Do crime rates predict the outcome of parenting programmes for parents of 'high-risk' preschool children?

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Abstract

Early-onset conduct problems predict antisocial and criminal behaviour in adolescence and adulthood, including violent offending, and these problems occur with greater frequency in disadvantaged communities. Parenting is implicated in the development and maintenance of these problems. To address them the government in England and Wales is funding Sure Start services, but so far it has not specified that evidence-based programmes should be delivered. Sure Start areas were targeted to provide services for high-risk families in disadvantaged areas. Certain family characteristics such as low income, low education level, isolation, teenage pregnancy, high stress levels, single parenthood (or high levels of marital discord), depression, parental psychiatric illness or criminal history, and inconsistent, or harsh, parenting practices put children at high risk of developing conduct disorder and perpetuating particular family characteristics. Within disadvantaged areas there is considerable variation in crime levels. The purpose of this paper is to establish whether crime rates predict outcomes from a parenting intervention, the Webster-Stratton Incredible Years (IY) BASIC Parenting Programme, delivered in 11 Sure Start areas across north and mid-Wales. Parent participation in the programme demonstrated significant improvements in both child and parent behaviour. The current paper reports on the analysis of the effect of community crime levels on outcome. Regression analyses showed that crime rates were not predictive of outcome: the BASIC programme is effective in areas with both higher and lower crime levels.

ANTISOCIAL behaviour is a growing problem (Scott, 2002), which, although it becomes most apparent in teenage children, generally has its origins in early childhood and is often associated with socioeconomic disadvantage and conduct disorder (CD). Current figures show that one in seven (15 per cent) of five-year-olds display antisocial behaviour (Scott, 2002). Higher rates of CD are found in families with single parents, frequent changes of parental figures, parental psychopathology, parental substance abuse, marital problems and poor parenting skills (Bloomquist & Schnell, 2002). A UK study of children living in disadvantaged areas estimated that 20 per cent were conduct disordered (Attride-Stirling *et al.*, 2000) and Webster-Stratton (1998b) found that 35 per cent of the 500 preschool children from a deprived Head Start community, in Seattle, were above the established clinical cut-off point for conduct problems.

Early-onset conduct problems or CD are among the best predictors of antisocial and criminal behaviour in adolescence and adulthood (Farrington, 1995, 1996; Broidy *et al.*, 2003). In areas of high social disadvantage, where these problems occur with greater frequency, they can be maintained by factors within both family and broader community environments. Parental criminality is a risk factor for conduct-disordered behaviour along with marital discord, large family size, low socioeconomic status, maternal psychiatric disorder and child welfare intervention (Farrington, 1995; Rutter, 1978; Webster-Stratton, 1999) and also parental substance abuse (Patterson *et al.*, 1989). Families living in an area of high crime have greater expo-

sure to criminal peers and environments, and have increased likelihood of participating in criminal activities (Fergusson *et al.*, 2004). Up to 40 per cent of children diagnosed with CD develop later problem behaviour such as drug misuse, criminal tendencies and violent behaviour (Coid, 2003).

In terms of the economic impact of CD, there are severe financial implications for the individual, family and society if such childhood disorders are not prevented. Knapp *et al.* (1999) report an average cost per family of £15,382 per year in increased utilisation of health, social, education and legal services, which Scott estimates could amount to up to £1 million over an individual's lifetime (Scott, Knapp *et al.*, 2001). Much of this cost is borne by publicly funded services, especially in areas of social exclusion where families are already most likely to rely upon state-provided services (Scott, Knapp *et al.*, 2001; Muntz *et al.*, 2004).

