhanced if club members have a choice in what they do (McLaughlin & Gray, 2015). An assumption of the Pyramid club theory of change is both ability and willingness to engage in therapeutic activities; in some individual cases attendees were reluctant. Activities must be developmentally appropriate (e.g. not 'too young') and reflect the preferences of the group. This underlines the importance of flexibility (and stage-environment fit) in manualised programmes, and to avoid over reliance on didactic materials (Challen, 2011).

7.3. Implications of the research

These findings have several implications for theory, practice and policy which are discussed in the next sections.

7.3.1. Implications for theory

The research has two main implications for theory: the relevance of a competence enhancement model for the Pyramid intervention and the importance of connectedness in developing Pyramid's existing theoretical framework.

7.3.1.1. Pyramid: a competence enhancement model

The Pyramid model has been criticised for offering a 'mixed-bag' of theoretical perspectives (Lyons & Woods, 2012), negating a meaningful understanding of behaviour change. Nonetheless, as Bracket et al. (2015) posit, a single theory can apply to multiple aspects of an intervention whilst equally, multiple theories can be combined. Moreover, the best approaches bring together several theories into a unique 'synergy', facilitating the development, implementation, evaluation and sustainability of specific interventions (section 2.2.1.). For Pyramid, this is encapsulated in a competence enhancement model; the process of effecting change is summarised in *Figure 7.0*.

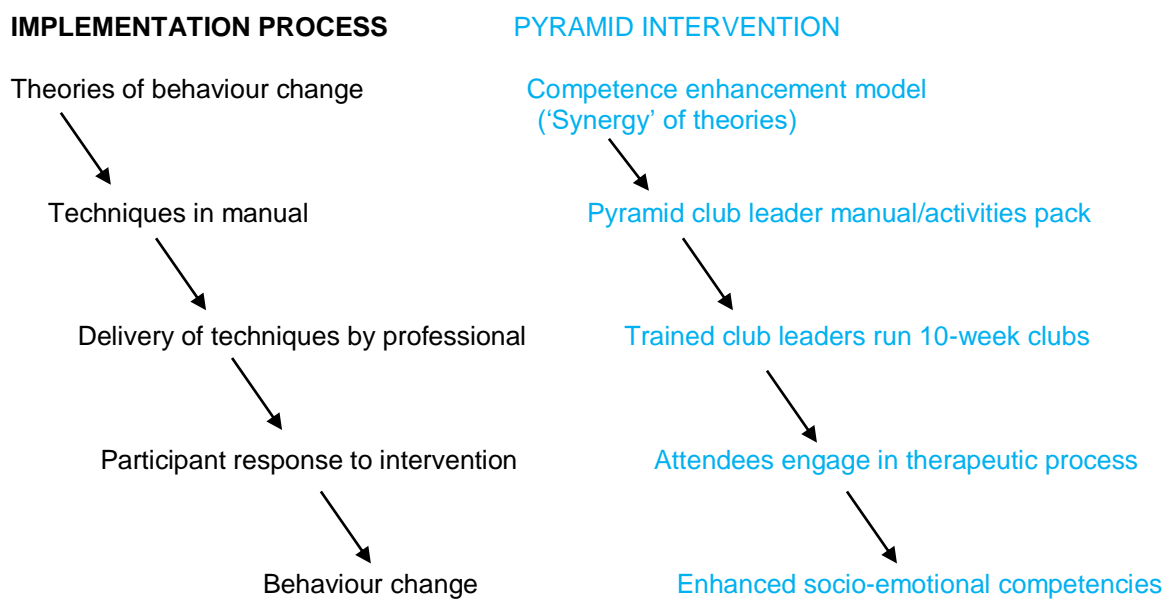


Figure 7.0: The behaviour change process: from theory to outcomes (Adapted from Michie et al., 2011)

The Pyramid club theory of change provided a framework for the current evaluation and findings describe how multiple theories embedded in the model created a unique 'synergy', allowing expected outcomes to be achieved (section 7.2.). Moreover, findings support the effectiveness of a competence enhancement model (Huppert, 2009; Keyes et al., 2010) for improving the socio-emotional well-being of an early adolescent population. Specific competencies pertinent to this developmental period are described as a positive sense of self, self-control, decision-making, and prosocial connectedness (Guerra & Bradshaw, 2008). Competence enhancement programmes facilitate positive adjustment and enable CYP to cope successfully with everyday developmental challenges. For example, as increasing focus is on the peer context during early adolescence, programmes which improve relationship skills may be useful for negotiating peer pressure and conflicts which are typical (Dodge, Coie, & Lynam, 2006). Current findings, indicating Pyramid attendees' improved socio-emotional well-being are consistent with other strengths-based intervention findings with this age group. For example, Proctor et al. (2011) reported higher life satisfaction amongst recipients of the *Strengths Gym Program* compared to controls, whilst Madden, Green and Grant (2011) found measures of engagement and hope had increased for attendees of a strengths-based coaching programme.

7.3.1.2. The agentic perspective: connectedness and stage-environment fit

A qualitative method was used to investigate stakeholder perceptions and experiences of Pyramid (i.e. participant response to the intervention) and to scrutinise which theories best accounted for change. A critical realist stance provided the philosophical framework for the research and within this perspective the importance of agency is recognised; individuals are seen as 'agents' not merely 'under-goers' of their experiences (Pawson & Tilley, 2004). There was a bidirectional, dynamic exchange between attendees and the Pyramid environment (incorporated in the Michie et al. (2011) COM-B model: *Figure 7.1.*);

behaviour occurs because of the interaction between three necessary conditions: capability, motivation and opportunity.

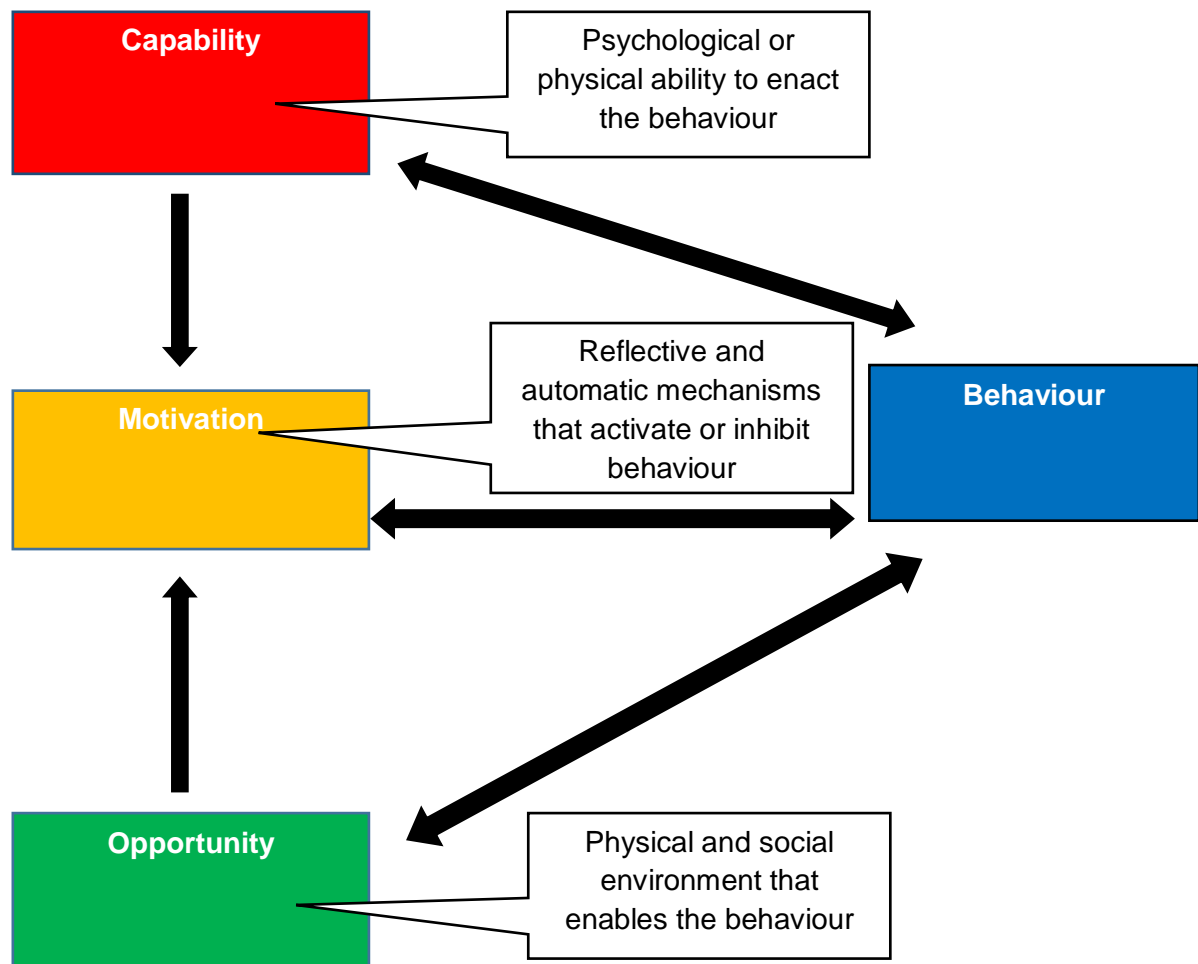


Figure 7.1: The COM-B model (Michie et al., 2011)

Club members' sense of belonging and group identity were demonstrated (section 5.4.2.2.), suggesting a link between connectedness to the group and participants' response to the Pyramid intervention (i.e. their engagement in the therapeutic process), presenting a potential motivator of behaviour change. This aligns with holistic-dynamic theory (Maslow, 1987) which identifies a sense of belonging as a fundamental and universal psychosocial need. Whilst criticism of holistic-dynamic theory has largely been directed at the lack of empirical evidence (Seligman & Csikszentmihalyi, 2000), a more

recent global study (Tay & Diener, 2011) involving 60,865 adults supports Maslow's basic premise of a set of universal human needs. The concept of 'connectedness' refers to a psychological state of belonging in which individuals feel accepted, respected and included (Goodenow, 1993) and, crucially, value feeling 'connected' (Whitlock, 2006). In Study Two this is encapsulated in the subtheme 'group identity'. Connectedness is considered particularly important for adolescents as they increasingly shift their reliance on the family to extra familial relationships as part of the individuation process (Goodenow, 1993), and look to peers and adults outside their family for support (Cowie & Oztug, 2008).

