

Targeted vs universal provision of support in high-risk communities: comparison of characteristics in two populations recruited to parenting interventions

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Abstract

Purpose – To compare the characteristics of parents and children recruited for two randomised-controlled trials (RCTs) of parenting support in disadvantaged communities in Wales in order to explore the effects of community-based vs individual-based targeting in early prevention.

Design/methodology/approach – Parents from high-risk disadvantaged communities in Wales, where additional early intervention services were targeted as part of a Welsh Government early intervention strategy, were recruited to two RCTs of parenting interventions. In the first study parents of targeted three- and four-year-old children, who were screened, and deemed at risk of long-term problems, were recruited from Sure Start (SS) areas in Wales. In the second study parents of one- and two-year-old children living in disadvantaged Flying Start (FS) areas were recruited, with residence within the FS area being the only recruitment criterion.

Findings – FS areas are more strategically targeted as communities with a greater percentage of families with high levels of socio-economic disadvantage and associated risk than SS areas. Families in the toddler parenting trial based in FS areas, recruited without any additional screening, were experiencing higher levels of socio-economic deprivation, mental health problems and parenting stress as well as other known risks to child outcomes than the general population. However, when compared with the individually targeted population recruited for the SS study, they were shown to be experiencing significantly lower levels of these and other risks factors for poor child outcomes than the sample recruited for the SS trial where recruitment was based on known child risk factors. The paper discusses these findings and explores the implications of targeting by geographical area (community level targeting) alone vs targeting individual families by known risk factors. The findings suggest that screening measures would identify children at greatest risk of poor outcomes and whose families might benefit from additional targeted services. Suggestions for possible screening measures are also made.

Originality/value – This paper contributes to discussion about effective ways of allocating limited resources to best effect.

Keywords Sure Start, Flying Start, Deprivation, Risk-factors, Child-outcomes, Risk assessment, Parents, Children

Paper type Research paper

Introduction

Living in poverty increases the likelihood of poor long-term outcomes for children, including low academic attainment, delinquency, substance misuse and mental health problems (Kiernan and Mensah, 2009; Brooks-Gunn and Duncan, 1997). In the UK one in five children live in poverty (Eurochild, 2010), with the UK ranking lowest in Europe for child well-being, despite

being one of the wealthiest European countries (UNICEF, 2007). Wales has a higher proportion of families living in poverty than the rest of the UK with an estimated 200,000 children (one-third of all Welsh children aged 0-16) living in poverty (Welsh Government (WG), 2010, 2011; Winckler, 2009). Recognition of the increased risk of poor child outcomes associated with poverty has resulted in government strategies to reduce both poverty and its effects becoming a top priority in the UK with funding over the last 13 years from the Westminster (Belsky *et al.*, 2007) and Welsh Governments (WG, 2010, 2011) to provide additional services for the families of young children in identified disadvantages areas.

The rationale for targeting high risk communities for additional resources and/or support is that living in poverty is associated with both short- and longer-term negative outcomes for children, including poor physical health (Larson *et al.*, 2008; Hertzman and Weins, 1996; Everson *et al.*, 2002), poor mental health (Black *et al.*, 1982; Caspi *et al.*, 2000; Bruce *et al.*, 1991), delayed development (Duncan *et al.*, 1994; Kiernan and Mensah, 2009; Emerson and Einfeld, 2010), language delay (Hart and Risley, 1992), poor academic achievement (ESTYN, 2010; Feinstein *et al.*, 2004; WG, 2011) behavioural and emotional difficulties including conduct problems, (Caspi *et al.*, 2000; Webster-Stratton, 1998; Colman *et al.*, 2009; Kiernan and Mensah, 2009), attention-deficit hyperactivity disorder (Counts *et al.*, 2005) and physical abuse (Belsky *et al.*, 2007; Whipple and Webster-Stratton, 1991).

