

Financial Benefits and Child Health



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Report One: The effectiveness of financial benefits in reducing inequalities in child health: a systematic review.

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Executive summary

Introduction

This report presents a systematic review of studies on the effectiveness of financial benefits in reducing inequalities in child health. Whether money makes a difference to the health and well-being of children is an important issue given current government policy on tackling child poverty in the UK.

Background

There is a consistent correlation between low socio-economic status and adverse health outcomes for children. Growing up in poverty can have a negative impact not only on a child's physical health, but also on other factors such as school performance and social development. The effects of childhood poverty can extend into later life as socio-economic position in childhood shapes the health of adults. Moreover, children who have grown up in poverty are more likely to be unemployed or to work in unskilled, poorly paid manual jobs in adult life. Although some indicators of child poverty have shown that the situation is improving, the gap between the poor and the non poor is growing.

A number of policies have been instituted by the present (2003) UK government in pursuit of their goal of eliminating child poverty. However, lifting the poorest families out of poverty will present the greatest challenges to government. It is therefore important to determine which kind of intervention is most effective in tackling inequalities, be it additional cash, the provision of services or a combination of the two. This review contributes to this debate.

Methodology

The chosen methodology for this study was a systematic review. This method provides a synthesis of existing robust research, and use explicit methods to help eliminate bias.

Randomised controlled trials of income supplementation programmes to low income families were identified using electronic databases. Studies were included in the review if the intervention increased the disposable income of low income families and if the study included a contemporaneous comparison group who received another professional intervention or no intervention. The sample population included low income families with at least one child under 16 years. Study designs were either randomised or quasi-randomised controlled trials.

Titles and abstracts of studies identified by searches were assessed against basic inclusion criteria. Studies that seemed likely to meet the inclusion criteria were retrieved in hard copy and independently reviewed by two members of the research team. Data was extracted using pre-prepared data extraction sheets. Citations were stored using Reference Manager. Each study was critically appraised to assess the quality of the research and therefore the strength of findings.

Findings

Three studies fully met the inclusion criteria for the systematic review. Only one of these (Huston 2001) directly addresses the question of interest.

A second study by Horowitz (2001) compares two different modes of welfare benefit. The third (Stevens-Simon 1997) met the formal inclusion criteria but does not address the questions raised by this review.

Four papers that do not fully meet the inclusion criteria report on child outcomes from the US income maintenance experiments, and are discussed

in this report as they are likely to be of interest to the policy and practice readers.

Seven further studies are examined. Again they fall outside of the inclusion criteria, but do resonate with the central issues of child poverty and the question of appropriate interventions.

Discussion

The association between lower income and poorer outcome in all dimensions of child health is strong and consistent across countries and time. This review found that there is a lack of high quality experimental evidence to adequately assess the effectiveness of financial benefits in reducing inequalities in child health.

The studies identified in this review, which directly attempted to address the effects of a financial intervention, offer some suggestion of a positive effect. However, this effect is far from consistent and with most of the studies the interpretation is weakened by methodological problems.

Whilst we have not been able to establish on the basis of current evidence that direct financial benefits are effective at redressing this balance in the short term, this is in essence a statement of “no evidence of effect” rather than of “evidence of no effect”.

One

Introduction

There is a very strong and consistent association in observational data between family income and virtually every health, behavioural, and educational outcome for children.

This report presents a systematic review of the effectiveness of direct payments to families in reducing inequalities in child health. This report is timely given that the elimination of child poverty ranks highly on the present UK government's domestic agenda.

This introductory section discusses the content of this report, the objectives of the research, and considers definitions of poverty and health.

This report presents findings from a systematic review that investigated the extent and quality of evidence on health outcomes for children attributable to supplementation of parental income. The report outlines the methods of the review and presents findings from secondary research on the effectiveness of financial benefits in reducing inequalities in child health. It examines three studies that form the core of the systematic review, and a number of other studies, which do not meet the review's inclusion criteria, but report on interventions and outcomes likely to be of interest to Barnardo's who commissioned this work.

A scoping exercise of charities in the UK, who provide direct financial help to families with children living on a low income, is presented in an allied report.

This report is timely given the current government's recognition of the extent of child poverty in the UK, and their commitment to reduce child poverty by half by 2010 and to end it by 2020. There is concern amongst some organisations working with child poverty and academics working in the field that these targets will not be met by current policy initiatives.

Objectives

The objective of this study is to compare the effectiveness of direct provision of extra financial benefits to families with either no provision or the provision of professional service interventions in improving outcomes for children who live in families with a low income. The outcomes of interest relate to physical and emotional health, or social indicators of well-being such as educational progress.

Disposable income rather than benefits in kind are at the heart of the interventions explored in this review. The work interrogates relevant studies to assess the comparative effectiveness of financial benefits with other interventions in reducing inequalities in child health. The issue of choice is of critical interest. Do the choices about how additional income is spent have a measurable impact (positive or negative) on health outcomes for children?

Defining poverty and defining health

Most developed countries use an income cut-off point as a poverty line. In the European Union anyone living at a level below 50% of the average national income is considered poor. In the US income cut-offs vary by family size. Research papers discussed in this report commonly use income cut-off to measure poverty.

It is difficult to determine levels of child poverty as it is normally based on a family or household income, with no indication of the child's access to money or resources. The distribution of household income is seldom equal and children may be protected from some of the effects of poverty by parents taking less than their 'share'. The opposite may be true where children suffer deprivation in families that would not be considered to be poor. However, there is little alternative than to consider family income as a pooled resource. Consequently it remains difficult to assess the full extent of 'child' poverty (Piachaud 2002).

Health can also be difficult to define. The World Health Organisation (WHO) definition describes health as 'a state of complete physical, mental and social well-being not merely the absence of disease or infirmity' (Spencer 2000). Within this study the concept of health is interpreted in this broad sense.

Two

Background

There is a consistent positive correlation between low socio-economic status and adverse health outcomes. Growing up in poverty can have a negative effect not only on a child's physical health but also on factors such as school performance and social development. Moreover, the effects of childhood poverty can extend into later life as socio-economic position in childhood shapes the health of adults. Children who have grown up in poverty are more likely to be unemployed or to work in unskilled, poorly paid manual jobs in adult life.