A social development model (Catalano et al., 2004) conceptualises connectedness as composed of two essential elements; attachment, and commitment to a socialising unit. This was demonstrated by Pyramid attendees with respect to Pyramid club. CYP learn patterns of behaviour from their environment through socialisation processes (e.g. perceived opportunities and actual involvement in activities and interactions with others, skills for involvement and interaction, and perceived rewards from involvement and interaction). When socialising processes are consistent, a social bond of attachment and commitment (connectedness) develops between the individual and the people and activities of the socialising unit (Catalano et al., 2004), for example, at Pyramid club.

A body of research (e.g. Shochet, Dadds, Ham, & Montague, 2006) suggests that connectedness can be affected by several criteria typical of Pyramid club: involving pupils in decisions, treating everyone equally, rewarding effort rather than achievement, and building strong relationships. Connectedness is nurtured by providing a safe environment, offering opportunities for meaningful input and creative engagement, and matching activities with pupils' interests (Whitlock, 2006) e.g. at Pyramid club (section 7.2.1). Other

indicators of connectedness include attendees' sense of pride in being a Pyramid club 'graduate'.

Some authors (e.g. Bernat & Resnick, 2009) maintain that the more connected adolescents feel in one area, the more likely they are to feel connected in another; connection to a social unit develops skills that are transferable to other settings. Whilst it is possible that individuals already have these skills, interventions such as Pyramid which establish connectedness in one aspect of an adolescent's life may have implications for others. In the current research context, connectedness to school is particularly pertinent: it is considered one of the most important criteria pupils must satisfy to function well in an educational environment, operating as a protective factor whilst simultaneously increasing pupil engagement in the learning process (Banerjee, McLaughlin, Cotney, Roberts, & Peereboom, 2016; Gray, Galton, McLaughlin, Clarke, & Symonds, 2011).

Strong school connectedness is associated with feeling less self-conscious and nervous about engaging in classroom and school-based activities (Roeser, Eccles, & Sameroff, 2000). It contributes to self-reported motivation (Goodenow, 1993) and thus can be seen as an 'academic enabler' (DiPerna & Elliot, 2002). Focus group findings revealed greater pupil participation and engagement in lessons and other activities (e.g. after-school clubs) post-Pyramid, tentatively supporting the transferability of skills to other settings and increased connectedness to the wider school. Objective measures of participation and engagement were not implemented in this research and, therefore, any interpretation must be considered with caution. Nonetheless, future studies could investigate this proposition further by utilising appropriate follow-up measures (e.g. attendance at after-school clubs).

Some researchers (e.g. Zimmer-Gembeck, Chipeur, Hanisch, Creed, & McGregor, 2006) insist that the 'dip phenomenon' (section 4.5.2.), typical in early secondary education, is attributable to the deteriorating harmony between the school environment and the developmental needs of the young person (stage-environment fit: Eccles, 2004). This is further associated with diminishing school connectedness (Whitlock, 2006). As previously indicated, interventions such as Pyramid demonstrate 'goodness of fit' between pupils' developmental needs and environmental elements and may potentially create a 'buffer effect', averting the onset of motivational and academic decline. Nonetheless, connectedness is a dynamic process and adolescents may need different relationships, opportunities, and experiences to maintain a sense of connectedness to individuals, groups (e.g. Pyramid club) and institutions (e.g. school) over time. In relation to Pyramid secondary school clubs, this highlights the importance of considering the stage-environment fit for specific groups across the age span targeted for support (11- to 14-years). This is considered further in the following section which relates to practice.

7.3.2. Implications for practice and policy

The research has three main implications for practice: intervention fidelity, promoting Pyramid, and improving the Pyramid club experience.

Intervention fidelity

Fidelity to Pyramid's manualised programme is monitored by the Pyramid Coordinator (a minimum of one visit per club was undertaken to observe practice). Club leaders retained a file of weekly plans and pupil observations (returned to the Pyramid Coordinator at the end of the programme), providing an audit of session delivery. Nonetheless, internal procedures may be subject to bias and robust evaluations require objective measures of intervention fidelity. For example, utilising a bespoke treatment integrity scale (e.g. Rodgers & Dunsmuir, 2015) serves the dual purpose of establishing the degree of fidelity,

and assessing the relative importance of specific intervention elements. This second aspect, is now considered.

Behaviour change procedures (BCPs) (section 7.2.1.) that offer optimum conditions for intervention effectiveness are fundamentally linked to intervention fidelity. Findings from Study Two suggest that BCPs that are aspects of the programme structure (delivery of therapeutic content to suit developmental/interest needs) and factors pertinent to the delivery agent (professional status) can be modified to accommodate the needs of specific groups and/or resources available to schools (e.g. club leader teams can comprise internal staff/6th form pupils). However, other procedural aspects were highlighted as lacking robustness e.g. selection/screening procedures to ensure suitable pupils are nominated for clubs. Intervention features which relate to the minimum dosage required to effect change (70%) and the appropriate duration of the programme, require further consideration as findings indicated a 'one size fits all' approach may not meet the needs of more vulnerable pupils.

Pyramid promotion

Lack of awareness/misconceptions about Pyramid in the wider school community was identified and associated with poor referrals from staff, non-suitable pupils attending clubs, some low level of parental encouragement/support for attendees, and potential stigma (e.g. negative comments from class peers). Findings highlight the importance of engaging support and commitment from the whole school community for interventions to be optimally successful (Challen et al., 2011; Durlak & DuPre, 2008); requiring reliable, valid, and effective efforts from all stakeholders (Banerjee et al., 2016).

In large, complex, secondary schools harnessing support can be challenging. Efficient 'mesosystems', the connections between various microsystems in the young person's life

(e.g. home, school, Pyramid club) (Bronfenbrenner, 1994), are integral to effective actions. Good links between the Pyramid Coordinator and key school staff can help ensure that the club space/resources meet the recommended criteria and robust screening procedures are strictly applied. Whilst good internal communication systems are necessary to gain support from staff and pupils (and help counter stigma), effective links (school and Pyramid Coordinator) with parents/carers may help to secure support beyond the immediate school environment.

Young people are typically less compliant than primary-aged children, presenting a unique challenge for recruiting older pupils for Pyramid. Several members reported that before attending a club they were unaware of what to expect or had negative preconceptions, impacting on their willingness to join and/or engage at first. It may be beneficial for clubs to be 'marketed' to young people, encouraging attendance and preference over competing activities (e.g. alternative clubs/pressure of homework). Peer-to-peer 'word-of-mouth' and Pyramid 'graduate' feedback were recommended techniques to encourage new members. 'Graduates' saw themselves as founder members of the Pyramid community in their schools and were perceived by club leaders as key ambassadors for raising awareness/promoting future clubs. Moreover, occupying an ambassadorial role may increase school connectedness for 'graduates' and further augment their well-being (Gray et al., 2011).

An introductory letter and information leaflet were sent via the school to parents/carers of pupils invited to attend Pyramid club. Dissemination of further details to invitees, parents, and the wider school community varied: two schools hosted Pyramid information sessions (attended by the Pyramid Coordinator and club leaders) for invited pupils, parents and school staff; invitees sampled 'taster' activities and stakeholders could ask questions. By comparison, no additional promotional activities were undertaken by some schools.

Despite the challenges of communicating with parents/carers of secondary-aged children, strategies are needed to ensure invitees and parents/carers access relevant information, thus enabling young people to make an informed, supported decision to join Pyramid club and helping to safeguard places for those most likely to benefit.

Improving the Pyramid club experience

Stakeholder suggestions for improving Pyramid are an important contribution to its development; the views and opinions of CYP are crucial in evaluations of services/policies that affect them (Green & Hogan, 2005; McLaughlin, 2015). Overall, young people were very positive about their Pyramid club experience. However, a wider choice of activities including outside games was requested, and some activities/resources were considered 'too young' (club leaders agreed). Allowing flexibility in the length of sessions was another suggestion: as older children do not usually require collecting from after-school clubs this presents less of a logistical issue than for primary school clubs. Attendees' suggestions, incorporating greater autonomy and responsibility, align with the stage-environment fit model discussed (section 7.2.1.).