The relationship between developmental delay and behavioural problems is well established (Baker *et al.*, 2003) as is the relationship between behavioural problems in early childhood and subsequent adolescent delinquency, adult criminality, high levels of unemployment and or transient, poorly paid employment. Strong evidence for these longer-term effects comes from longitudinal studies such as the Dunedin study (Poulton *et al.*, 2002) the Cambridge study of delinquent development (Farrington, 1995) and the work of Patterson and colleagues from the Oregon Social Learning Centre, (Patterson *et al.*, 1989; Patterson and Stouthamer-Loeber, 1984; Loeber and Dishion, 1983).

There are well-documented intergenerational effects of disadvantage with negative child-outcomes in one generation, becoming a risk factor for the next generation of that family (Barrientos and DeJong, 2006; Farrington, 2000). Stress and maternal depression are more prevalent in low socio-economic status (SES) areas, and both are strongly associated with both perceived and actual levels of child behaviour problems (Webster-Stratton and Hammond, 1988; Hutchings *et al.*, 2007; Hay *et al.*, 2010).

The contribution of parenting style to poor child outcomes is well established, in particular the effects of harsh and/or inconsistent parenting (Amato and Fowler, 2002; Karreman *et al.*, 2006). However, there is growing evidence of the effectiveness of parenting support in changing this (Barrett, 2010; Barlow *et al.*, 2010; Furlong *et al.*, 2012). Intensive investment in enrichment and parenting support programmes has a significant positive effect on the family circumstances and produces long lasting improvements in outcomes for children living in poverty. This was most notably demonstrated by the Nurse Family Partnership intensive parent support programme for young, vulnerable parents delivered as part of the Head Start (HS) programme in the USA that now has a 30 year follow-up (Olds *et al.*, 1994, 1997, 1998). Parenting interventions reduce negative parenting and reduce child conduct problems (Hartman *et al.*, 2003). Furthermore structured parenting support increases positive parenting and reduces harsh and negative parenting, reversing problematic parenting patterns and improving child outcomes (Gardner *et al.*, 2010). Consequently the targeted early intervention support in high-risk communities in both USA and UK has included support to parents (Glass, 1999; Zigler and Valentine, 1979). The benefit of parenting support was specifically recognised in the WG Parenting Action Plan for Wales (WG, 2005a).

HS

The approach to early intervention in the USA has been different from that adopted in the UK with the HS programme, now over 40 years old, targeting high risk families within poor communities rather than targeting entire communities in which there is a greater proportion of families in need of intervention. Using this approach a number of interventions have shown

strong positive effects including the Nurse Family Partnership and the Incredible Years (IY) parent, child and teacher programmes. The Nurse Family Partnership (Olds, 2006) intervention, with over 30 years of follow-up, is one example. The programme targeted young high-risk first time mothers. The IY programmes are an evidence-based suite of programmes that, when delivered to targeted HS families, have been shown to increase positive parenting and reduce negative child behaviour (Webster-Stratton *et al.*, 2001; Webster-Stratton and Herman, 2010).

Sure Start (SS)

Unlike HS in the USA, the initial approach of the Westminster and WG, through their SS preschool provisions and subsequently the Welsh Flying Start (FS) provision, was to identify, and resource services in, high-risk communities. SS funding provided universal access services for pre-school children and their families within high-risk communities. Identification of SS areas was done locally and they were intended to be areas with high levels of deprivation, a high concentration of pre-school children and be geographically quite small, so that resources could be concentrated and accessible (Barnes, 2007; Glass, 1999). SS targeted the 20 per cent most deprived communities (Belsky *et al.*, 2007).