The UK government is committed to ending child poverty, and has instituted a number of policies to this end. There is concern that lifting the poorest families out of poverty will present the greatest challenge to government.

2:1 The relationship between low income and poor health

Following the publication of Richard Titmuss's *Birth Poverty and Wealth*, (Titmuss 1943, in Roberts 1997) newspapers of the 1940s reported that "Poor folks' babies stand less chance." Titmuss had identified a growing gap in the life chances of children from working class and middle class families, and the relationship between this and the occupational status of fathers.

The relationship between household income and the life chances of children continues, with those in low income households at a significant disadvantage to their better off peers. Spencer (2000:170) describes the consistent positive correlation between low socio-economic status and adverse child health outcomes. Children from poorer families are likely to spend more days in bed, to be absent from school more often due to illness, and are more likely to be hospitalised.

2:2 The impact of poverty on children

Disadvantages for children from low income families extend beyond physical health. Children's educational potential can be hampered by their socio-economic background. Stipek et al. (1997) describe significantly poorer performance by pre-school children from low-income families on eight cognitive tests, when compared to a sample of children from better-off households. Children from economically deprived backgrounds display lower levels of cognitive functioning, academic performance and achievement and social development than peers from financially advantaged backgrounds (Conger et al 1992, 1993, Duncan, Brooks-Gunn and Klebanov 1994, Liaw and Brooks-Gunn 1994, McLoyd 1990, Smith, Brooks-Gunn and Klebanov 1997).

2:3 The impact of childhood poverty on adult life

Children who live in poverty are likely to experience reduced life chances in adulthood in comparison with their better off peers (Baker 2002, Dearing et al 2001, Petterson et al 2001, Shaw et al 1999, Roberts 1997, Smith et al 1997, Duncan et al 1994). Roberts (1997: 1123) points to the "long shadow forward"

over many aspects of physical and emotional health following childhood poverty. People from the poorest groups are at increased risk of serious or long-term life limiting illness, and children from these groups are more likely to be unemployed or working in unskilled, poorly paid manual jobs in adult life (Roberts 1997, Shaw et al 1999). Davey Smith (1999) argues that fluctuations in income also impact on health outcomes, with higher mortality rates amongst those who have experienced reductions in income levels, even if only temporarily. He contends that socio-economic position in childhood shapes health in adult life irrespective of adult socio-economic status. Wagstaff (2002: 97) suggests that “poor people are caught in a vicious cycle” with causality running in both directions: “poverty breeds ill-health, ill health maintains poverty.”

2:4 Indicators of child poverty

Bradshaw (2002), reporting on a review of the outcomes of child poverty, describes how some indicators of health and well-being amongst children have deteriorated over the past 20 years while others have improved. On the negative side, a growing number of children are homeless or living in bed and breakfast accommodation. More positively, child mortality has fallen and overall children's educational attainment has increased. In spite of these improvements the gap between the poor and the non-poor has grown in this period.

2:5 Intervening

Power and Hertzman (1997) argue that early intervention has benefits that cannot be underestimated. However, even such interventions tend not to place the poorest children on a par with their more advantaged peers. Moreover, our ability to identify interventions that will reduce inequalities is not as good as it could be.

2:6 Child poverty in the UK

Using data from the Luxemburg Income Study (Smeeding 1997), Bradbury and Janitti (1999) discuss relative levels of child poverty in industrialised countries. They highlight the fact that the UK has the highest rates of child poverty in Europe, while the US almost tops the table just one place behind Russia. In the UK there was a threefold increase, between 1979 and 2000, in the numbers of children living in households with incomes less than fifty percent of the contemporary mean after housing costs. This increase was concentrated in the period from the mid to late 1980s (Bradshaw 2002). Piachaud et al (2000) report that in 1997/1998, 4.5 million (representing one in three children) were living in poverty. In 1999/2000 44% of children were residing in households with incomes 60% below average after housing costs, 34% in households with incomes 50% below average, and 21% in circumstances 40% below average income (Bradshaw 2002). In contrast to a generation ago poverty is now most prevalent in households with children (Darton et al 2003).

2:7 The government's response

The present UK government acknowledges the link between poverty and health, (Benzeval 2002, Burchardt et al 2002). The reduction of inequalities in child health is an important aspect of government policy. In 1997 an Independent Inquiry into Inequalities in Health was commissioned. It recommended that strategies to tackle health inequality should address income disparity, impoverished environment and social disenfranchisement (Acheson 1998). In 1999 Tony Blair pledged that the government's "historic aim will be for ours to be the first generation to end child poverty. It is a twenty year mission" (Walker 1999).

A number of measures have been adopted to this end. Some aim to improve the incomes of families who have children, such as Working Families' Tax Credit, which redistributes income to poorer working families, and is designed to enhance the income from employment and encourage paid work. Since 1997, the universal child benefit has increased in real terms by 26% for a first child and 4% for second and subsequent children. The Children's Tax Credit, introduced in April 2001 is directed at all families with a child under sixteen. Income Support (a means-tested benefit available to unemployed, sick or disabled people) has been subject to increases for families with children. Programmes such as Sure Start have been introduced and these aim to encourage the physical, intellectual and social development of children, in particular those from disadvantaged homes.

2:8 Current policy, future challenges

Piachaud and Sutherland (2002) report that changes in tax and benefits that affect families have led to a 10% reduction in the numbers of children living in poverty with the largest proportionate fall amongst children with a parent in work. They argue that tackling the problem of poverty amongst the poorest members of society may present the greatest challenge to policy makers.

The complexity of problems faced by some families, who are not only living with limited financial resources but also coping with the stresses and

consequences of sub-standard housing, inadequate services and poor schools, present the government with an even greater challenge. The task of ending child poverty will get harder the nearer the government gets to its target. Lifting the poorest families out of poverty will be a complex undertaking.

Three

Methodology

The chosen methodology for this study was a systematic review. This method provides a synthesis of robust research, using explicit methods which help to eliminate bias.