The role of parenting programmes in the prevention of delinquency and crime

A large body of research has demonstrated that, while some children are harder to parent than others, parenting plays a big part in both the development and maintenance of CD (Patterson, 1982). Many children learn or establish problem behaviour because their parents lack key parenting skills and/or use them inconsistently (Gardner *et al.*, 1999; Patterson, 1982). However, parents are also part of the solution and behaviourally based parenting programmes to improve parenting skills, developed over the last forty years, have been shown to be the most effective interventions for childhood CD, with very little else having been shown to work. For example, in the UK fewer than one in five children with behavioural problems are seen by specialist services, and less than half of those who do receive a service receive an evidence-based intervention (Hutchings, Gardner *et al.*, 2004; Hutchings & Lane, 2005). Furthermore, many programmes used to tackle antisocial behaviour do not work and in some cases can make problems worse (Sherman, 1997). Early home visits, although helpful for some families, have been demonstrated to be generally ineffective (Appelbaum & Sweet, 2004).

Early findings suggested that parenting programmes for children with CD were less effective with families living in high-risk communities, that is communities with many families having characteristics that promote CD and antisocial behaviour (for example, Dumas & Wahler, 1983). However, as Patterson and Forgatch (1995) have demonstrated, the effects on children of living in stressful communities are mediated through their impact on their parents and more recent studies that have addressed the issues associated with recruiting and keeping these families have failed to find any significant association between disadvantage and poor outcome (Reid & Webster-Stratton, 2001; Scott, 2005). There is considerable variation between programmes and it is important to use empirically validated programmes delivered with fidelity. Also, wherever possible, children at risk must be identified at a young age since programmes delivered before the problems become established are also more effective (see Taylor and Biglan (1998) or Hutchings, Gardner *et al.* (2004) for reviews of programme factors associated with better outcomes).

Government policy in relation to antisocial behaviour

The government is now recognising the need to deal with growing numbers of antisocial young people by tackling the causes and is spending billions of pounds on programmes. One strategy is investment in the Sure Start early preventive parenting support for the families of preschool children living in disadvantaged communities. However, in England the government has failed to give any direction to Sure Start local programme providers about what services are effective in supporting families and reducing the risk of CD and antisocial behaviour. As a consequence, there has been wide variation in service provision and the preliminary finding from a multimillion pound evaluation of Sure Start (Abrams, 2005; NESS, 2004) has so far failed to demonstrate its effectiveness,

particularly with families whose children are most at risk of long-term antisocial behaviour.

Identifying effective interventions

Service planners and policy makers need to know which parenting programmes are most effective, and with which target populations, so that they can ensure that public money is well spent. Programme reviews, for example the review undertaken by the Center for Violence Prevention at the University of Colorado (Mihalic *et al.*, 2002) should be consulted. The Center was funded by the US government to identify effective model violence prevention programmes. Criteria for their Blueprint list were stringent, including long-term follow-up, randomised controlled trials, independent replication and, most importantly, that they were published in sufficient detail to enable other people to deliver them in an evidence-based way. After reviewing over 600 programmes, only 11 model or Blueprint programmes were identified as effective in treating children already showing signs of delinquent or antisocial behaviour.

These 11 model programmes include the Incredible Years (IY) parenting programme, an empirically validated programme for both the treatment and prevention of conduct disorders. The IY programme incorporates all of the factors identified as improving outcomes from parent training in the Taylor and Biglan (1988) and Hutchings, Gardner *et al.* (2004) reviews and is the intervention implemented in this study.

The IY parenting programme

High-risk families, who are at greatest risk of failure to benefit from parenting programmes, but with the highest risk of raising children with CD and antisocial behaviour, have sometimes been blamed for being hard to engage, making it difficult to implement effective services (Webster-Stratton, 1998a). However, Webster-Stratton (1998b) addressed barriers to attendance, believing that non-attendance was a problem in the programme, not in the participants, and retained 88 per cent of 264 families in her preventive study using the IY programme with Head Start families in Seattle.

Over the years the IY programme has been replicated in research and service settings in several countries including Canada, England and Norway (e.g. Scott, Spender *et al.*, 2001 and see also the IY website, www.incredibleyears.com). It has demonstrated positive long-term outcomes. It also has the tools to ensure that it can be delivered faithfully (Hutchings *et al.*, 2004).