The initial evaluation of SS outcomes in England demonstrated that although mothers exhibited less negative parenting practice, the children of highest risk parents, including teen mothers, workless households and lone parents, did not benefit and had lower verbal ability, lower social-competence and greater levels of behaviour problems than their counterparts in comparison non-SS areas (Belsky *et al.*, 2007). Less disadvantaged families who had “more personal, social and economic resources available to them”, benefitting most, albeit only marginally (Belsky and Melhuish, 2007). Subsequent results from the English SS evaluation have shown better outcomes with no significant differences shown between subgroups, e.g. children from the poorest families did just as well as those from not so poor families (Melhuish *et al.*, 2008). A number of possible interpretations of these findings have been proposed including that the families with more personal resources were more effective at accessing the services. Although subsequent SS outcomes have shown better results (Melhuish *et al.*, 2008) this still leaves the question as to whether targeting by community is the most cost-effective way of supporting those children at greatest risk of poor long-term outcomes.

In Wales the widespread adoption of the IY parent programme (Webster-Stratton, 1998) in SS services created an opportunity for a randomised-controlled trial (RCT). However, as the aim was to replicate trials of the programme in US HS settings, this trial targeted families by child risk criteria. Families in Wales were identified by local health visitors (HVs) using a measure of child conduct problems. Eligible parents were those with a child aged three or four years who scored their child as within the clinical range on the Eyberg Child Behaviour Inventory (a well established and standardised measure of behavioural difficulties; Eyberg and Ross, 1978). Ninety-three per cent of the 164 families that met the inclusion criteria and agreed to be contacted by the research team met inclusion criteria on the measure of child conduct problems and signed up for the study (Hutchings *et al.*, 2007). Although only screened for levels of child behaviour problems these families also had high levels of other disadvantaging circumstances. The results of this trial are reported elsewhere (Hutchings *et al.*, 2007). This paper reports on the baseline characteristics.

FS

Following the SS initiative in Wales, and given concerns that allowing local identification of areas might not be targeting the most disadvantaged and high risk communities, in 2007 the WG established FS (WG, 2010, 2011). To enable effective allocation of scarce resources, the most deprived communities were targeted, encompassing approximately 25,000 0-3 year olds across Wales (Prabhakar *et al.*, 2008). FS areas were identified centrally by the WG, using strict criteria to ensure consistency. They were based on primary school catchment areas and selected by a combination of a measure of deprivation using the Welsh Index of Multiple Deprivation, (WIMD; WG, 2005b) and the level of free school meal entitlement within the catchment area. The WIMD combines eight indices of deprivation, income, employment,

housing, access to services, education, health, community safety and physical environment with indices of employment status and income carrying greater weight (WG, 2008).

As with SS, FS services were available to, and funded for, all parents of children between the ages of 0 and 3 living within the designated area. FS services were required to deliver four components: free high-quality childcare for all two year olds, increased HV support from a dedicated FS HV with a reduced caseload, parenting programmes and parent and child language and play sessions (WG, 2009-2010).

Method

Sample

In 2004 the Health Foundation funded an RCT of the IY basic parent programme with high-risk children living in SS areas in North and Mid Wales to evaluate the effectiveness of the programme in reducing child behaviour problems. Parents of 153 children were recruited. In 2007 the WG funded a small-scale RCT evaluation of the IY Toddler parenting programme (Webster-Stratton, 2008), targeting parents of one- and two-year-old children living in FS areas. The FS study aimed to evaluate the effectiveness of the IY toddler programme in FS sites across Wales. Local FS parent support staff recruited parents of 89 children.

The following section describes, and compares, the demographic and other characteristics of the SS and FS samples at recruitment and considers whether they represent those most at risk of poor outcomes.

Baseline measures collected for the two studies

Baseline characteristics for both samples were collected prior to randomisation during two home visits. Both studies used a battery of standardised and validated measures. These are described in detail in the SS study protocol (Hutchings *et al.*, 2004) and the FS study protocol (Griffith *et al.*, 2011).

Given the age difference in the children in the two trials, one and two year olds in the FS sample and three and four year olds in the SS sample, and the differences in trial entry criteria there were inevitably a number of measures selected for each trial that were unique to that trial. Described below are details of the common measures followed by a summary of the additional measures in each trial is given.