The methods of this review are detailed in this section and are summarised here. Randomised controlled trials of income supplementation programmes to low income families, were identified using electronic databases. Studies were included in the review if the intervention increased the disposable income of low income families, and if the study included a contemporaneous comparison group, who received another professional intervention or no intervention. The sample population included low income families with at least one child under 16 years. Study designs were either randomised or quasi-randomised controlled trials. Titles and abstracts of studies were identified by searches and assessed against basic inclusion criteria. Studies that seemed likely to meet the inclusion criteria were retrieved in hard copy and independently reviewed by two members of the research team. Data was extracted using pre-prepared data extraction sheets. Citations were stored using Reference Manager. Each study was critically appraised to assess the quality of the research and therefore the strength of findings.

3:1 Why do a systematic review?

The systematic review is a method of critically appraising, summarising and attempting to reconcile the evidence concerning a particular problem (Jadad et al., 1997; Petticrew, 2000). The value of systematic reviews is that they provide a synthesis of robust studies in a particular field of work which no practitioner, however diligent, could possibly hope to read themselves.

Systematic reviews differ from traditional reviews in a number of ways:

- The objectives of the review and the methods used are specified.
- The materials and methods to be used are specified in advance, for example, the criteria for inclusion or exclusion of studies.
- They seek to identify and review all relevant studies.
- They assess the methodological soundness of the studies they include.
- The review can be replicated by others addressing the same objectives using the same materials and methods.

3:2 Criteria for considering studies for this review

Types of studies

Studies which report that participants were randomised or quasi-randomised (e.g. alternate allocation or allocation by date of birth) to an income intervention or to receive a professional intervention related to child care, such as parenting classes or advice from a medical professional or no intervention.

Types of participants

The population receiving the intervention were pregnant women, single parents (female or male), or couples with at least one child under the age of 16 years.

Country of habitual residence had to be one where access to basic needs are usually sufficient for the provision of adequate food and shelter. Based on the 2000-2001 World Development Report (WDR), which maps countries stratified by income, this review includes participants from high income countries where average annual income per person is at least US\$9,266.

This includes Australia, Japan, North America, Canada, Greenland, Iceland and Europe, excluding Poland. Since this sum is an average, a significant number of people will have an income that is less or considerably less. These people would be considered to have a low income in a relatively wealthy country, and are therefore included in the group who would be targeted by interventions of interest to this study.

Types of intervention

Our primary interest was income interventions that increase the amount of disposable income available to a family and therefore increase available choices. Such interventions may be in the form of direct cash payments, taxation schemes such as Negative Income Tax that positively benefits low income families, vouchers or loans, although the latter are considered closely to assess whether or not they meet the basic criteria of increasing choice to families. Conditional payments, which is cash earmarked for a specific purpose, are also of interest as they release money from the usual income and therefore increase choice.

Comparison groups will have received either:

- (1) no intervention
- (2) an intervention provided by professionals, for example parenting classes, professional advice from a GP, community nurse, teacher, nursery worker, or other involved professional, or child care or befriending service.

Types of outcome measure

Studies had to measure at least one of the following outcomes:

- (1) Any measure of physical child health, including measures of growth or measures of mortality or morbidity.
- (2) Any standardised measure of children's psychomotor development.
- (3) Any standardised measure of children's mental health.
- (4) Any standardised measure of educational progress or attainment.
- (5) Numbers of admissions to hospital.
- (6) Numbers of teenage pregnancies.

3:3 Search strategy for identification of studies*

Published or unpublished trials were considered, with no language restrictions.

The following electronic databases were searched:

Assia

Cochrane

Cinahl

Econlit

Embase

Medline

PsychInfo

A forward citation search using the Web of Science database, which finds papers that cite those meeting the inclusion criteria, identified from searches of the above databases, was carried out.

The general structure of the search strategy was:

(income or synonyms)

'or'

MeSH terms were added using the OR operator depending on the Thesaurus for each database

'and'

A paediatric filter (see [Mackway-Jones 2002](#))

'and'

Cochrane filters for the identification of RCTs were used where available, e.g. [Dickenson and Larson 1996](#), as detailed below.

*See appendix 1 for full search strategy

3:4 Study selection

Titles and abstracts of studies identified by searches were read on screen by the study's research officer (SD), with a random selection double read by a second staff member (CJ). These were assessed against the basic inclusion

criteria described above. Those that clearly did not meet the criteria were rejected at this stage. A record of why studies failed to meet basic criteria is detailed in section 4:1. Examples include the lack of a contemporaneous control group or a focus on a population outside the parameters of this review. This record provides an account of reasons for exclusion, and details the proportions of studies excluded according to each of the criteria.

Those studies that seemed likely to meet the inclusion criteria were retrieved in hard copy. These studies were examined independently by two members of the research team, the research officer and the senior research fellow (SD and CJ) to determine if they met the inclusion criteria. The protocol allowed for disagreements to be documented and resolved by consensus with provision for arbitration by a third member of the team (SL or GL) if consensus could not be achieved. This did not arise.

3:5 Data management

Data was extracted by the research officer using pre-prepared data extraction sheets, and these were piloted to ensure their reliability in extracting relevant data. Citations were stored using Reference Manager.

3:6 Data extraction

Details of each study including population, type of income intervention and comparisons used, and the specific outcome measures used in the study were recorded. The review details factors such as time of measurement after the intervention and length of follow-up. The methodology of each study is described in detail, including recording of entry criteria, methods of allocation, numbers recruited, attrition and methods of outcome assessment including blinding of assessors, where these factors were reported in the reviewed papers.

3:7 Assessment of quality of included studies

The quality of studies included in the review was independently assessed, by the research officer (SD) and senior research fellow (CJ), using a predefined instrument. Again the protocol allowed for disagreements to be resolved through arbitration by a third member of the team (SL or GL) if consensus could not be achieved. Again this was not necessary.

Where included studies were randomised control trials, standard quality assessments were carried out in relation to:

1. Allocation concealment
2. Intention to treat analysis
3. Blinding of outcome assessment

3:8 Analysis

Studies included in this review were heterogeneous in population composition, types of income interventions and comparisons, methods of outcome measurement, and outcomes. This means that statistical pooling of effects was inappropriate. This review therefore presents a narrative summary of findings from the studies. It describes key themes derived from reviewed papers, and draws out implications for further research, policy and practice.

Four

Findings

Three studies fully met the inclusion criteria for the systematic review. Only one (Huston 2001) directly addressed the question of interest.