The IY BASIC Parent Training Programme (Webster-Stratton & Hancock, 1998) improves parenting skills and child behaviour and increases parent–child interaction by promoting positive parenting through reinforcement (Webster-Stratton, 1998b). It is grounded in social learning theory. Role play, modelling, discussion, practising skills at home and analysing video material are key elements in these programmes. Parents set goals and learn to build positive relationships by practising skills for preventing problem behaviour, for example rewarding positive behaviour, setting clear expectations and applying consistent gentle consequences for problem behaviour.

Implementing the IY programmes in Wales

The IY programme was selected for a large-scale randomised controlled research trial in north Wales with preschool children at risk of developing CD and antisocial behaviour, living in Sure Start areas, because of its impressive results with similar populations, the availability of training and support in the UK and because it was already running in most of the Sure Start centres. The IY programme has been developed in north Wales through the provision of training, consultation and support and 11 Sure Start services in north and mid-Wales had begun using the programme (Hutchings & Webster-Stratton, 2004). This provided an opportunity to research the effectiveness of the programme, in a preventive capacity, with children at high risk living in these areas. Health visitors approached families thought to fulfil the criteria of low income, living in a designated Sure Start (disadvantaged) area with a pre-

schooler displaying some problem behaviour. Family details were passed on to the research team if the family consented. The research team then confirmed criteria status after obtaining written informed consent, ensuring that no ethical issues were raised. The research had full ethical approval and confidentiality was assured. Parents attended the 12-session parent group for 2.5 hours per week. The evaluation was conducted through questionnaires and observation of parent–child interaction. Intervention families were seen at baseline and 6, 12 and 18 months later, with the IY Parenting Programme being delivered between baseline and the 6-month follow-up. Control families were seen at baseline and 6 months and were then offered the programme.

Steps were taken to ensure that the programme was delivered with fidelity by addressing barriers to attendance such as transport, meals and crèche facilities and by weekly supervision of the group leaders by the first author, a certified mentor for the programme.

It was anticipated that outcomes would be positive due to the implementation of the evidence-based programme and the feedback from local parents who had attended the programme. This was confirmed by the evaluation, which demonstrated excellent results, including changes in parenting skills and child problem behaviour measured by parent report and direct observation in the home (Hutchings & Bywater, submitted). The programme was well received, with 86 per cent of families attending at least half of the 12 sessions and 100 per cent of families reporting good or high levels of satisfaction with the programme (Bywater *et al.*, in preparation).

The results from the first follow-up at six months are being reported elsewhere (Hutchings & Bywater, submitted).

Community crime rates as predictors of outcome

In this paper we investigate whether community crime levels, which can be considered as one important measure of relative community stress, are associated with poorer outcomes. Although all of the communities were experiencing some degree of socioeconomic disadvantage there was, within the 11 Sure Start areas, considerable variation in crime levels. As previously discussed, these can be a predictor of both greater levels of problems and of poorer outcomes from intervention. This paper reports on the crime rates for the 11 Sure Start areas and explores their relation to the main outcome measures. Four different crime categories are examined: 'all crime recorded', 'violent crime', 'violence against the person' and 'drug offences'.

Methods

Target families were recruited by local health visitors, working within each of the 11 Sure Start areas. The families were of low income with a child aged three or four years demonstrating signs of early CD. The health visitors administered the Eyberg Child Behaviour Inventory (ECBI; Eyberg & Ross, 1978), a parent report measure of child behaviour often used in similar studies. If the child scored above the clinical cut-off on this measure the health visitors asked whether the family would be interested in participating in research into the effectiveness of a parenting programme. If the family agreed to consider participating their details were passed to the research team. Contact was initiated by telephone and followed up by a home visit to discuss the research and the parenting group. Of the 240 names forwarded to the research team 157 (65 per cent) agreed to participate. Reasons for non-participation (largest percentage first) ranged from family commitments, no reason, work commitments, pressure from partner to decline, could not complete baseline measures, not keen on course, not keen on the observation session. After completion of baseline measures and controlling for age and sex, families were randomised into two conditions, intervention ($N = 107$) and (waiting list) control ($N = 50$). Control families were seen at baseline and again six months later. They were then offered the same parenting programme. This paper utilises the data from intervention groups only.