Encouraging 6th form pupils to be club leaders was recommended by leaders from schools where this was currently practised. Whilst the reciprocal benefits were highlighted (e.g. 6th form pupils gain valuable experience; attendees value having a leader closer to their own age), utilising older pupils also supports a school ethos which promotes socio-emotional wellbeing and fosters school connectedness (Banerjee et al., 2014). Furthermore, engaging para-professionals (including 6th formers) to deliver school-based interventions has pertinent budget and practical implications, potentially making interventions more viable.

Some club leaders requested a more extensive training component for secondary school clubs: whilst sufficient and appropriate training to ensure provider self-efficacy is a fundamental consideration, research shows (e.g. Mendenhall et al., 2013) that the amount of quality training is associated with higher programme fidelity in schools. Additional training elements for secondary school clubs could support leaders to confidently and effectively tailor activities/resources around the needs of older attendees.

Pyramid: a model of good practice for schools

The research shows how Pyramid supports national mental health policies (DH, 2015) which endorse a settings-based approach and underline the primacy of the school setting for service delivery. Findings can inform decision-makers tasked with selecting interventions based on the strength of the evidence, and thus the research addresses government objectives to identify effective interventions which can be embedded within a Health Promoting Schools (HPS) model. Nonetheless, simply demonstrating effectiveness is insufficient: even evidence-based programmes are likely to fail if the school culture and support systems are overlooked: 'it is not evidence-based programmes which are effective, but...well-implemented evidence-based programs' (Durlak et al., 2015, p1124). As part of a multi-component strategy for mental health, enhanced models of good practice are required which explain how specific interventions are successfully implemented through an integrated approach, including collaborative working between schools and local service providers.

A review of mental health provision in English secondary schools (Vostanis et al., 2013) found that services were predominantly reactive rather than preventative and largely non-evidence-based. Furthermore, school-based interventions are often poorly targeted, failing to reach those who would most benefit (Khan et al., 2015). This is contrary to expectations; schools are expected to be aware of pupils' mental health issues and are

required to have clear processes to address them (NCB & The Children's Society, 2015). Nonetheless, research indicated that only 9% of 861 members of the Association of Teachers and Lecturers (ATL, 2015) felt adequately trained to identify vulnerable pupils. Recent, non-statutory, guidance (DfE, 2016) has been issued to help staff recognise and assist pupils with mental health difficulties. Whilst this may offer valuable advice, schools require commensurate support to deliver well-designed and well-implemented interventions (NICE, 2008; 2009).

Tensions between mental health initiatives and competing school priorities (led by education policies which focus on maximum attainment in a narrow range of subjects) can further impede timely and appropriate mental health interventions (Bonell et al., 2014; Fazel et al., 2014). Interventions (e.g. Pyramid) which demonstrate an impact on health and school performance outcomes can contribute to coexisting school priorities and offer added value (Vidair et al., 2014). To meet the current need for enhanced models of good practice an extended, five-part Pyramid model (section 7.6.1.) that can be integrated with existing school policies to promote pupils' socio-emotional well-being is proposed.

Pyramid: the context of school and mental health well-being policies

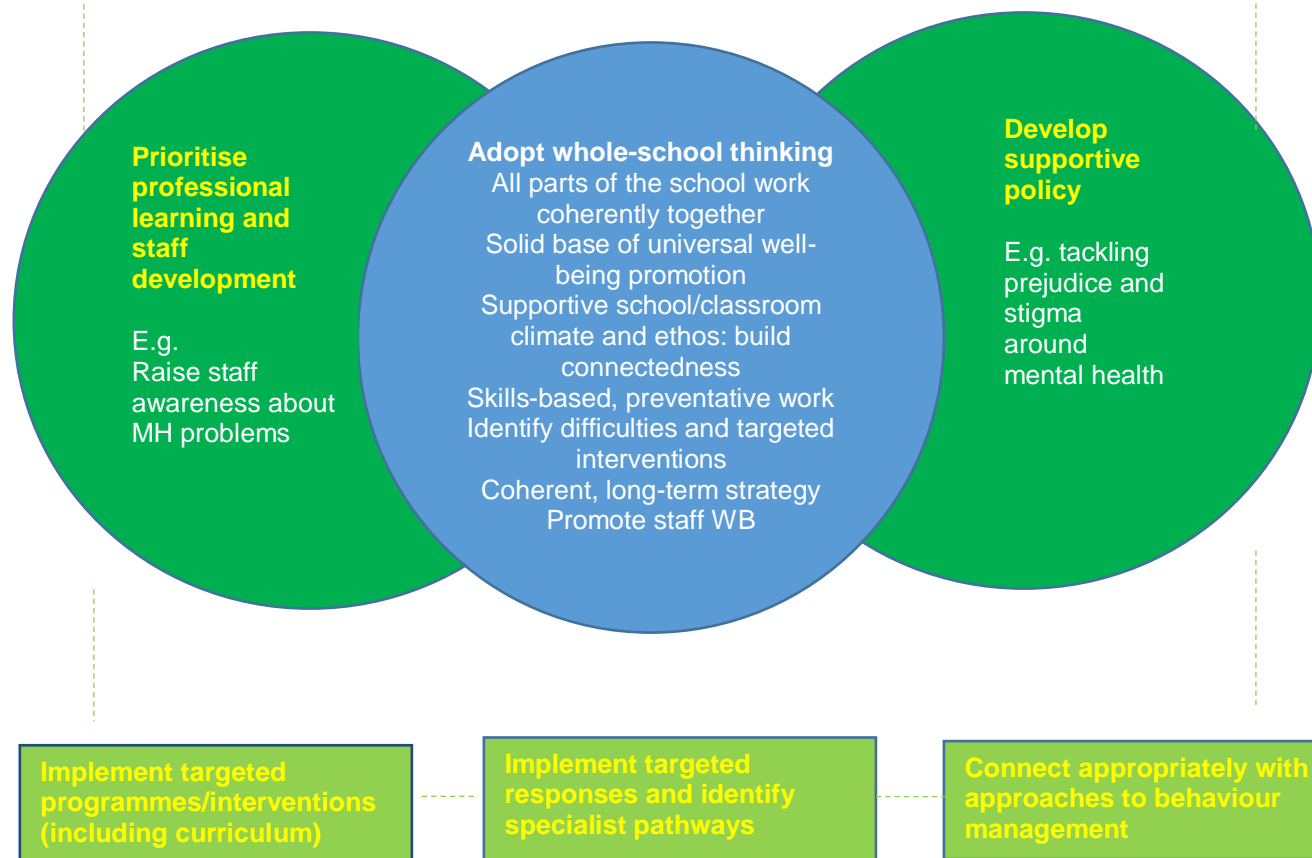
The research was conducted in the context of a national commitment to: 'encouraging schools to continue to develop whole school approaches to promoting mental health and wellbeing' (DH, 2015, p19). In line with this strategy, Public Health England (2015) identified eight principles to promote well-being in schools; pivotally, for leadership and management to support and champion efforts to promote socio-emotional health. Seven supporting principles include: an ethos and environment that encourages respect and values diversity; a curriculum which promotes resilience and socio-emotional learning; enabling students to influence decisions; identifying need and monitoring impact of interventions; targeted support and appropriate referral; staff development, and parent/carer collaboration. These are underpinned by NICE guidance for supporting

CYP's socio-emotional well-being in schools (NICE, 2008; 2009) and are linked to the Ofsted inspection framework, 2015 (Ofsted, 2015b).

All eight principles have been embodied within a framework (Figure 7.2.) developed by The Partnership for Well-Being and Mental Health in Schools (a national network supporting schools and services to improve CYP's mental health in education: NCB, 2015), designed to maximise mental health and learning outcomes. This framework identifies a reactive strand i.e. providing targeted responses, and a preventative strand i.e. implementing targeted programmes/interventions (for example, Pyramid). A proposal emerging from the research is that schools will have greater chance of improving pupil well-being if researchers provide ecologically valid interventions that complement schools' current strategies for promoting mental health, thus helping to bridge the research to practice gap and effectively deliver 'real world' outcomes for CYP. *Figure 7.3.* depicts Pyramid nested within a multi-component approach to mental health in schools. A five-part Pyramid model which aligns with the eight key principles outlined by the NCB (2015) and can be integrated as part of schools' preventative strand of mental health provision is described in section 7.5.