Common measures

The studies collected the following common measures including demographic information (Hutchings, 1996), measures of parental depression (Beck *et al.*, 1996) and stress (Abidin, 1995) and parent-child interactions were assessed using the Dyadic Parent-child Interaction Coding Schedule (DPICS; Eyberg and Robinson, 1981).

Personal Data and Health Questionnaire (PDHQ; Hutchings, 1996). The PDHQ is a semi-structured interview developed by Hutchings (1996) based on the work of Herbert (1993), and is used to obtain basic socio-demographic and general health data on family members. The interview is conducted with the primary carer, typically the mother and covers aspects of the child's health and development, including birth complications, mother's health during pregnancy and birth. The PDHQ also includes questions about other members of the household, assesses the quality of parent relationships (if applicable), quality of housing, income and level of primary carer's education.

Socio-economic disadvantage (SED6; Hutchings, 1996). Data for the SED6 is derived from answers provided on the PDHQ. The SED6 is designed to assess family SES. Six socio-economic risk factors are measured: employment status, marital status, number of children, maternal education, housing and area of residence (high/low crime); these were selected based on the findings of Dumas and Wahler (1983), and Rutter and Quinton (1977).

Observed parent behaviour

DPICS – Revised (DPICS – R; Eyberg and Robinson, 1981). This is an observational measure designed to assess the quality of parent-child social interaction. It incorporates 37 parent and

child behaviour categories, summarised in terms of: parent behaviours, child deviance, child responses to commands and parent and child affect. Coding is continuous and results in the total frequency of each behaviour per specified interval. Each behavioural category is clearly defined and accompanied by a series of examples, specific guidelines to aid discrimination between categories, and decision rules designed to aid decision making when there is uncertainty between categories. Webster-Stratton (1985) modified the DPICS-R for use with the IY programmes, and this was the version used in these studies.

Parental mental health/stress

Beck Depression Inventory (BDI) II (Beck et al., 1996). This is a 21-item inventory measuring the severity of depression, and is suitable for use with adults and adolescents aged 13 years and over. Items on the measure have been compiled based on descriptions of the experiences of depression sufferers and are consistent with the DSM-IV (American Psychiatric Association, 1994) criteria for the diagnosis of depression.

The Parenting Stress Index/short form (PSI/SF; Abidin, 1995). This 36-item inventory measures the stress experienced by the respondent in relation to their role as a parent of a child up to the age of 12 years. The PSI/SF contains three test subscales: Parental Distress (PD), Parent-Child Dysfunctional Interaction (P-CDI) and Difficult Child (DC). The PD subscale enquires about the distress that a parent is experiencing in his or her parental role. The P-CDI subscale focuses on the parent's perception that his or her child does not meet their expectations. The DC subscale measures the presence of basic behavioural characteristics that could make children either easy or difficult to manage.

Additional FS measure

The Schedule of Growing Skills (SOGS) II (Bellman et al., 1996). The SOGS is a developmental screening tool used in the FS study to assess the developmental trajectories of children from birth-five years of age. It is comprised of ten different skill areas: passive postural, active postural, locomotor, manipulative, visual, hearing and language, speech and language, interactive, self-care and additional skills. A cognitive skills score can also be computed. The SOGS was designed to be quick and easy to use, with administration time being approximately 20-30 minutes in total. It can be used by anyone working with children, including HVs and other individuals working within a SS/FS Centre. The SOGS was used both because it had been selected by the WG for evaluation of the FS project across Wales and also because the age of the children, one and two year olds, meant that they were too young for a reliable assessment of behavioural difficulties. So a measure of child developmental status was included because of the known association between developmental delay and subsequent behavioural difficulties (Baker et al., 2003).

Results

Demographics

We report first on a comparison of the two samples on the common measures. Primary carers of 89 children were recruited from eight FS areas across North, Mid and South Wales. The children had a mean age of 21.19 months (SD 6.92) at baseline and included 52 (58.5 per cent) male and 37 (41.5 per cent) female children. The 89 primary caregivers had a mean age of 28.97 (SD 6.72) years and two were male.