Demographic data

Risk factors identified by Webster-Stratton (1999) include family poverty, single parenthood, teenage parenthood, parental psychotic illness and parental drug abuse or criminality. These factors were quantified by administration of the Personal Data and Health Questionnaire (PDHQ; Hutchings, 1996). Intervention and control groups did not differ significantly on the amount of risk factors for developing CD (identified by Webster-Stratton, 1999, e.g. family poverty, teenage and single parenthood, etc. – see the appendix) or on demographics such as housing quality, maternal education, number of children, etc. As expected, the families had high levels of stressors, depression, marital discord or single parenthood, parental criminality or substance abuse.

A large number of measures were used in the main study (see Hutchings, Eade *et al.*, 2004) and are being reported on elsewhere (Hutchings & Bywater, submitted). The measures were selected to provide objective and parent report outcome measures of both parents' and children's functioning and behaviour. This paper utilises data from the observation of parenting behaviour and parent-reported child outcome data.

The parenting measure: Dyadic Parent–Child Interaction Coding System (DPICS; Eyberg & Robinson, 1981)

This is an observational measure designed to assess the quality of parent–child social interaction. Thirty-five parent and child behaviour categories are included and summarised in terms of parent behaviour, child deviance, child responses to commands and parent and child affect. Observational coding is continuous and records the total frequency of each behaviour per specified interval. Results from one parent summary variable, positive parenting, which includes praise, both labelled and unlabelled, positive affect (smiling or laughing), physically positive behaviour and problem solving is used in the analysis reported below. Parents were observed interacting with their child in their own home for 30 minutes and frequency counts of behaviour taken. Reliability checks of observational assessment were carried out at random by a second coder (20 per cent of visits). A significant improvement in positive parenting was found for the intervention group only (Gardner *et al.*, in preparation).

The child behaviour measure: Eyberg Child Behavior Inventory (ECBI; Eyberg, 1980; Eyberg & Ross, 1978)

This is a 36-item inventory completed by the parent for the assessment of problem behaviour occurring in children from age 2–16 years. Each behaviour is rated on two scales: a seven-point intensity scale that measures how often the behaviour is perceived to occur and a yes–no problem scale that identifies whether the behaviour is currently seen as a problem for the parent. The ECBI has been used extensively within the field of parent training intervention. Following Webster-Stratton (1998b) the ECBI was used as both a selection measure to identify participants for entry into the study, and as an outcome measure to evaluate the intervention. It is a self-administered parent report measure and takes approximately 10 minutes to complete. As with observational measure on parenting significant improvements were reported on both ECBI scales for the intervention group only (Hutchings & Bywater, submitted).

Do crime rates influence outcome?

The question addressed in this paper is whether variations in community crime levels influenced outcome as assessed by the DPICS and the ECBI. Although all of the families lived in Sure Start areas, by definition areas of social disadvantage, there were considerable variations between crime rates within these communities. Crime rates included four categories: all crime recorded, violent crime, violence against a person and drug offences.

Crime rates for the participating areas

Crime statistics for the areas where the research groups were run are shown in Table 1. Groups are listed from highest to lowest

under the 'all crime recorded' category. Crime rates used in the current analyses are calculated as 'crimes per thousand population' as, given the variation in community size from small deprived rural communities to larger towns, this is the most appropriate way of comparing crime across areas. Table 1 also includes a breakdown of counties for crime rate comparisons. Analyses were be performed on each of the four categories of crime outlined in Table 1 since each category incorporates factors that have been shown to increase the risk of early onset of CD. Demographic data was obtained from local government sources for population by ward and crime rates from police forces for the equivalent police sections for areas where the groups had been run and the families resided (see acknowledgements for further details).