ENGAGE THE WHOLE COMMUNITY

Engage pupils (e.g. through pupil voice, involvement in learning, decision-making and peer-led approaches)
Engage parents/carers and families



MH = mental health; WB = well-being

Figure 7.2: Framework for schools: effective approaches for delivering mental health provision (Adapted from NCB, 2015)

Settings-based approach to mental health

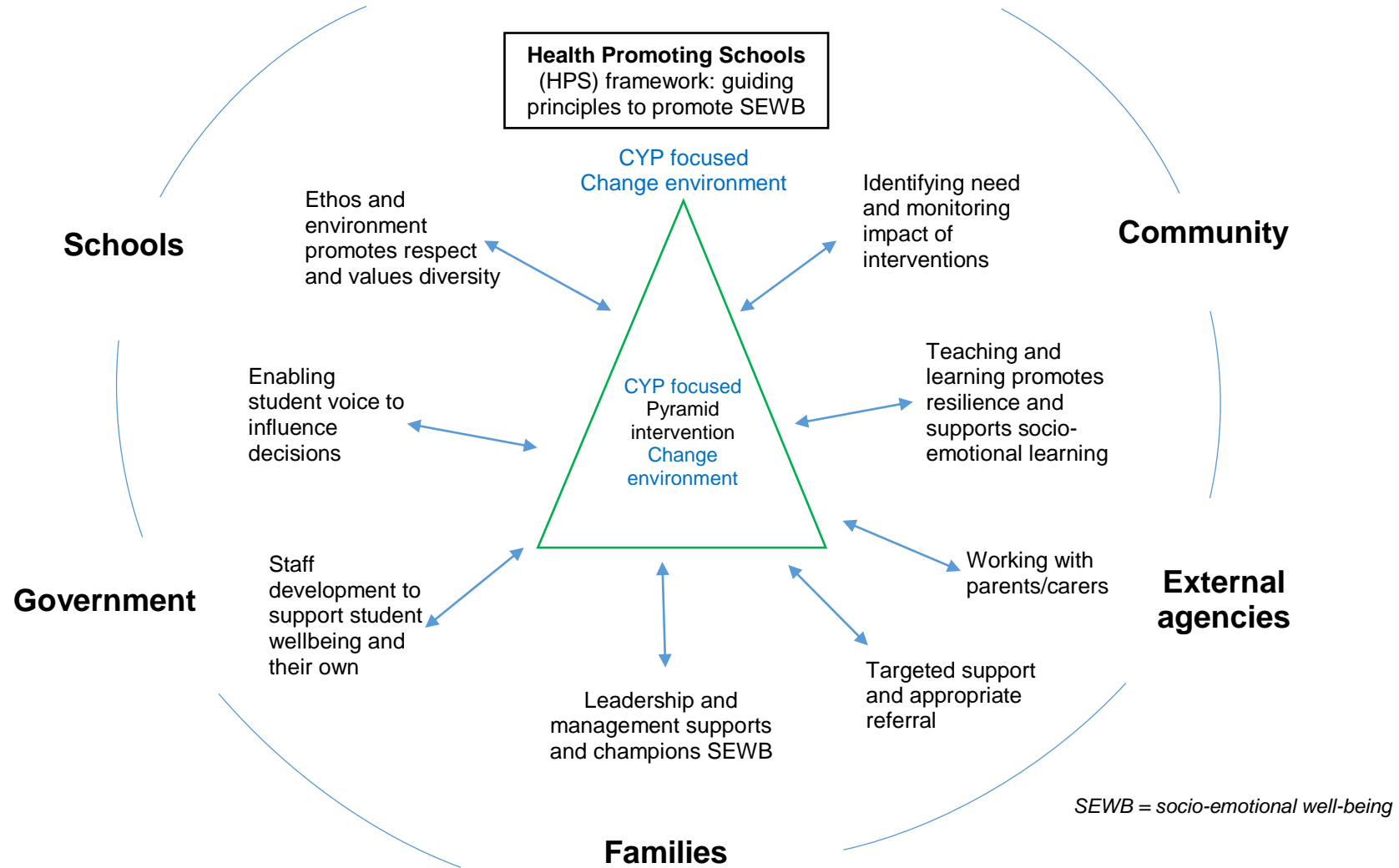


Figure 7.3: A settings-based approach: Pyramid nested within the HPS framework

7.4. Strengths and limitations of the research

Each study's limitations have been discussed (Chapters Four, Five and Six). However, broader limitations relate to: implementing a mixed methods strategy; integrating quantitative and qualitative findings, and evaluation criteria omitted from the research. Despite its limitations, the strengths of the study lie in: its ecological validity; methodological pluralism; capturing pupil voice to inform services and policies; the explicit links made between theory and intervention outcomes, and utilising reliable methods (i.e. the *BCT Taxonomy v1*: Michie et al., 2013) which facilitates greater synthesis of the current findings with other intervention effectiveness studies.

The use of a mixed methods design permitted both generalisable results (the effects on early secondary-aged pupils' socio-emotional well-being and school performance from quantitative findings) and extensive insights (understanding intervention processes and components of behaviour change from qualitative findings). Whilst each method has inherent limitations, multi-method research compensates for the weaknesses of one by complementing it with another (Breakwell, Hammond, Fife-Schaw, & Smith, 2008). Moreover, implementing multiple measures increases the validity and reliability of data from complex intervention (e.g. Pyramid) evaluations (Boeije et al., 2015).

Utilising standardised outcome measures (e.g. the SDQ, Goodman 1997; Goodman et al., 1998) allowed previous findings from primary school studies to be replicated (e.g. Cassidy et al., 2014; 2015; McKenna et al., 2013; Ohl et al., 2012; 2008), augmenting the evidence base. Cross-informant quantitative data were collected and a second measure of subjective well-being was used, thus enhancing methodological robustness by not relying on single-informant data or sole outcome measure of socio-emotional well-being (Stone et al., 2010). Embedding a qualitative methodology permitted effectiveness findings from the quantitative analysis to be scrutinised and confirmatory evidence

established through method triangulation. A qualitative method provided rich, emic data to compensate for the weakness of purely etic approaches (associated with quantitative methods) which risk overlooking hidden nuances, meanings and concepts (Yin, 2010). Capturing the voice of service users and club leaders allowed intervention processes and techniques to be investigated and linked to relevant theories (Prestwich et al., 2014), thus facilitating intervention development and enhanced applied practice: the five-part Pyramid model has been incorporated in the most recent edition of the Pyramid guide to setting up clubs (Pyramid, 2017).

Despite the benefits of a pluralist methodology several practical challenges were encountered with the design. Typically, mixed methods research involves considerably more time and resources than mono-method studies (Cresswell & Plano Clark, 2011) and schools-based research requires a substantial commitment from stakeholders: data collection involving multiple measures was reliant on cooperation from school leaders and key staff (e.g. to collect teacher-informant assessments and arrange focus groups). This administrative burden may have deterred schools from participating in the research: three schools showing an initial expression of interest did not ultimately participate, although the reasons were not confirmed. Access to data and the response rate was not optimal, despite agreed research schedules with schools. For example, one school failed to provide any comparison group data or 12-month follow-up data without providing a reason. In future studies, the ecological viability of using a range of mixed measures in complex secondary schools should be of key consideration.

A related drawback refers to the limited resources of any research project. Specifically, as resources need to be spread in a mixed methods design, this may dilute the research effort in one area vis-a-vis another (Bryman, 2012). A single subjective measure of pupils' school performance was implemented at short-term assessment only. Whilst research

findings suggested Pyramid's impact on school performance, a more extensive examination of 'academic enablers' (DiPerna & Elliot, 2002) is required. Connectedness emerged as a potential motivator of behaviour change and the link between Pyramid and school connectedness, and how this contributes to academic progress over the short- and longer-term merits further investigation. Furthermore, a single objective measure of school performance was utilised. The decision to use the national assessment framework was based on practicality and perceived ability to synthesise the data: the incremental removal of this system during the research period was not predicted. Given the length of the research project (three academic years), a second objective measure could have been implemented to allow for such unforeseen circumstances.

A researcher's limited skill and training is acknowledged as a barrier to successfully integrating and reporting findings from mixed methods research (Cresswell & Tashakkori, 2007), and quantitative and qualitative components are commonly described autonomously (Lewin, Glenton, & Oxman, 2009). Nonetheless, the current researcher was guided by her philosophical framework and a reflexive approach was applied throughout the research process, including the final interpretation of findings, helping avoid subsuming the qualitative insights within the quantitative findings and permitting the 'yield' from the qualitative study to be afforded equal credibility.

A further limitation refers to the scope of the research findings. An important consideration with respect to intervention evaluation concerns the relative impact on discrete groups (Durlak et al., 2015). Whilst the research has shown an equivalent impact of Pyramid across gender, ethnic and SES groups, demonstrating programme effectiveness for distinct demographic groups does not imply that adapted versions may not produce stronger outcomes. Furthermore, some authors (e.g. Barrett, Lock, & Farrell, 2005) suggest that programme effectiveness can be improved by reaching vulnerable

CYP at developmentally sensitive ages. Further research is required to examine the relative strength of Pyramid's effectiveness with pupils at different developmental stages (i.e. primary, transition group and secondary school variants).

Despite proposing Pyramid as a model of good practice for schools, the lack of cost analysis information is a limitation. Although findings suggest elements of Pyramid are low-cost (e.g. para-professionals, including internal staff/older pupils, can deliver clubs), no objective measures were implemented in this respect. Evaluating the short-term and longer-term economic benefits associated with attending Pyramid (e.g. lower use of mental health services, improved educational and employment outcomes) could demonstrate added value of socio-emotional interventions, thus increasing the likelihood of implementation in schools.

7.5. Disseminating impact and future research directions

In line with the implications of the research (section 7.3.1 and 7.3.2.) this section proposes an extended five-part Pyramid model, outlining how implementation processes can be integrated with existing school systems and recommended strategies (NCB, 2015; Public Health England, 2015) to promote socio-emotional well-being (section 7.5.1.). It is widely argued (e.g. Fixsen, Blase, Metz, & Van Dyke, 2013) that successful interventions need to combine with effective implementation processes to yield improved outcomes, requiring strategies to address the many variables impacting on implementation quality and sustainability (Hoy & Miskel, 2012). The challenge for school-based programmes (e.g. Pyramid) is to integrate with schools (Durlak et al., 2015).