The second study by Horowitz (2001) compared two different modes of welfare benefit. The third (Stevens-Simon 1997) met the formal inclusion criteria but does not address the questions raised by this review.

We have added to this report a further eleven studies of potential interest to policy and practice readers. Four papers reported on child outcomes from the US income maintenance experiments. Whilst these did not fully meet the inclusion criteria, they addressed matters salient to our study.

Seven further studies, which fall outside of the inclusion criteria, but resonate with central issues of child poverty and the question of appropriate interventions are also included.

The next section presents findings from the studies reviewed in this research. It is divided into four parts.

4:1 - tables 1-2 detail the results of literature searches.

4:2 - review the studies included in the systematic review.

4:3 - analyses the four papers that present child outcomes of the US income maintenance experiments.

4:4 - discusses seven studies that failed to meet the inclusion criteria but address issues of importance to the review question.

Appendix 2 - outlines the reasons for exclusion of some retrieved studies.

4:1 Results of literature searches

Table 1: Total number of references retrieved from initial searches of databases, and the number papers from each database that met each element of the systematic review inclusion criteria

INCLUSION CRITERIA	TOTAL NUMBER OF STUDIES RETRIEVED	POPULATION	INTERVENTION	CONTEMPORANEOUS CONTROL GROUP	OUTCOME	DESIGN
DATABASE						
ASSIA	273	20	3	29	24	17
COCHRANE	433	79	8	433	100	433
CINAHL	490	45	9	36	55	98
ECONLIT	200	0	0	0	0	0
EMBASE	2260	18	6	784	52	276
MEDLINE	4272	39	8	60	127	41
PSYCHINFO	2400	159	9	270	453	54
TOTAL	10328	360	43	612	811	919

Table 2: References retrieved from each database, reason for retrieval, and their eventual positioning in this review

DATABASE	NUMBER OF REFERENCES IDENTIFIED IN INITIAL SEARCH	NUMBER OF PAPERS RETRIEVED FOR BACKGROUND INFORMATION	PAPERS RETRIEVED TO ASSESS FOR INCLUSION IN REVIEW	PAPERS INCLUDED IN SYSTEMATIC REVIEW	INCOME MAINTENANCE EXPERIMENTS	NON-REVIEW STUDIES OF INTEREST
Assia	273	3	2	0	0	0
Cochrane	433	3	1	1	0	3
Cinahl	490	1	0	0	0	0
Econlit	200	0	0	0	0	0
Embase	2260	6	1	0	0	1
Medline	4272	4	9	0	4	1
Psychinfo	2400	34	7	2	0	2
Total	10328	51	20*	3	4	7

*Studies that were not included in the review, were not an Income Maintenance Experiment and were not of further interest to the research question directly, were placed with other background information

4:2 Review of studies included in the systematic review

This section describes in detail the three studies that met the inclusion criteria for this review. The characteristics and findings of the studies are summarised in Table 8.

Only one study (Huston 2001) directly addressed the question of interest. The intervention described in this study required participants to be prepared to work at least 30 hours per week. The study by Horowitz (2001) compares two different modes of welfare benefit - the newer mode ("Jobs First") appears to provide a higher cash benefit because it allows an income disregard for people working (and some other benefits in kind) but involves loss of entitlement to financial benefits for those who do not work. This study was included on the grounds that it appears to meet the inclusion criteria, but it must be noted that the financial benefit is likely to vary between participants depending on working status, and this detail is not provided by the authors. The third (Stevens-Simon 1997) met the formal inclusion criteria but the amount of money provided to the intervention group was trivial and was in fact offered as an incentive to persuade participants to attend a programme rather than as an intervention in its own right.

Unfortunately only the study by Stevens-Simon was methodologically robust as a number of important methodological details were unclear in the other two studies.

Overall the findings of these studies provide little evidence that direct payments to families will improve the outcomes for their children in the short to medium term. However, it is important to note that the studies included a relatively small number of participants, lasted a relative short while and measured only a limited set of outcomes.

In this review we found strong observational evidence linking low income and poor outcome for children across a range of outcome measures. This

contrasts with the paucity of evidence showing a beneficial effect of providing direct income supplements to families as an intervention. It is important to note that this reflects the lack of high quality research studies addressing this question rather than strong evidence against an effect.

Huston 2001

This study was carried out in Wisconsin (USA) in the late 1990s and examined the effect of a programme, named 'New Hope' which included a wage supplement and other benefits provided for two years.

Participants

To be eligible for the programme people had to be older than 18, be at or below 150% of the poverty line, and be willing to work 30 or more hours per week. The project was carried out in two poor areas of Milwaukee.

The 1,357 adult applicants were randomly assigned to either programme (n=679) or control (n=678). For the purposes of this review the population of interest is the child and family study, which was nested within a larger experiment. The former included all adults with at least one child between the ages of 1 and 10 years when they applied for the programme, (programme n=366, control n=379). Sixty-seven Asian adults (primarily Hmong) were excluded because cultural and language differences meant that assessment tools were inappropriate. Up to two children in each included family were chosen to be the "focal" children in the study. If there were more than two eligible children, focal children were chosen randomly except that preference was given to opposite sex siblings.

Intervention programme

Those in the experimental arm of the trial were offered the following benefits: (1) a wage supplement that ensured an increase in their net income the more they earned, (2) a child-care subsidy for all children under 13 years, (3) subsidised health insurance. The childcare and health care subsidies were commensurate with those available to some families through the Aid to Families with Dependent Children (AFDC) programme and Medicaid. The programme provided case management services to assist participants in job searches. If participants were unable to find unsubsidized employment, they

were offered access to a community service job at a minimum wage. This counted towards the hours needed for the New Hope benefits.

Comparison group

No intervention was offered to individuals randomised to the control arm.

Outcome measures

A range of outcomes related to children's education, aspirations, behaviour and psychological well-being was measured in this study. These are summarised in Table 3. No measures of physical health were included. The authors also measured a number of parental outcomes which have not been included in this review.