Crime level findings

One-way ANOVA analyses were conducted to establish whether any differences existed between the group means at follow-up on the two outcome measures, namely the ECBI (intensity and problem scores) and the DPICS (positive parenting). No significant differences were found for either measure at follow-up between the 12 groups. Linear regression analyses were conducted on the four crime categories to establish possible predictors of the two outcome measures for the 12 groups. Regression analyses predict a response variable, in this case, child behaviour and positive parenting, based on contributions from a number of other explanatory factors. Crime rates did not predict group outcome at follow-up. The results are summarised in Table 2.

	Offences per 1000 population				Actual number of offences			
	ACR	VC	VAP	DO	ACR	VC	VAP	DO
Group 1	381.3	76.5	72.3	8.8	1,002	201	190	23
Group 2	220.7	48.3	46.0	15.4	2,121	464	442	148
Group 3	199.2	42.3	39.1	6.4	4,958	1,054	973	159
Group 4	193.5	51.7	48.5	14.7	1,213	324	304	92
Group 5	190.5	32.4	30.2	6.9	888	151	141	32
Group6/7	175.2	32.6	30.6	7.6	2,404	448	420	104
Group 8	168.9	49.9	48.2	8.6	1,821	538	518	92
Group 9	152.1	29.1	27.6	4.5	3,056	585	555	90
Group 10	141.6	28.6	26.7	8.7	1,591	321	300	98
Group 11	77.4	21.1	16.1	2.9	374	102	78	14
Group 12	73.2	20.2	19.0	1.2	2,730	755	709	46
County 1	113.2	23.2	21.5	3.0	10,640	2,178	2,020	286
County 2	95.2	18.3	17.3	2.2	10,502	2,014	1907	242
County 3	78.4	14.9	14.0	2.8	5,330	1,012	953	190
County 4	76.5	15.7	14.6	3.3	8,965	1,837	1710	387
County 5	72.4	20.1	18.8	1.2	2,730	760	711	46
County 6	52.7	14.8	14.2	4.6	6,740	1,890	1,812	592
England & Wales	112.7	21.1	18.2	2.7	5,927,514	1,107,737	955,407	140,971

Table 1: Crime rates

Notes:
ACR all crime recorded
VC violent crime (sum of violence against the person, robbery and sexual offences)
VAP violence against the person
DO drug offences
This table records where crimes occurred; they were not necessarily committed by those living in the specified areas. Crime rate was calculated by using crime data for the 2003/4 financial year and population data from the 2001 census.

Conclusions

None of the four categories of crime significantly predicted group outcome on either the child behaviour or parent behaviour for the intervention group. Therefore, given the overall effectiveness of the programme, the analysis reported here suggests that the IY parenting programme is effective across Sure Start communities regardless of crime levels. By using the evidence-based IY programme, families from more highly stressed crime areas can achieve outcomes as good as those achieved by families from a lower crime area. These results confirm those of Webster-Stratton (1998b) and Reid and Webster-Stratton (2001), who found no effect of disadvantage when working with families in similar high-risk communities: significant behavioural improvements can be produced with the correct intervention even in disadvantaged areas. If all of the issues of access are addressed and if the programme is delivered collaboratively, focusing on parent goals, good outcomes can be achieved regardless of broader community risk factors.