Primary carers of 153 children were recruited from 11 SS areas across Mid and North Wales. The children had a mean age of 46.13 months (SD 6.30) at baseline and included 89 (58.2 per cent) male and 64 (41.8 per cent) female children. The 153 primary caregivers had a mean age of 28.70 (SD 6.18) years and five were male.

Families were defined as having below average income if their total weekly income after housing costs fell below 60 per cent of the median income "for families of that type" (WG, 2010). At the time of recruitment to the FS trial (2006/2007) this equated to £322 for a family of two adults and two children (equivalent to £83 per adult and £78 per child). For the SS trial, (2003/2004) this

equated to £257 per week for a family of four (equivalent to £64 per person). Sixty-one per cent of families within the FS sample were living below the recognised poverty index and 89 per cent of SS sample.

Whilst the proportion of FS families living below the recognised poverty is considerably higher than the national average (35 per cent), it is lower than in the targeted high-risk sample recruited in the SS study (89 per cent: see Figure 2).

Multiple risk factors, assessed using SED6

A risk score was calculated for each family from the PDHQ (Hutchings, 1996) for both samples. A one-point score is given for the presence of each of the following risk factors; living in a workless household, lone parent household, a large family (three or more children), parent with no educational qualifications, housing that is of poor quality/overcrowded and living in an area of high crime (area crime status established via www.police.co.uk), see Table I. Fifty-five per cent of FS families had two or more risk factors present as compared with 80 per cent of SS families, a statistically significant difference.

When comparing the number of risk factors, as reported by the SED6 (socio-economic disadvantage indicator), again the SS sample had a higher mean score and a higher proportion of families experiencing two or more risk factors (Figure 1).

Whilst the sample recruited for the FS study had above population mean levels of disadvantaging circumstances, many of the study participants were not those whose children were most at-risk of poor outcomes, when, as demonstrated in Table I, baseline data from the FS sample was compared with that of the SS study.

Comparison of other measures

Parental depression. Levels of depression for both samples were assessed using the BDI II (Beck *et al.*, 1996) and are reported in Table II. The FS sample had a mean depression score of 10.82 (SD 9.44), which is defined as minimal depression (< 13). Seventy-one per cent of the sample scored below the cut-off for mild depression and 16 per cent of the sample reported clinically significant levels of depression (> 29). This compared with 37 per cent of the SS sample reporting clinically significant levels of depression.

Parenting stress. The mean total score for parenting stress obtained from the PSI/SF (Abidin, 1995) for the FS sample was 76.01 (SD 20.54), which is below the cut-off for clinically significant levels of stress of 90 (Table II). For the SS sample the mean score was 100.36 (SD 23.46) which is above the clinical cut-off of 90. Twenty-one per cent of FS parents reported clinically significant levels of stress (> 90) compared with 67 per cent of SS parents.

Table I Comparison of demographic data for each sample

<i>Demographics</i>	<i>FS sample</i>	<i>SS sample</i>	<i>p-value</i>
<i>N</i>	89	153	
Child gender			0.287
Male, <i>n</i> (%)	52 (58.4)	89 (58.2)	
Female, <i>n</i> (%)	37 (41.6)	64 (41.8)	
Child age in months, mean (SD)	21.19 (6.92)	46.13 (6.30)	<0.001*
Parent gender			0.955
Female, <i>n</i> (%)	87 (97.8)	148 (96.7)	
Male, <i>n</i> (%)	2 (2.2)	5 (3.3)	
Parent age in years, mean (SD)	28.97 (6.72)	28.70 (6.18)	0.762
Parent age at birth of first child, mean (SD)	22.00 (5.41)	21.10 (4.65)	0.196
SED6 ≥ 2/6, <i>n</i> (%)	49 (55.0)	123 (80.4)	0.006*
SED6, mean (SD)	1.99 (1.60)	2.91 (1.47)	<0.001*
Below poverty level, <i>n</i> (%)	54 (60.7)	137 (89.5)	0.494