Table 3: Outcomes of interest and standardised instruments used

Outcomes	Sub-scales	Standardised Instrument	Respondent
Child education and aspiration	<i>Academic achievement and classroom conduct</i>	Academic subscale of the Social Skills Rating System(SSRS) Classroom Behaviour Scale	Teacher report Teacher report
	<i>Aspirations and expectations</i>	Interviews~ children asked about <i>aspirations</i> : what kind of job they would like <i>Expectations</i> ~ what kind of job they thought they would get <i>Educational expectations</i> ~ How sure children were that they would finish high school, go to college and finish college	Child report
Child social behaviour	<i>Positive social behaviour</i>	Positive Behaviour Scale	Teacher report and parent report
	<i>Problem behaviour</i>	Externalising and internalising sub-scales of the SSRS	Teacher report and parent report
Child psychological well-being	<i>Perceived competence</i>	The Pictorial Scale of Perceived Competence and Social Acceptance of the Young Self perception Profile	Child report Child report
	<i>Peer relationships</i>	The Loneliness and Social Dissatisfaction Questionnaire	Child report
	<i>Anxiety</i>	Revised Children's Manifest Anxiety Scale	Child report

Study quality

The study quality was assessed on three main dimensions: adequacy of allocation concealment, intention to treat analysis and blinding of outcome assessment.

Although participants were reported to have been randomised to intervention and control groups, no details are provided to allow assessment of the adequacy of allocation concealment.

The completeness of follow-up varies substantially for different outcomes ranging between approximately 50% and 75%.

The teachers' assessments were carried out blind to assignment. The nature of the intervention means that parents could not be blind to assignment.

Statistical analysis

In the analysis, results were adjusted for a wide range of baseline variables using a regression model. Variables included parental education, race/ethnicity, gender of parent reporting, parents' age, number of children and parents' history of welfare receipt. The authors took appropriate account statistically of the non-independence of observations of more than one child in the same family. Results are expressed as effect sizes and boundary 'p' values are reported. Confidence intervals around the estimates are not given, nor could they be calculated given the lack of exact significance tests.

All results are analysed separately for boys and girls as the authors report that they expected differential effects by gender based on findings from previous studies.

Table 4: Impacts on child outcomes for boys

Boys					
Group					
Outcome	Programme	Control	Difference	Effect Size	n
Education and Aspiration					
Teacher Report ~SSRS academic subscale	3.27	2.95	.32*	.33	208
~Classroom behaviour	3.70	3.30	.40*	.38	208
Child Report ~Expects to attend college	4.33	3.76	.57*	.49	137
~Expects to finish college	4.09	3.50	.60*	.46	137
~Occupational aspirations	59.23	54.18	5.05*	.29	241
~Occupational expectations	58.23	54.09	4.14	.24	241
Positive Social Behaviour					
Teacher report – total	3.62	3.29	.33**	.50	208
Parent report – total	3.95	3.87	.08+	.22	292
Problem Behaviour					
Teacher report –total	2.30	2.60	-.30**	-.48	208
~Externalising	2.07	2.50	-.43**	-.51	208
~Internalising	2.20	2.33	-.14	-.22	208
~Hyperactivity	2.64	2.95	-.31	-.39	208
~Discipline actions	2.87	3.30	-.43	-.30	208
Parent Report – total					
~3-5 year olds	4.49	4.70	-.20	-.19	128
~6-12 year olds	4.57	4.84	-.27	-.22	164

* $p < .05$; ** $p < .01$; + $p < .10$. All two-tailed

Table 5: Details impacts on child outcomes for girls

Girls					
Group					
Outcome	Programme	Control	Difference	Effect Size	n
Education and Aspiration					
Teacher Report ~SSRS academic subscale	3.43	3.31	.12	.12	208
~Classroom behaviour	4.10	4.10	0	-.02	208
Child Report ~Expects to attend college	4.03	4.18	-.15	-.13	150
~Expects to finish college	3.94	3.93	.01	.01	150
~Occupational aspirations	56.42	57.87	-1.45	-.08	251
~Occupational expectations	57.23	56.41	.80	.05	251
Positive Social Behaviour					
Teacher report – total	3.75	3.72	.03	.05	208
Parent report – total	3.95	4.03	-.08	-.17	271
Problem Behaviour					
Teacher report –total	2.22	2.10	.13	.21	208
~Externalising					
~Internalising	2.07	1.85	.22*	.27	208
~Hyperactivity	2.26	2.22	.04	.07	208
~Discipline actions	2.35	2.23	.11	.14	208
	2.39	2.02	.37*	.26	208
Parent Report – total					
~3-5 year olds	4.57	4.61	-.03	-.03	109
~6-12 year olds	4.76	4.52	.23	.19	161

* $p < .05$; ** $p < .01$; + $p < .10$. All two-tailed.

Results in boys

The detailed results of scores on all outcome measures are summarised in Table 4.

Overall boys in the intervention group were rated significantly more positively by their teachers on all measures of behaviour and achievement than boys in the control arm.

There were no significant differences in results on parents' rating between the two groups.

Boys in the intervention group were significantly more likely to report that they expected to attend and finish college and to have positive occupational aspirations. There was no significant difference in occupational expectations although the differences reported were in favour of the intervention group.

Results in girls

The detailed results of scores on all outcome measures are summarised in Table 5.

Statistically significant differences between control and intervention arm are reported for two subscales of the teacher reports of problem behaviour, for 'externalising behaviour' and for 'numbers of discipline actions'. These were in favour of the control arm. No other significant differences are reported for any measures of aspiration, educational achievement or behaviour between the groups whether assessed by teachers, parents or self-report.

Discussion of gender differences

The apparent gender difference in the impact of the intervention should be viewed in relation to the pre-existing differences between these girls and boys on measures of academic performance and classroom behaviour. Girls are reported to have generally been doing better in school than boys, and the

impact of the programme appears to have brought boys closer to the academic performance and study skills typical of girls in both groups.

The authors explored possible reasons for the observed gender differences in results in interviews, which were conducted amongst a random sample of programme and control families. These suggested that parents were considerably more worried about their sons becoming involved in delinquent activities, than they were about their daughters doing the same. The authors suggest that parents may have made greater efforts and invested more resources in diverting their sons from such behaviour. Their fears appear justified given the considerably lower school performance, lower positive behaviour, and more behaviour problems amongst control boys in comparison with control girls.