7.5.1. Pyramid: a five-part model for secondary school clubs

The Pyramid model was described as a three-part preventative intervention (section 2.3.1.) and the three original stages are referred to in this section with respect to current findings. An extension of the original model proposes a five-part framework which fully incorporates a pre-intervention, and post-intervention phase (*Figure 7.4*). Couched within an ecological perspective, the model takes into account the quality of connections between different groups (e.g. pupils, parents/carers, school staff, external agencies and volunteers, including club leaders). Durlak et al. (2015) adopt Rogers' (2003) model (*Figure 7.5*) to illustrate the processes involved in translating research to practice, thus facilitating widespread application of evidence-based programmes. Diffusion occurs through five stages that can be mapped to the five-part Pyramid model: 1. *Dissemination* (communicating accurate and helpful programme information to stakeholders), aligning with the preparation and planning phase; 2. *Adoption* (programme is tried out), aligning with the screening and inter-professional consultation/co-operation (selection) phases; 3. *Implementation* (high quality programme delivery to provide a fair test of ability to produce changes), aligning with the activity group therapy phase; 4. *Evaluation* (examining how well targeted goals were achieved), aligning with the evaluation and impact phase, and 5. *Sustainability* (programme, if successful, becomes routinely adopted and rolled out), also aligning with the evaluation and impact phase.

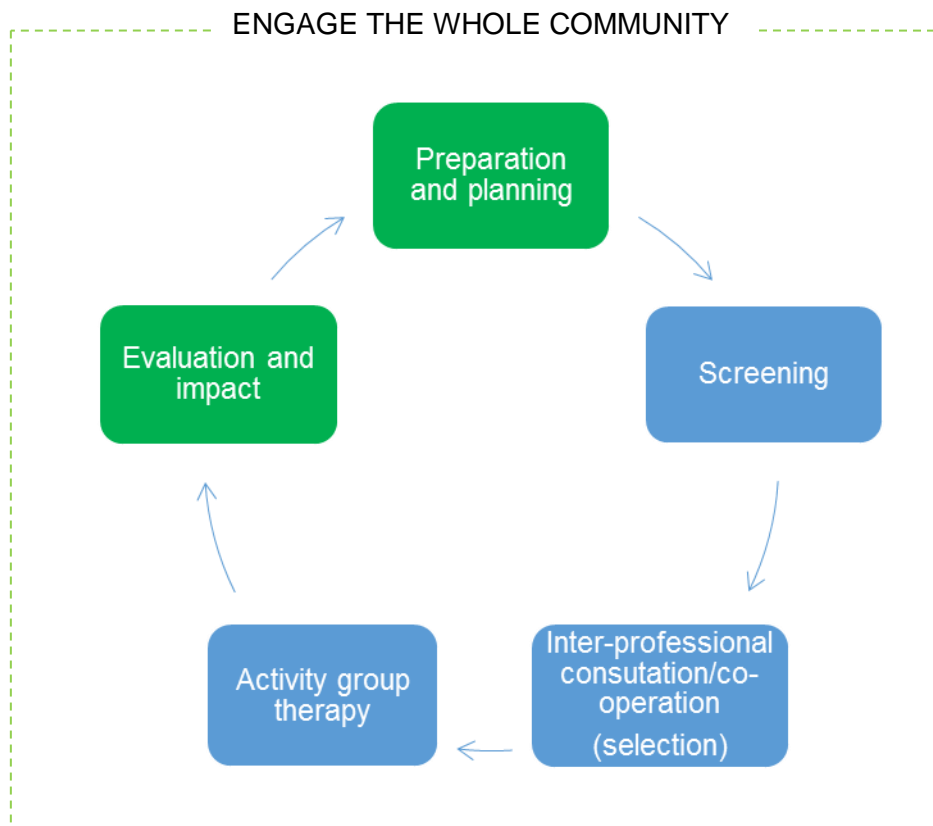


Figure 7.4: Pyramid: a five-part preventative intervention

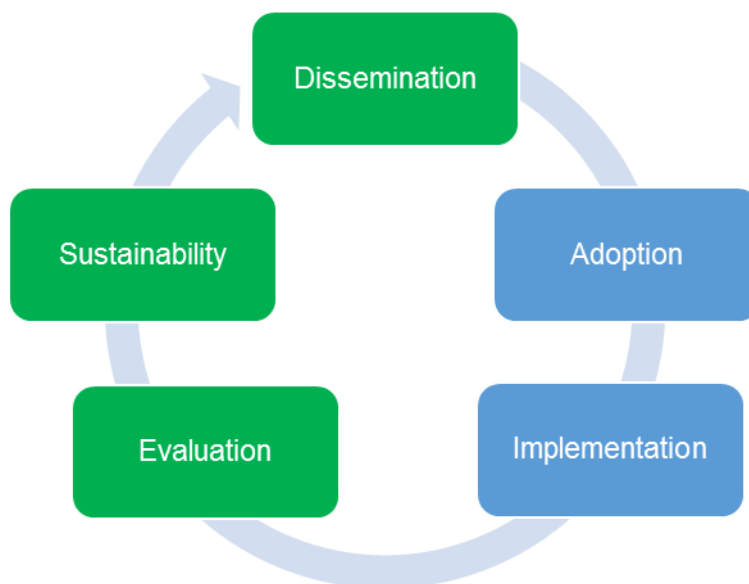


Figure 7.5: Translating evidence-based programmes to practice: Diffusion of innovations model (Rogers, 2003) (Adapted from Durlak et al., 2015)

Preparation and planning (pre-club phase)

The preparation and planning stage refers to all pre-club activity. School leaders are tasked with selecting interventions based on the strength of evidence (DH, 2015) and providing recent evaluation findings supports a robust commissioning process. Current findings demonstrate both short- and longer-term intervention effectiveness on socio-emotional outcomes and impact on pupils' school performance, thus mapping onto dual school priorities. Moreover, findings incorporate 'pupil voice', reflecting young people's views and experiences of Pyramid, aligning with government policy (DH, 2015) and NCB recommendations (2015) to consider young people's perspectives regarding services that affect them and which can be used to inform future intervention decision-making. A strong evidence base increases the likelihood of securing commitment from school leaders which in turn harnesses 'organisational capacity' (Durlak & DuPre, 2008).

Once a school has agreed to run a club, negotiations begin regarding the practicalities of delivery. Schools are advised (DH, 2015; Public Health England, 2015) to nominate a 'champion' or lead to promote emotional health and well-being, whose remit includes embedding interventions successfully, maintaining continued support, and disseminating impact. However, not all schools have a designated well-being lead (none in the current research). The local Pyramid Coordinator must liaise with the school Pyramid Coordinator, and this role may be allocated to the Head of Year or support staff.

Establishing a good relationship and regular contact with key member/s of school staff can enhance negotiations for preferred delivery conditions (BCPs) (e.g. timings, access to rooms/outside space), pre-empt calendar/timetable issues, and optimise local resources (e.g. internal staff and/or 6th form students can be recruited as club leaders). All leaders receive mandatory Pyramid training and for school staff this contributes (in line with NCB, 2015 recommendations) to extending knowledge and professional development in the area of socio-emotional well-being.

Promoting Pyramid's aims to stakeholders is a component of the pre-club phase: encouraging attendance (pupils know what to expect); reducing potential stigma (e.g. raising awareness/encouraging discussion of well-being issues), and gaining wider support from peers, school staff and parents/carers. For example, offering Pyramid information sessions enables wider dissemination of key information and questions/concerns can be addressed; 'taster' activities can be tried and Pyramid 'graduates' can share their first-hand experiences. A pro-active communications strategy ties in with recommendations (NCB, 2015) for schools to adopt policies and approaches to raise staff awareness of mental health issues. It provides another platform for 'pupil voice', encouraging pupils to provide meaningful input into school policies and practices. Furthermore, this strategy promotes working in partnership with parents/carers and families to support young people's socio-emotional well-being (Public Health England, 2015).

Screening

The size and complexity of some secondary schools prohibit universal screening. Pupil level data provided from primary schools (for Year 7 clubs) and teacher observations were two methods used in the research to initially identify potential invitees. Multiple school staff can complete the informant-rated SDQ (appropriate in secondary schools where young people have frequent contact with several staff), however, collection of multi-informant data requires the school Pyramid Coordinator to identify suitable raters. Increased parental and self-referral for clubs may be encouraged by promotional strategies (pre-club phase) which may help reduce the number of unsuitable pupils being referred for clubs.

In line with schools' responsibility to identify pupils with mental health needs, the DfE (2016) recommends using the SDQ for planning activities/interventions and evaluating

their impact. All SDQ data collected for Pyramid clubs can be fed back to schools, contributing to existing strategies for identifying pupils' needs, commissioning services and monitoring the impact of interventions; screening does not, therefore, present an additional burden for schools or pupils.

Inter-professional consultation/co-operation (selection)

Inter-professional consultation/co-operation is an assumption of all stages of the five-part model and indicative of an integrated approach. However, at stage three it specifically refers to collaboration between professionals regarding pupil selection and provides cross-validation for the SDQ assessment. Inter-professional consultation/co-operation (e.g. Pyramid and School Pyramid Coordinators, Head of Year, learning mentor) supports the continuous professional development of school staff, helping them to develop knowledge, understanding and skills, to identify pupils with mental health needs and recommend suitable pathways (NCB, 2015).

To conclude the selection stage, information on selected pupils (e.g. pupil premium, medical conditions or family/cultural background) should be made available to club leaders. Information must be kept up-to-date, for example, club leaders should be advised if an emergent issue may impact on a pupil's well-being (e.g. family illness) at any stage in the club's life cycle.