Note: *Significant difference at $p < 0.01$

Figure 1 Percentage of SS and FS study families living below the nationally recognised poverty line

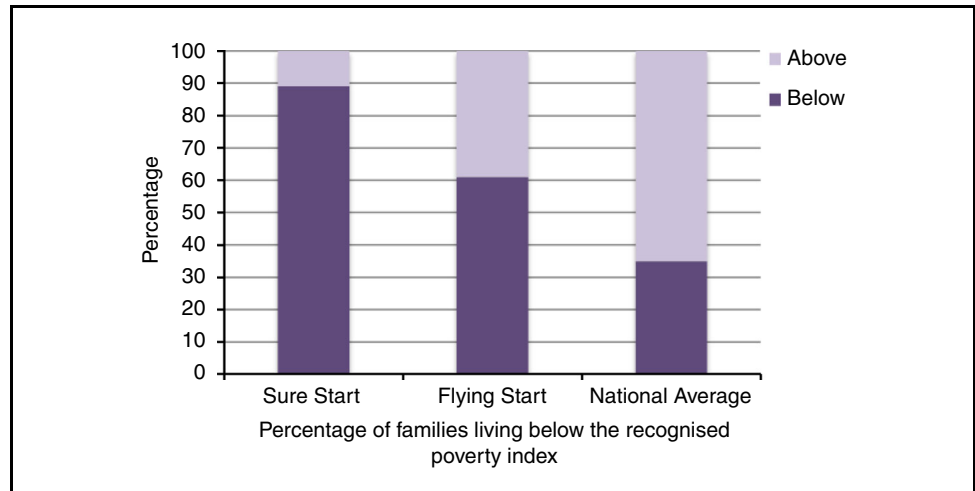


Table II Comparison of baseline depression, stress and observed negative parenting scores for SS and FS parents

	Cut-off	FS sample	SS sample	p-value	FS clinical significance	SS clinical significance
BDI II total	13	10.82 (9.44)	16.48 (10.39)	<0.001*	16%	37%
PSI total	90	76.01 (20.54)	100.36 (23.46)	<0.001*	21%	67%
DPICS – critical parenting	n/a	20.71 (18.40)	21.37 (16.52)	0.790	n/a	n/a

Note: *Significant difference at $p < 0.001$

Parental mental health, stress and risk. Comparing the depression scores of the FS sample with the targeted SS sample, the mean total scores obtained from the BDI (Beck *et al.*, 1996) at baseline were significantly different (see Table II). SS families had a significantly higher mean score than FS families, with many more reporting clinically significant levels of depression.

The same was true for the PSI/SF scores (Abidin, 1995), where similarly the mean total stress score for the SS sample was significantly higher than the FS sample, and when using a clinical cut-off of 90, a much higher proportion of the SS sample were reporting scores in the clinically significant range than the FS families (see Table II).

Child development. The SOGS II (Bellman *et al.*, 1996) was used to assess the 89 FS children for developmental delay. Results from the SOGS assessments were converted into developmental quotient (DQ) scores using a formula developed by Hutchings *et al.* (see Williams *et al.*, 2013) and validated by Williams (2010). A child is considered to have delayed development if they score below a DQ of 85 on two or more of the subscales of the measure. The proportion of children functioning within, above and below normal limits on each subscale is illustrated in Figure 2.

Taking the total DQ score, 20 per cent of children are functioning below the DQ 85 cut-off. Further analysis comparing the sample on key measures of risk indicates that there were differences between families of children who are developmentally delayed at baseline and those who are not (Table III).