Discussion

Early behavioural difficulties, which predict later delinquency and criminal behaviour, are a major problem. Parenting is implicated in both the development and maintenance of these problems and parenting programmes can contribute to the solution. Early parenting programmes were less effective at engaging and retaining parents living in disadvantaged and stressful environments; however, as Patterson and Forgatch (1995) have demonstrated, the effect on the child is mediated through its impact on the parent. Webster-Stratton (1998a) identified the factors that are needed to make parenting programmes accessible to such families and her IY programme incorporates all of the components known to increase programme effectiveness (Hutchings *et al.*, 2004). She reports that disadvantaged families can do just as well, or sometimes better, than families not at risk (Reid & Webster-Stratton, 2001). The analysis reported here confirms that, taking community crime levels as an indicator of risk, levels of crime do not predict outcomes from this programme when delivered in Wales, that is, the IY BASIC programme is as effective in areas with high crime levels as it is in areas with lower crime levels.

We have not been able to compare the high-risk Sure Start families with families from less disadvantaged communities in this study. However, the fact that higher crime rates did not affect outcomes for the intervention groups when all participants were low-income families living within disadvantaged areas demonstrates that the IY basic

Predictor	Variable	B	SE B	b	R^2
All crime recorded	Positive parenting	-5.65	.04	-.37	.05
	Eyberg intensity	-2.49	.06	-.13	.08
	Eyberg problem	-1.62	.02	-.33	.02
Violent crime	Positive parenting	-0.22	.23	-.29	.004
	Eyberg intensity	0.27	.29	.28	.01
	Eyberg problem	-0.12	.07	-.48	.16
Violence against person	Positive parenting	-0.23	.23	-.31	.003
	Eyberg intensity	-0.24	.3	-.24	.04
	Eyberg problem	-0.11	.07	-.44	.11
Drug offences	Positive parenting	-0.65	.88	-.23	.04
	Eyberg intensity	-0.23	1.12	-.06	.1
	Eyberg problem	-0.18	.29	-.19	.06

Table 2: Summary of regression analyses for crime rates and outcome measures for the 12 groups

parenting programme, delivered by Sure Start staff, has been successful in a variety of settings across north and mid-Wales. This confirms the findings of Hartman *et al.* (2003) who state that 'as mothers are given opportunities to acquire further positive parenting skills, levels of economic disadvantage become less important in predicting treatment success or failure' (p.396).

If the present finding is maintained at later follow-up, the outcomes should have an impact on not only family life, by reducing risk factors such as harsh or critical parenting and increasing protective factors such as positive parenting, but on the community as a whole by reducing local crime (as found by Sherman, 1997). Furthermore, costs to the health, social, education and legal services should be reduced by preventive intervention in comparison to more costly treatment and service usage. An economic cost analysis also forms part of the main study.

Given the lack of clear findings from the Sure Start evaluation in England, where many programmes without an evidence base have been delivered (Abrams, 2005; NESS, 2004), the results from this study have important implications for government. These are that there are evidence-based programmes available that reduce the risk of conduct disorder and antisocial behaviour. Some of these, like the IY programme, are effective in targeting and engaging families in high-risk communities. Sure Start services can be encouraged to use such programmes when training and support are provided and when they do so excellent results are achieved, despite the levels of risk within those communities. It is time for government to take a lead and ensure that its money is well spent.

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All population data are from the 2001 census. Population data were provided from the following sources: www.neighbourhood.statistics.gov.uk; Denbighshire County Council by request through www.denbighshire.gov.uk; Conwy County Borough Council by request through www.conwy.gov.uk; Gwynedd Council by request through www.gwynedd.gov.uk; Anglesey Council by request through www.ynysmon.gov.uk.

Official data on counties and England and Wales data were obtained from the Home Office at http://crimestatistic.org.uk.

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Appendix: Family characteristics and risk factors

	Control group			Intervention group		
Number of large families, i.e. more than three children	(21.3%)			(18.8%)		
Number of single parents	single (34%)		cohabit/married (66%)	single (43.5%)		cohabit/married (54.2%)
Parent's age at first-born child (years)	Mean 20.54	SD 4.17	Range 16-32	Mean 21.48	SD 4.97	Range 15-50
Number of risk factors	2.34	1.09	1-4	2.34	1.32	1-5