Activity group therapy

Pyramid is a microcosm of the HPS model which embodies a pupil-focused, strengths-based approach to promoting mental health and well-being (*Figure 7.3*): demonstrating the 'fit' between the intervention and the mission, priorities and values of the host organisation (Durlak & DuPre, 2008). School-based socio-emotional interventions (like Pyramid) have the potential to help young people acquire the skills they need to make

good academic progress as well as benefitting their mental health and well-being (DH, 2015; Public Health England, 2015). Pupils are more likely to engage in programmes that impact on these dual domains if the content and materials match their interests and are delivered engagingly (Public Health England, 2015). Research findings support the ‘goodness of fit’ between attendees’ developmental needs and the contextual supports and opportunities Pyramid club provides (section 7.2.).

Evaluation and impact (post-club phase)

The post-club phase is inextricably linked to the pre-club phase and, therefore, the five-part model is depicted as cyclical. Club evaluation and monitoring of pupil outcomes involves follow-up assessment (using quantitative and qualitative methods) on behaviour change from pre- to post-club. This enables analysis at pupil level to be fed back to schools, allowing ongoing monitoring and, if appropriate, further support. On a club level, findings add to the Pyramid evidence, expanding the empirical base. Moreover, submitting research findings for national framework assessment (e.g. EIF) contributes to the evidence used to inform funders and policy makers. A diffusion loop is created, whereby the latest evidence can be used to attract commissioning of further Pyramid clubs. Nonetheless, future evaluations require more rigour in relation to evidence frameworks e.g. incorporating cost analysis.

Capturing the ‘voice’ of the young person was central to the design of the current evaluation and feedback from Pyramid members (along with club leaders), including suggestions for change, can be practically applied, thus contributing to the on-going development and improvement of Pyramid clubs (section 7.3.2.). This is in line with current recommendations: providers must monitor, and commissioners must consider, the extent to which the interventions available fit with the stated preferences of young

people and parents/carers so that provision can be shaped increasingly around what matters to them (DH, 2015).

7.5.2. Limitations of the model

The general lack of success with the national implementation of SEAL in secondary schools has seen a shift from generic towards more programme-focused efforts to embed socio-emotional well-being initiatives (Lendrum et al., 2013), however, there are limitations associated with such approaches. Whilst the five-part Pyramid model is outcomes-focused, accessible, and evidence-based (satisfying DH, 2015 criteria and aligning with current recommendations: NCB, 2015; Public Health England, 2015), a primary limitation is the underlying assumption of school 'readiness'. Despite schools' duty to promote pupil well-being (Children Act 2004), non-statutory advice and guidance may be embraced and embedded to a greater or lesser extent within individual schools.

Integrated approaches are dependent on the quality of processes and connections across the organisation and weakness in one area impacts on others. A commitment to intervention implementation may be secured from school leaders; however, numerous organisational variables, typical of complex organisations, may undermine this at a later stage. For example, revised timetabling/limited staff capacity to support proposed strategies, may impact on delivering the model effectively. The strength of connections between different groups across the school community is vulnerable to a plethora of factors. Ensuring on-going commitment from staff, parents and other stakeholders is a major challenge and can be compromised, for example, if key individuals (e.g. the well-being lead) leave or change role.

A further drawback refers to the premise that no two schools would integrate Pyramid in an identical fashion, thus leading to the creation of bespoke programmes that meet the

unique needs of specific groups, staff and schools. Whilst the individuality of this approach may have its advantages, it is problematic for monitoring fidelity and measuring impact across Pyramid clubs. Further research is required to establish which components of the intervention require fidelity and which can be modified (e.g. dosage, session length). Developing a Pyramid integrity scale (section 7.3.2.) would provide an objective measure for assessment.

From a wider perspective, schools exist within large ecological systems and macro-level changes may influence efforts to promote socio-emotional well-being. Whilst the government's commitment to promote well-being through school-based initiatives has been clearly stated (DH, 2015), this appears to conflict with concurrent educational policies that focus on high attainment, leading to a loss of focus on the 'whole child' (Thorley, 2016). High-stakes accountability tests (e.g. the revised national examination system: www.aqa.org.uk) add to the psychological distress socio-emotional programmes aim to allay; schools are presented with competing demands and difficult choices about priorities. The perception that time allocated to socio-emotional well-being removes attention from academic subjects and school targets persists, and a paradigm shift in education is needed (Bonell et al., 2014; Fink, 2015). Nonetheless, it is within this context that local projects like Pyramid are competing for support.

7.6. Contribution of the research to knowledge and concluding remarks

The evaluation of Pyramid in secondary schools presented in this thesis has extended the evidence base by showing improved socio-emotional outcomes for vulnerable pupils aged 11- to 14-years, across gender, ethnic and SES groups. Thus, in conjunction with primary school studies (e.g. Cassidy et al., 2014; 2015; McKenna et al., 2014; Ohl et al., 2012; 2008), extant evidence spans all the developmental stages Pyramid supports. The research addresses the dearth of studies on developmentally relevant programmes for

early adolescents, demonstrating effectiveness at short-term assessment and sustained improvements one-year on.

Findings augment the limited evidence showing Pyramid's impact on school performance, contributing to the literature linking improved socio-emotional competencies with educationally relevant attitudes and behaviours. Preliminary evidence suggesting a link between Pyramid, connectedness, and school performance has identified where future research is needed: to examine specific 'academic enablers' that Pyramid may influence, and their effect on educational outcomes, including pupils' academic progress in the short- and longer-term.

These novel and important findings can be added to relevant evidence hubs (e.g. EIF) that enable the systematic linking of research findings with intervention decision-makers, thus helping to inform applied practice.

The research extends the contribution of previous Pyramid evaluations by offering some understanding of behaviour change. Contextual factors and specific techniques were described within a conceptual framework and, by demonstrating explicit links between theory and outcomes, a greater understanding of behaviour change was gained.

Moreover, these insights have contributed to the development of a five-part Pyramid model, supporting applied practice and future sustainability of the Pyramid intervention in schools.

The model describes how Pyramid can be integrated within current HPS initiatives in UK secondary schools. The relevance of this approach is linked to the government's pledge to support local school-based projects e.g. 'character education' funding (up to £6 million

in 2016/17). To meet eligibility criteria projects must demonstrate how they help pupils to be 'confident, happy and resilient', and support academic attainment (DfE, 2016), which current findings show. The five-part Pyramid model enables research findings to be operationalised through applied practice in secondary school clubs, thus translating the latest evidence into practice, improving socio-emotional and learning outcomes for young people and, crucially, creating 'real world' impact on pupils' lives.

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Appendices

Appendix A: The SDQ for parents or teachers of 4- to 17-year-olds (Goodman, 1997)

Strengths and Difficulties Questionnaire

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems daft! Please give your answers on the basis of the child's behaviour over the last six months or this school year.

Child's Name

Male/Female

Date of Birth.....

	Not True	Somewhat True	Certainly True
Considerate of other people's feelings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Restless, overactive, cannot stay still for long	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often complains of headaches, stomach-aches or sickness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shares readily with other children (treats, toys, pencils etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often has temper tantrums or hot tempers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rather solitary, tends to play alone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Generally obedient, usually does what adults request	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Many worries, often seems worried	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Helpful if someone is hurt, upset or feeling ill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Constantly fidgeting or squirming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has at least one good friend	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often fights with other children or bullies them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often unhappy, down-hearted or tearful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Generally liked by other children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Easily distracted, concentration wanders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nervous or clingy in new situations, easily loses confidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kind to younger children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often lies or cheats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Picked on or bullied by other children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often volunteers to help others (parents, teachers, other children)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thinks things out before acting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Steals from home, school or elsewhere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gets on better with adults than with other children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Many fears, easily scared	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sees tasks through to the end, good attention span	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Signature

Date

Parent/Teacher/Other (please specify:)

Thank you very much for your help

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Appendix B: The self-report SDQ for 11- to 17-year-olds (Goodman et al., 1998)

Strengths and Difficulties Questionnaire

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems daft! Please give your answers on the basis of how things have been for you over the last six months.

Your Name

Male/Female

Date of Birth.....

	Not True	Somewhat True	Certainly True
I try to be nice to other people. I care about their feelings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am restless, I cannot stay still for long	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get a lot of headaches, stomach-aches or sickness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I usually share with others (food, games, pens etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get very angry and often lose my temper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am usually on my own. I generally play alone or keep to myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I usually do as I am told	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I worry a lot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am helpful if someone is hurt, upset or feeling ill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am constantly fidgeting or squirming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have one good friend or more	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I fight a lot. I can make other people do what I want	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am often unhappy, down-hearted or tearful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other people my age generally like me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am easily distracted, I find it difficult to concentrate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am nervous in new situations. I easily lose confidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am kind to younger children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am often accused of lying or cheating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other children or young people pick on me or bully me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I often volunteer to help others (parents, teachers, children)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think before I do things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I take things that are not mine from home, school or elsewhere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get on better with adults than with people my own age	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have many fears, I am easily scared	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I finish the work I'm doing. My attention is good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Your signature

Today's date

Thank you very much for your help

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Appendix C: The self-report WBQ for 11- to 16-year-olds (NPC, 2010)

Please enter your unique id:



The Well-being Questionnaire

Pyramid secondary school clubs participant self-evaluation

1230-WB - Pyramid secondary school clubs participant self-evaluation

Your Information. The Well-being Measure is operated by New Philanthropy Capital. We hold information you provide in responses to these questions together with any information about you provided by the organisation that asked you to do this survey. We will keep this information confidential and will not release it in a form that identifies you. However, we will use the information to generate anonymised statistical information. For more information visit www.well-beingmeasure.com.