Horowitz 2001

This study was carried out in Connecticut (USA) between 1996 and 1997 and compared the behavioural outcomes in young children whose mothers took part in two different income support programmes lasting eighteen months.

Participants

Those eligible were 6115 female welfare recipients with children in two Connecticut towns. Participants were randomised to either the 'Jobs First' programme or to receiving income support under the Aid to Dependent Families (AFDC) scheme¹.

Of those randomised, a randomly selected sub-sample of 1018 participants were selected for follow-up interviews of whom 964 were "confirmed eligible" by comparison with state records. People who had been in an earlier state reform evaluation or who were "child only" cases were excluded.

Women in the sample were largely members of ethnic minorities who had received a poor education, had commonly been supported by prior income support programmes, and were usually sole parents to their children. Furthermore, information on self-reported depression and depressive symptoms point to considerable ill health amongst participants.

This paper reports data on children between the ages of 3 and 10 years, from within this sample (n = 288).

¹ In August 1996 the federal government of Connecticut abolished the guarantee cash assistance to low-income families and their dependent children, as provided by AFDC and replaced it with temporary Assistance to Needy Families (TANF), a mechanism through which states may require citizens to work in order to receive income supports. Cash assistance was no longer an entitlement and all able adults were expected to work regardless of the impact on their families. The Jobs First programme was introduced to help mothers back into the work force.

Intervention

“Jobs first” was a new welfare programme that consisted of:

- an earned income disregard
- child care subsidies
- Medicaid benefits
- assistance with job training and placement
- child support enforcement services
- a “family cap” whilst participating in the programme.

It appears from the paper that at least for those people working, this programme offered a larger financial benefit, although this is rather unclear.

Comparison group

“Aid to families with dependent children” (AFDC) was the form of welfare benefit previously provided in this state. This consisted of cash benefits payable irrespective of whether the recipient was working.

Outcome measures

Data was collected via telephone interviews lasting approximately 50 minutes. The interview schedule included questions relating to employment, work-related experiences, and income and household composition as well as child care, home environment, social support, maternal mental and physical health, child physical health, emotional and behavioural health and health service use.

Study quality

Although participants are said to have been randomised no details are provided of the method of randomisation, nor of any attempts to conceal allocation.

Of 964 eligible people 722 (74.9%) were interviewed. It is not clear whether the proportion is the same in those women with children in the appropriate age range for this study.

The nature of the intervention makes blinding of parents who were the key informants impossible.

Statistical analysis

Mothers' reports of the prevalence of school and behaviour problems as assessed by the behaviour problem index (BPI) were compared between the two arms. Statistical significance was assessed using a standard chi square test.

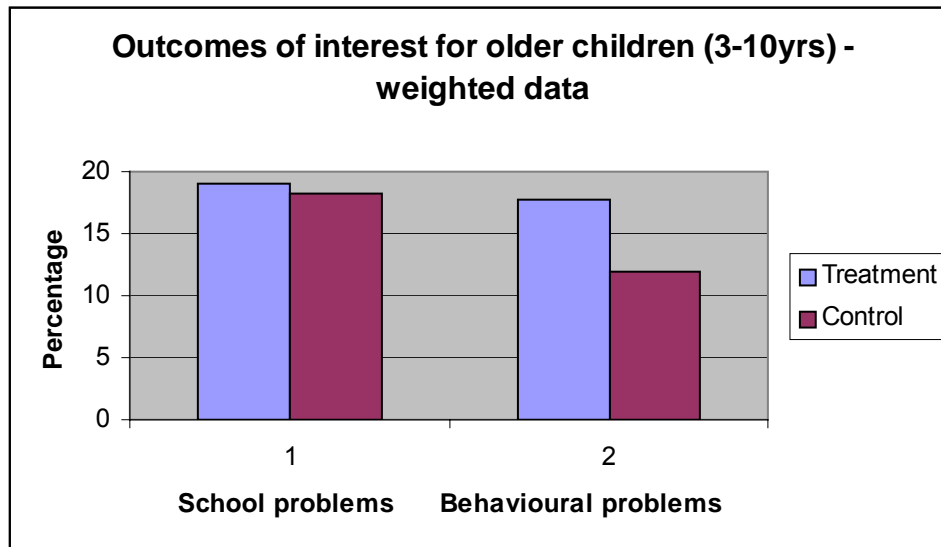
The authors then used logistic regression to examine the effect of adjustment for potential confounding variables on any differences between treatment arms.

Finally the authors examined the effect of various potential predictors irrespective of treatment assignment.

Results

Mothers' reports of the prevalence of school problems and behaviour problems in the two arms of the trial are shown in Figure 1. No significant differences are reported between groups on either measure. Adjustment for baseline variables of interest made little difference to the results.

Figure 1



Irrespective of intervention arm, children were found to be more likely to have school problems if they were older, if their mothers had not completed high school, if they reported child behaviour problems, and if parents met the criteria for depression. Behaviour problems were more likely if mothers reported violence in the home, many depressive symptoms, and few positive child qualities, or if the child had been retained for a grade in school.

Table 6: Child characteristics reported by mothers of older children

Variable	Total n=311*		Treatment n=157**		Control n=154***		x ₂	p
	n	%	n	%	n	%		
Child gender								
~ Male	152	48.96	78	49.30	75	48.62	.014	.905
~Female	159	51.04	80	50.70	79	51.38		
Child currently in school								
~Yes	41	13.17	20	12.94	21	13.41	.015	.904
~No	270	86.83	137	87.06	133	86.59		
Child repeat grade								
~Yes	42	18.37	20	17.16	22	19.68	.243	.622
~No	188	81.63	99	82.84	89	80.32		
Child suspended								
~Yes	17	7.30	10	8.56	7	5.94	.583	.445
~No	213	92.70	109	91.44	104	94.06		
School performance								
~Average of above	285	92.94	144	92.86	141	93.02	.003	.956
~Below average	22	7.06	11	7.14	11	6.98		
Child arrested								
~Yes	2	2.46	0	0.00	2	5.08	2.35	.125
~No	85	97.54	45	100	40	94.92		
Child's positive qualities								
~Few	15	4.82	11	6.86	4	2.80	2.69	.101
~Many	292	95.18	144	93.20	148	97.20		

* Numbers shown represent weighted data. Unweighted total = 288

** Numbers shown represent weighted data. Unweighted total = 146

*** Numbers shown represent weighted data. Unweighted total = 142

Stevens-Simon 1997

This study was carried out in Denver, Colorado over two years in the early 1990s. It aimed to test the hypotheses that:

- (1) a monetary incentive promotes participation in a peer-support group;
and
- (2) peer-support group membership decreases repeat pregnancy amongst adolescent mothers.