Families of children experiencing delay reported higher levels of depression and stress, increased numbers of SED risk-factors, increased levels of observed negative parenting and lower levels of positive parenting when compared with their peers who were not identified as

Figure 2 Proportion of children above, below and within the normal range of functioning across subscales measured using the SOGS

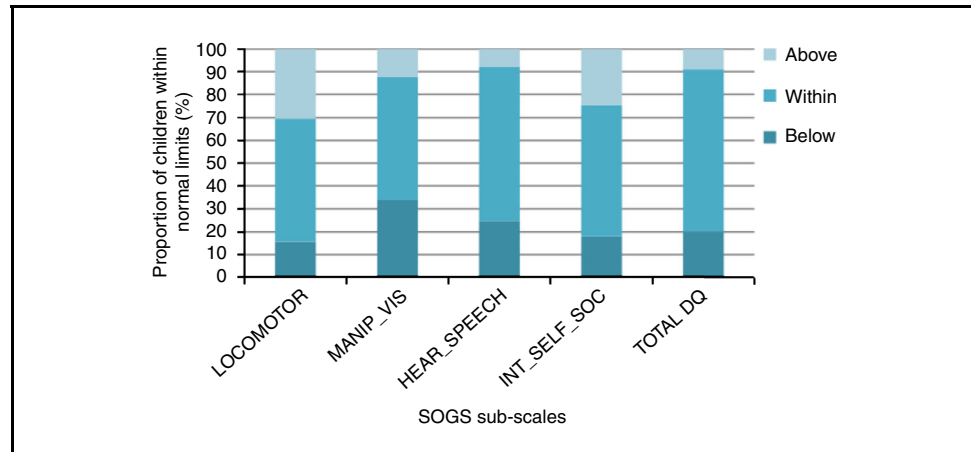


Table III Comparison of risk categories for families of delayed versus non-delayed children at baseline

Measure	Development delay sub-sample mean (SD)	No-development delay sub-sample mean (SD)	p-value	Effect size (r)	95% CI
BDI II	12.70 (10.64)	10.28 (9.07)	0.314	0.12	(-7.19 to 2.34)
SED6	2.40 (1.67)	1.87 (1.56)	0.193	0.14	(-1.33 to 0.27)
PSI/SF	83.90 (25.04)	73.48 (18.41)	0.04*	0.21	(-20.54 to 0.30)
Positive parenting (DPICS)	80.40 (48.70)	83.09 (29.61)	0.791	0.03	(-17.48 to 22.87)
Negative parenting (DPICS)	27.40 (26.30)	18.81 (15.27)	0.244	0.28	(-23.61-6.42 to 1.48)

Note: Using *r* as effect size, where 0.3 is cut-off for medium effect
*Significant difference at $p < 0.05$

having developmental delay. However, independent *t*-tests revealed that only parent reported stress was at a significantly higher level for parents of children who were delayed.

Further exploration revealed some significant associations between measures of parent stress, mental health and risk, as illustrated in Table IV.

As expected, there are strong associations between measures of parental mental health and parenting stress. In addition both parental stress and poverty status are the factors that are most strongly associated with poor child developmental status. Developmental delay is a risk for subsequent behavioural difficulties (Baker *et al.*, 2003) and was therefore included as an outcome measure for the FS toddler trial in which children were too young to be assessed for behavioural difficulties. The associations identified between developmental delay and these other risk factors provide further evidence that overall the FS sample did not represent the population of children most at risk of poor outcomes.

Table IV Correlation of main factors

	PSI-SF	BDI II	SOGS II	WEMWBS	Below poverty index
PSI-SF	.	0.474**	-0.257*	-0.573**	0.181
BDI II		.	-0.018	-0.679**	0.171
SOGS II			.	0.099	-0.252*
WEMWBS				.	-0.086

Notes: *,**Correlation is significant at the 0.05 level and 0.01 level (two-tailed), respectively