Here are some questions for you to answer on your own, about you and your life. When you answer the questions think about your life as it is now.

We are interested in your honest answers. This is not a test and there are no right or wrong answers. We will not tell anyone what your answers are.

1. Age

2. Gender

Male Female

3. Your postcode

Please say how much you agree with each sentence

	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
4. I like Maths	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5a. I am good at Maths	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5b. I learn things quickly in Maths	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I like English	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7a. I am good at English	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7b. I learn things quickly in English	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

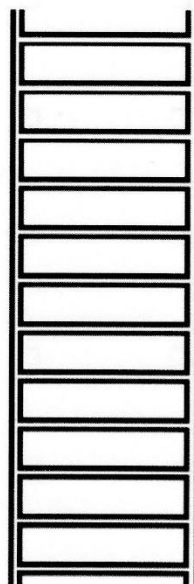
8.

Below is a picture of a ladder

The top of the ladder (10) is the best possible life for you and the bottom (0) is the worst possible life for you. In general, where on the ladder do you feel you stand at the moment?

Please tick the box that best describes where you stand.

10



0

The image shows a vertical ladder with 10 horizontal rungs. The top rung is labeled with the number '10' and the bottom rung is labeled with the number '0'. The rungs are empty, and there are no tick marks or other markings on them.

9.

The next few sentences are about yourself. Please say how much you agree with each sentence.

	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
A lot of things are good about me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can't do anything right	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In general I like being the way I am	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do a lot of important things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall I have a lot to be proud of	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can do things as well as most other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall I am no good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other people think I am a good person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am as good as most other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
When I do something, I do it well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10.

The next few sentences are about yourself. Please say how much you agree with each sentence.

	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
I cry a lot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am too fearful or anxious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am nervous or tense	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am unhappy, sad or depressed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I worry a lot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11.

The next few sentences are about yourself. Please say how much you agree with each sentence.

	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
I usually manage one way or another	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I keep interested in things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My life has a sense of purpose	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I find life really worth living	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My life has meaning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12.

The next sentences are about you and your friends.

Please say how much you agree or disagree with each sentence.

	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
My friends treat me well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have a lot of fun with my friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My friends are mean to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My friends are great	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My friends will help me if I need it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13.

The next sentences are about you and your family. Please say how much you agree or disagree with each sentence.

	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
I enjoy being at home with my family	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I like spending time with my parents/carers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents/carers and I do fun things together	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents/carers treat me fairly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My family gets along well together	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14.

Please say how much you agree or disagree with the following sentences about where you live.

	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
Adults in my area treat young people well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I wish I lived somewhere else	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I like where I live	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are lots of fun things to do where I live	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I wish there were different people in my neighbourhood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15.

The next sentences are about you and your school. Please say how much you agree or disagree with each sentence.

	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
I like being in school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I wish I didn't have to go to school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel safe at school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I enjoy school activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
School is interesting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

These questions are about other aspects of your life or experiences. You can tick more than one box.

16.

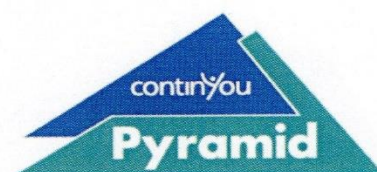
When you were invited to join the Pyramid club, how did that make you feel?

- Worried
- Happy
- Uncertain
- Suspicious
- Pleased
- Neutral
- Curious

17.

What are you hoping to get out of the Pyramid club?

- Make new friends
- Improve my confidence
- Have fun
- Not sure
- Do better in school
- Become less worried about life
- Learn something new
- Try new things



**Thank you for your help with this study.
Please give your questionnaire back to the member of staff.**

Appendix D: Focus group protocol for Pyramid club participants



Researcher's script:

Introduction: Hello everyone. Thank you for coming today, my name is Michelle. I would like to ask you some questions about your Pyramid club which has recently finished. The reason I want to do this is because my research is about Pyramid clubs so it's important for me to find out what people who have been to them think of them. We have about 30 minutes and I'd like you to answer the questions as fully as possible. There are no right or wrong answers and I want to hear if you have negative things as well as positive things to say. I want to know what the Pyramid club experience was like for you. I'm going to record our conversation with this equipment and may also make some notes, so I can remember everything afterwards. I will be writing up a report but will not use anyone's name or reveal any personal details and your school will receive a copy of this.

Does anyone have any questions?

Ground rules:

Before we begin I would like everyone to think of a famous person or character, perhaps from a film or book. Nobody should have the same name as anyone else but once you have decided please write it on the sticky label I give you and put it on, somewhere everyone can see. I'll let you have a few minutes to do this and you can chat amongst yourselves if you like. I know you all know each other but this will help me to identify who is speaking on the recording afterwards.

It is important that everyone has a chance to join in and I am interested in hearing from all of you. So, we need to agree some ground rules before I begin with the questions. As we are using recording equipment I need to be able to hear everyone clearly which is difficult if people talk at the same time. So, when one person is talking, everyone else please listen. If you want to say something, wait until the person who is talking is finished before you begin. I may prompt you from time to time but I really want you to do the majority of the talking as it's your views I'm interested in.

Everyone will have their individual experience of Pyramid club and will have different thoughts. Not everyone will agree about everything but it is important to respect each other's point of view and to allow everybody to have their say.

Please don't use anyone's real name while we are recording but you can use the names people have chosen to put on their label and I will use these names too. The first thing I would like you to do when we start recording is to introduce yourself using the name on your label.

I would like everyone in the group to join in the discussion. Any questions before we begin the recording?

Equipment:

- audio recording equipment
- sticky labels for names and pens
- flip chart paper and pens

Conduct focus group utilising the question schedule.

Following the focus group debrief participants and close the session.

Appendix E: Focus group protocol for Pyramid club leaders



Researcher's script:

Introduction: Hello everyone. Thank you for coming today, my name is Michelle. I would like to ask you some questions about the Pyramid club you helped to run which has recently finished. My research involves evaluating Pyramid clubs so it is important for me to collect the views of the club leaders as well as the young people who attend. We have about 40-45 minutes and I'd like you to answer the questions as fully as possible. Please talk freely and I want to hear if you have negative things as well as positive things to say. I'm going to record our conversation with this equipment and may also make some notes, so I can remember everything afterwards. I will be writing up a report but will not use anyone's name or reveal any personal details and your school will receive a copy of this.

Does anyone have any questions?

Ground rules:

Before we begin, please can you write the club leader number I allocate you (e.g. Club leader 1, Club leader 2 etc.) on to a sticky label, as we will be using pseudonyms during the session. This is for my benefit, so I can identify who is speaking on the recording afterwards.

As we are using recording equipment I need to be able to hear everyone clearly which is difficult if people talk at the same time. So, when one person is talking, please wait until they have finished before you respond.

I may prompt your responses from time to time but really want you to do the majority of the talking as it's your views I'm interested in.

Please don't use anyone's real name while we are recording. The first thing I would like you to do when we start recording is to introduce yourself using the Club leader number on your label.

I would like everyone in the group to join in the discussion. Any questions before we begin the recording?

Equipment:

- audio recording equipment
- sticky labels for names and pens
- flip chart paper and pens
- notebook

Conduct focus group utilising the question schedule.

Following the focus group debrief participants and close the session.

Appendix F: Focus group questions for Pyramid club participants



Q1: Think back over the time you have spent at Pyramid club and tell us one of your most enjoyable memories.

Q2: What did you like best about the club?

Q3: What did you like least about the club?

Q4: If you were inviting another Year [*insert Year group here*] pupil to come to Pyramid club, what would you write in the invitation?

Q5: How has coming to Pyramid club helped you? If you have an example of how Pyramid has helped you, can you describe it?

Q6: How does being a Pyramid club 'graduate' make you feel?

Q7: Before you started Pyramid club you were asked what you hoped to get out of it. What did you get out of coming to the club and is it what you'd hoped for?

Q8: If you were in charge of Pyramid club and could make one change that would make it better, what would that be?

Q9: Is there anything else that anyone would like to say about Pyramid club before we finish?

Appendix G: Focus group questions for Pyramid club leaders



Q1: Overall, how effective do you think Pyramid club has been for the pupils attending?

Q2: Which aspects of the club do you think worked best?

Q3: Which aspects of the club could have been improved?

Q4: In which ways do you think attending Pyramid club has helped pupils?

Q5: What do you think is the most positive experience pupils have gained from Pyramid club?

Q6: Were there any barriers which prevented the club running as you had expected?

Q7: How would you sum up your personal experience of running a Pyramid club?

Q8: If you were to describe Pyramid club to a new group of Year *[insert Year group here]* pupils you wanted to attend, how would you describe it?

Q9: If you could make any changes to Pyramid Club, what would they be and why?

Q10: Is there anything else you would like to add about Pyramid club before we finish?