The study met the formal inclusion criteria for this review as it was possible to compare a relevant outcome (pregnancy in adolescence) in those randomised to receive the monetary incentive and a control group was included.

Participants

Eligibility criteria were that participants had to be younger than 18 years and that their first-born child was younger than 5 months. Most study participants (approx 70%) obtained pre and post natal care in the 'CAMP' facility. This is a comprehensive, multi-disciplinary, adolescent orientated, prenatal, delivery, postpartum and infant care programme.

286 primiparous adolescent mothers were recruited, and 248 of these completed the final study interview (either the interview covering the six months prior to diagnosis of repeat pregnancy or the 24 month post partum interview). The authors report that 38 young mothers were lost to follow-up because of relocation, leaving no forwarding address or they 'disappeared' immediately after the enrolment interview.

Intervention programme

Participants were randomised to one of three treatment groups.

1. Weekly peer-group meetings, plus \$7/week. Pregnancy tests were done monthly, and participants were given free bus tokens to help with travel expenses.

2. Weekly peer-group meetings. Pregnancy tests were done monthly, and participants were given free bus tokens to help with travel expenses.
3. Participants received \$7/week. There were no group meetings. A pregnancy test was done monthly. Free bus tokens were available.

Comparison group

Participants in this group received only routine postpartum care. There was no intervention. Pregnancy tests were carried out twice a year.

Outcome measures

Interviews were conducted at the outset of the study and again at 6 month intervals during the study period. Data collected related to a number of risk factors for repeat pregnancy, as the conceptual model on which this study is based posits that the timing of repeat pregnancy is determined by an interaction between maternal and environmental variables and the 'dollar a day' programme. Participation in the study ceased with the diagnosis of pregnancy.

Study quality

Allocation to treatment groups was concealed. Analysis was carried out on an Intention to Treat (ITT) basis. The nature of the intervention made blinding of participants impossible. The objective nature of the outcome (pregnancy) makes blinding of observers irrelevant.

Statistical analysis

The number of adolescents in each group who became pregnant during the study period was compared and statistical significance calculated using a standard χ^2 . In addition, factors found to be significantly related to repeat conception on univariate analyses were used as independent variables in a stepwise logistic regression analysis.

Results

There were no differences between treatment groups in the rate of repeat pregnancy during the study.

Table 7: Rate of repeat pregnancy in the 4 treatment groups at 6 month intervals during the 24 month study

No. (%) of Repeat pregnancy by follow-up interval					
Team	Total in group	6 month	12 month	18 month	24 month
Group and Incentive	97	7(7.2)	18(18.6)	27 (27.8)	34 (35.1)
Group only	23	2(8.7)	7(30.4)	8(34.8)	13(56.5)
Incentive only	84	11(13.1)	19(22.6)	29(34.5)	35(41.7)
Control	44	2(4.6)	5(11.4)	8(18.2)	15(34.1)
Total	248*	22(8.9)	49(19.8)	72(29.0)	97(39.0)

* 38 participants were lost to follow-up

Participation in the interventions was generally low. Moreover, researchers argued that in some cases the group setting appeared likely to be counterproductive. Researchers reported overhearing some participants advocating the benefits of having a second child and expressing their reservations about contraceptive use.

Although this study fulfilled the inclusion criteria for this systematic review, compliance was low as were the sums offered to participants. The core outcome of interest was participation in the peer support programme, for which the \$7 was an incentive. It is unsurprising that this sum had little effect on the outcome reported.

Table 8: Description of included studies and main findings

Study	Huston 2001	Horowitz 2000	Stevens-Simon 1997
Location of study	USA	USA	USA
Design	Randomised controlled trial, follow-up at 2 years	Randomised controlled trial, 18 month follow-up	Randomised controlled trial, duration of study = 2 years
Participants	Residents of a poor neighbourhood in a US city who had an income at or below 150% of the poverty line; had at least one child between the ages of 1 year and 10 years, 11 months at the outset of the programme and were willing to work more than thirty hours per week n=745	This paper reports data on children between the ages of 3 and 10 years, n = 288.	286 primiparous girls younger than 18 years of age and of low socio-economic status
Interventions	Participants were randomised to programme or control groups. Programme intervention consisted of: <ol style="list-style-type: none"> 1. a wage supplement that ensured that net income increased as people earned more 2. a child care subsidy for children under 13 3. subsidized health insurance 	Aid for Families with Dependent Children (AFDC) pre reform welfare programme, 'Jobs First' post welfare reform programme, this involved: <ol style="list-style-type: none"> 1. cash assistance limited to a total of 21 months 2. earned income disregard 3. child care subsidies 4. Medicaid benefits 5. assistance with job training 	Four interventions: <ol style="list-style-type: none"> 1. monetary incentive and peer support group 2. peer-support group only 3. monetary incentive only 4. no intervention (control)
Outcomes	Child education and aspiration Child social behaviour Child psychological well being Parental employment and maternal resources Child care and child activities Health care Parenting	Measures of physical health status Depression in adult female respondents Family environment ~ interaction with children, assessments of parenting, parenting practices, positive child qualities, stressful events	Consistency of participation in planned intervention and repeat pregnancy
Allocation concealment	Unclear	Unclear	Good
Intention to treat analysis	Unclear	Unclear	Yes, but 38 lost to follow-up.
Blinding of outcome assessment	Assessments carried out by teachers were blind Assessments carried out by researchers were not blind Participants were not blind to the intervention (not possible)	Unclear	No, the nature of the outcome (pregnancy) makes blinding of observers irrelevant.