Discussion

Families living in designated FS areas with children aged 12-36 months were recruited for participation in an RCT of an early parenting programme. All families resided in FS areas and families were experiencing higher levels of poverty, were younger parents at the birth of their first child, were more reliant on benefits and social housing and had fewer qualifications than national averages for families. In addition, some parents were experiencing clinically significant levels of stress (21 per cent) and depression (16 per cent) and 20 per cent of children showed evidence of significant developmental delay using a simple screening tool. The FS method of geographical targeting recruited families who were reporting several of the risk-factors associated with living in deprived areas, indicating that targeting by locality is an effective way of reaching some high-risk families. However, when the FS sample was compared with the targeted SS sample (Hutchings *et al.*, 2007), which was identified by HVs as having a known risk factor, in this case challenging child behaviour, a sample with significantly higher levels of many other risk factors was recruited. This demonstrates that targeting by locality alone resulted in the recruitment of a lower risk sample in terms of perceived risk to negative outcomes. Consequently, despite the WG intention of overcoming problems of targeting by locality in the FS programme, like the English SS project, the problem of take-up of services by those most in need was not addressed. The comparison of data from the two samples demonstrates the benefits of using additional targeting measures, such as SED status, parental stress and, depending on the child's age, a developmental assessment or measure of child behavioural difficulties in addition to geographical targeting.

The provision of additional resources to identified geographical areas provides healthcare professionals with the opportunity to administer more specific targeted interventions. However, different targeting measures will be needed depending on the age of the children. Children in the FS sample were younger than those in the SS sample, and a measure of child conduct (e.g. Eyberg and Ross, 1978), as was used in the SS study, would not have been suitable for identifying families within the FS catchment areas. However, there are several other potentially suitable tools for the identification of children in need of additional services, including income levels, parental stress and depression and child developmental status all of which are associated with increased risk. FS HVs already use the SOGS II (Bellman *et al.*, 1996, 2008) developmental measure with children on their second and third birthday and data collected from this study indicates that the SOGS could help to identify children at greatest risk for poor outcomes, both in terms of the child's developmental needs and because, as this and other studies demonstrate, this also identifies those families experiencing most stress, depression and poverty (Emerson and Einfeld, 2010). The SS study found that child behaviour problems were highly correlated with parent stress and depression. The FS study suggests that measures of parental depression and stress are also associated with a measure of developmental delay (Hutchings *et al.*, 2011).

An additional problem that was not addressed by either of these studies, or by WG policies, is that only half of children living in poverty in Wales live in the most deprived communities (Melhuish and Hall, 2007). Therefore, even successful targeting within FS or SS areas excludes more than half of the high-risk children who could potentially benefit from intervention, and a strategy is needed to ensure delivery of services to high-risk families living outside of high-risk postcodes. There is also the added limitation of stigmatising disadvantaged families. Families are much less likely to access services if they feel they are being stigmatised (Melhuish and Hall, 2007).

Things have moved on in England and, in addition to area based support through children's centres, the Westminster Government is now undertaking an RCT of the Nurse Family Partnership programme (Olds, 2006) known in the UK as the Family Nurse Partnership. This is now being delivered to identify high-risk, first time mothers in the UK during pregnancy and the first two years of the child's life. The UK government initially launched a pilot study in ten centres with early results suggesting reductions in smoking and alcohol consumption in pregnant women, increased parental competence in both mothers and fathers and increased incidence and prolonged use, of breastfeeding (Barnes *et al.*, 2008). Data are available on child outcomes up to age 24 months and findings indicate that the number of consecutive pregnancies was

reduced, positive parenting practices were evident and parenting competencies had improved (Barnes *et al.*, 2011). This programme has now been rolled out to a further 40 areas and is the subject of a rigorous RCT. This policy decision, like the results reported in this paper, suggests the need to target scarce resources on those most in need.

At the present time, when the UK Government is making considerable cuts in public funding and alterations to the UK benefit system, it is important that resources are targeted on those most in need to ensure that services are both effective and cost effective.

Summary of policy and practice implications

- Geographical targeting effectively reaches some families in need of services.
- Additional targeting within geographical areas using simple screens for risk factors can result in the identification of families with a greater need for intervention.
- Simple screening for factors associated with poor child outcomes such as poverty, parental stress, poor parental mental health and delayed child development should be utilised to allocate services and resources more effectively.

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