Appendix H: Codes used in the thematic analysis of focus group data

Generating Initial Codes (Braun & Clarke, 2006)	Total 55
A priori	
Socio-emotional effects (SE effects)	1
Pyramid core	2
School performance effects (SPE)	3
Behaviour change drivers (technique or procedure BCP/BCT)	4
Barriers	5
Inductive (including pre-coding: important 'moments' in the data from phase 1)	
Pre-club perceptions	6
Attendee inter-peer relationship	7
Attendee/ club leader relationship	8
Club leader qualities	9
Club rules	10
Feelings about being selected	11
Inter-club leader relationship	12
Sense of belonging	13
Activities not appropriate/successful	14
Group identity	15
Sense of achievement	16
Having 'fun'	17
Positive affect	18
Conduct	19
Expectations	20
Group 'mourning'	21
Suggested improvements	22
Resistance	23

Perceived benefits	24
Having a say	25
Flexibility	26
Supportive	27
Ownership and responsibility	28
'Sharing'	29
Team work	30
Creativity	31
Disengagement	32
Skills	33
Parental influence	34
Applying SE skills	35
Pyramid Ambassador	36
Stigma	37
Self-perception	38
Wider school factors	39
New experiences	40
Getting 'a voice'	41
Feeling cared about	42
Personalised	43
Relaxed atmosphere	44
Can be 'yourself'	45
Feeling 'safe'/'not worried'	46
Negative experience	47
Learning new things	48
Reinforcing learning	49
Impact on club leaders	50
Change over time	51

Outside activities	52
Previous anxieties	53
Variety	54
'Enjoyable'	55

Appendix I: Study information and consent form for Headteachers



School of Psychology, Social Work & Human Science
The University of West London
Paragon House
Boston Manor Road
Brentford
Middlesex
TW8 9GA

[insert date here]

Dear [insert name here]

I am writing to invite your school to participate in a study I am conducting as part of my PhD in Psychology, under the supervision of Dr Pauline Fox and Dr Maddie Ohl, at The University of West London. The purpose of this letter is to provide you with information about the project and what would be required should you agree to participate.

My research involves evaluating the impact of Pyramid clubs on the emotional health and educational performance of pupils in early secondary education. Pyramid clubs are designed to support shy, less confident children. They usually run for ten weeks and include fun activities to boost the confidence and social skills of club members. My research aims to build on previous evaluations of Pyramid clubs conducted in primary school settings. In the first instance, I would like to collect some quantitative data using questionnaires. To complete this phase of the research I would require access to the following information:

- Strengths and Difficulties Questionnaire (SDQ) teacher assessments for Pyramid group pupils at base-line, post-intervention and 12-month follow-up
- SDQ self-report ratings for Pyramid group pupils at base-line and post-intervention
- Well-being Questionnaire (WBQ) self-report ratings for Pyramid group pupils at base-line and post-intervention
- Ratings on the above measures for an equal number of matched pupils, not participating in Pyramid club who would act as a comparison group.

As my research also involves looking at the impact of socio-emotional interventions on other domains, specifically academic performance, I would additionally require access to pupils' academic monitoring data.

For this study, I would also like to collect some qualitative data on pupils' experiences of participating in the Pyramid club sessions. In order to do this, I would like to facilitate two focus groups once the 10-week programme is complete: one with Pyramid group participants and one with Pyramid club leaders.

All information you provide will be treated completely confidentially and the data will be de-identified. No names of any child or school will appear in any paper, thesis or report connected to this study. The data collected will only be retained for the requisite time period for the study and will be stored securely at The University of West London. Data protection guidelines, according to the Data Protection Act (1998) will be strictly adhered to. If you have any questions regarding this study, or would like additional information to assist you in reaching a decision about participation, please contact me by telephone: 07986 168432 or email at: michelle.jayman@uwl.ac.uk. You can also contact my supervisors, Dr Pauline Fox and Dr Maddie Ohl on: 0208 209 4127 or by email: pauline.fox@uwl.ac.uk / maddie.ohl@uwl.ac.uk

I very much look forward to hearing from you and to hopefully, confirm your participation in this research.

Yours sincerely

Michelle Jayman
PhD Researcher, The University of West London

CONSENT FORM

I have read the research details provided in the information letter regarding the proposed Pyramid club evaluation study to be conducted by Michelle Jayman, PhD Researcher from The University of West London. I have been able to ask any questions and receive satisfactory answers. I have been provided with additional information if requested.

YES NO

I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.

YES NO

I agree to take part in the above study and will provide the researcher access to the data requested:

- Strengths and Difficulties Questionnaire (SDQ) teacher assessments for Pyramid group pupils at base-line, post-intervention and 12-month follow-up
- SDQ self-report ratings for Pyramid group pupils at base-line and post-intervention
- Well-being Questionnaire (WBQ) self-report ratings for Pyramid group pupils at base-line and post-intervention
- Ratings on the above measures for an equal number of matched pupils, not participating in Pyramid club who would act as a comparison group
- Academic monitoring data for pupils in the intervention and comparison groups at base-line, post-intervention and 12-month follow-up.

YES NO

I agree to the researcher facilitating focus groups with Pyramid club participants and club leaders to collect data on their Pyramid club experience.

YES NO

Name of Head Teacher

Date

Signature

Name of School:

Address of school:

Researcher

Date

Signature

Appendix J: Study information and consent form for parents/carers



School of Psychology, Social Work & Human Science
The University of West London
Paragon House
Boston Manor Road
Brentford
Middlesex
TW8 9GA

[insert date here]

Dear Parent/ Carer

Pyramid Club Project Evaluation Research Parent/ Carer Information Sheet and opt out form

Your child's secondary school will be running a Year [insert Year group here] Pyramid club and has agreed to participate in a study to evaluate the project's effectiveness. This will be conducted by a researcher from The University of West London. Data will be collected from pupils attending Pyramid clubs and also from other Year [insert Year group here] pupils not attending the club.

Pyramid clubs support shy, less confident children in secondary school. They usually run for ten weeks and include fun activities to boost the confidence and social skills of club members. The purpose of this study is to evaluate the effectiveness of Pyramid clubs, specifically for [insert Year group here] children. In order to do this, the researcher needs to collect questionnaire data (used to select pupils for Pyramid clubs) before week one of the club, again after week 10 and once more, in 12-months' time, along with some academic monitoring information. Pupils who participate in Pyramid will also be asked some questions (together as a group) about their experience of attending the club, once all the sessions have finished.

All information provided will be treated completely confidentially and the data will be de-identified. No names of any child or school will appear in any paper, thesis or report connected to this research. You are free to withdraw your child's data at any point during the study without giving any reason.

The results of the study will be analysed and used to inform participating schools of the effectiveness of Pyramid clubs. Findings may also be submitted for inclusion in academic or educational journals.

If you would **not** like your child's data to be included in this study please sign and return the reply slip below to your child's school by [insert date here]. If you decline to participate in the research this will not affect your child's place at Pyramid club

If you have any questions regarding this study, or would like additional information please contact me by telephone: 07986 168432 or email at: michelle.jayman@uwl.ac.uk.

Yours sincerely

A handwritten signature in black ink that reads 'Michelle Jayman'.

Michelle Jayman
PhD Researcher, The University of West London

Participation opt out form
Only complete this form and return it to your child's school if you do not wish your child to take part in the above study

I **DO NOT** agree for my child to participate in the Pyramid club evaluation study

Name of child:

Class:

Signed..... (Parent/Carer)

Appendix K: Study information and consent form for Pyramid club participants



School of Psychology, Social Work & Human Science
The University of West London
Paragon House
Boston Manor Road
Brentford
Middlesex, TW8 9GA

[insert date here]

Dear Pyramid club member

Pyramid Club Evaluation Project - Information sheet for young people participants

Would you consider taking take part in some research?

Your school will be running the Year [insert Year group here] Pyramid club this [insert season here] term and has agreed to participate in a study to evaluate how well the project works. I am a researcher from The University of West London and would like to invite you to take part in the study as you will be attending the club.

Why am I doing the research?

The Pyramid project is a club that usually runs for ten weeks: it includes fun activities and games, and is a place where club members can meet new people. The purpose of this study is to evaluate the effectiveness of Pyramid clubs, specifically for pupils in Year [insert Year group here].

Who is being invited to participate and what will it involve?

Young people who attend Pyramid club and a group of pupils from [insert Year group here] who are not club members will be invited to take part in the study. The research will have no impact on the Pyramid sessions and would only require you to complete two questionnaires (before week one of the club, again after week 10 and once more, in 12-months' time). I would also need to look at the data the school collected before inviting you to join Pyramid club, along with some academic monitoring information. Another thing I would like to do is ask you and the other people who attend the club some questions, together as a group, once all the sessions have finished.

Confidentiality

All information provided by you and your school will be treated completely confidentially. When I write up the study everyone's names will be replaced by a code so no names of any pupil or school will appear in any paper, thesis or report connected to this research. You are free to withdraw your data at any point during the study without giving any reason.

What if I don't want to take part?

You are, of course, free to choose not to take part in the study and this will not affect whether you can attend Pyramid club.

Contact Information

If you have any questions or would like more information about this study please contact me by telephone: 07986 168432 or email at: michelle.jayman@uwl.ac.uk.

Yours sincerely

A handwritten signature in black ink that reads 'Michelle Jayman'.

Michelle Jayman
PhD Researcher, The University of West London

Consent Form

I have read and understood the information sheet enclosed and had any questions about the Pyramid club research answered to my satisfaction.

YES

NO

I give my consent to take part in the study and understand that I can withdraw from the research at any time without it affecting my participation in Pyramid club.

YES

NO

.....
Name of person participating in study (print name)

.....
Signature of above

Date.....