Table 8 cont'd

Study	Huston 2001	Horowitz 2001	Stevens-Simon 1997
<p>Main Findings</p>	<p>Results in boys Teachers rated boys in the intervention group significantly more positively on all measures of behaviour and achievement than control boys. Parents' rating showed no significant differences between the two groups. Boys in the intervention group were significantly more likely to have positive educational expectations and occupational aspirations. There was no significant difference in occupational expectations although the differences reported were in favour of the intervention group.</p> <p>Results in girls Two subscales of teacher reports: problem behaviour, for "externalising behaviour" and for "numbers of discipline actions" were statistically significant in favour of the control arm. No other significant differences are reported for any measures of aspiration, educational achievement or behaviour between the groups whether assessed by teachers, parents or by self-report.</p>	<p>No significant differences are reported between groups on either measure school problems or behavioural problems. Adjustment for baseline variables of interest made little difference to the results.</p> <p>Irrespective of intervention arm, children were found to be more likely to have school problems if they were older, if their mothers had not completed high school, if they reported child behaviour problems and if parents met the criteria for depression. Behaviour problems were more likely if mothers reported violence in the home, many depressive symptoms, and few positive child qualities or if the child had been retained for a grade in school.</p>	<p>There were no differences between treatment groups in rate of repeat pregnancy during the study.</p> <p>Participation in the interventions was generally low. Researchers argued that support groups may be counterproductive as some participants were overheard advocating the benefits of having a second child and expressing their reservations about contraceptive use.</p>

4:3 Child outcomes and the US income maintenance experiments

In 1976 the advice of the [US] National Academy of Sciences advisory committee on child development was that “an essential component of social policy to enhance child development - is to ensure that every American family has an income sufficient to enable parents to provide the basic necessities of their children” (in Salkind 1982). In the late 1960s and the 1970s four income maintenance experiments (IMEs) attempted to test the effects of income maintenance on a number of outcomes. Based on a negative income tax model, these experiments were conducted in four centres (Connor et al 1999). The city of New Jersey, (the New Jersey experiment), the rural areas of Iowa and North Carolina (the Rural experiment), in Gary Indiana (the Gary experiment) and in Seattle, Washington, and Denver, Colorado (SIME and DIME).

Common characteristics of these experiments are detailed below, before a separate discussion of each study that reports on outcomes of interest to this review.

Participants

Over 10,000 people participated in total in the four IMEs. Specific details, where available, relating to characteristics of the participants and sample size for each study are discussed below.

Intervention programme

Participants were randomised to be part of a Negative Income Tax (NIT) programme, or to receive no intervention. NIT operates on the basis that families whose annual income is below a defined level should be offered aid to supplement their income in the form of direct grants. Therefore, rather than paying taxes, families would receive income through negative taxation. This raises family income to a guaranteed level and means that a complex set of welfare entitlements is replaced by a single cash benefit, which decreases as

earned income increases. Guarantee levels varied between studies and in some instances more than one guarantee level was instituted.

Comparison group

Comparison groups received no intervention.

Outcome measures

The primary outcome of interest to the researchers in these studies was the effect of an income guarantee on labour participation. However, some additional sub-analyses were carried out. Amongst these were analyses of the impact of NIT on the health and education of children from low-income families. Specific outcomes of interest are discussed below in relation to each study.

Study Quality

In each of the NIT experiments the Conlisk-Watts (see Basilevsky and Hum 1984) model was used to allocate participants. Unfortunately this method, designed to optimise the numbers allocated to each intervention or control group in statistical terms, can result in selection bias at entry to the study on important confounding variables. In the analyses of these studies researchers have usually attempted to control for these potential confounders. However, control at the analysis stage can only ever be partial and the potential for residual confounding remains. An additional methodological problem lies in the fact that participant response rates were inversely related to the generosity of the interventions, (Connor et al 1999). Attrition rates are not reported in the papers reviewed below.

As these studies are not truly randomised they do not meet the inclusion criteria for this review. However, they provide useful information and we have therefore summarised their results here.

Table 9: Income Maintenance Experiments discussed here and outcomes measured

Experiment	Outcome	Reference
SIME / DIME	School performance	Maynard 1979
Gary IME	School enrolment Labour supply decisions of teenagers	MacDonald 1979
Rural IME	School performance	Maynard 1977
Gary IME	Birthweight	Kehler 1979

Maynard 1979

This paper reports on outcomes for children included in the Seattle and Denver income maintenance experiment. Outcomes of interest were the effects of NIT on school performance.

Participants

Children between the ages of 8-14 of families involved in the overall experiment participated in the study. They were divided into two age bands, 8-10, (n=575) and 11-14 (n=276).

Intervention programme

NIT programme. In this experiment participants could be allocated to one of 11 different levels of income maintenance by the method described above.

Comparison group

The comparison group received no intervention.

Outcome measures

School performance was measured in relation to reading test scores, academic grade point average and days absent from school.

Study quality

Problems relating to the randomisation procedure for all NIT experiments are described above. Additionally, it is unclear whether an intention to treat analysis was used or whether or not outcome assessors were blind to the group allocation of participants.

Statistical analysis

Although the intervention could in fact take one of 11 different levels in this study, the authors made a simple comparison between intervention and control children. For each of the three outcomes of interest the dependent variable in the analysis was the difference between the individual child's score

before and after the study period. These outcomes were then adjusted for a number of baseline factors relating to the family using a multiple regression model.

Comparisons were initially made for all children separately, and subsequently for children in grades 4-6 (roughly equivalent to ages 8-10) and grades 7-11 (equivalent to ages 11-14). A number of further sub-group analyses were then carried out dividing children by school year, length of enrolment in the study and whether or not the family fell below half of the poverty line. Adjusted differences are reported for each measure for each of these sub-groups.

Results

1. Grades 4-6

Overall the adjusted differences in Reading Test Scores were greater in the intervention than in the control groups ($p < 0.01$). In the sub-groups the effect was seen in some year groups but not others, only in children who had participated for at least 3 years and irrespective of pre-participation income level.

No statistically significant differences were seen between intervention and control children on either Academic Grade Point Average or the number of days absent from school.

2. Grades 7-11

No statistically significant differences were seen between intervention and control children on Reading Test Scores or the number of days absent from school. Some statistically significant differences were reported in Academic Grade Point Average, with the control group scoring better than the intervention group on the overall analysis and for some sub-groups. (overall score, $p < 0.01$)

MacDonald 1979

This paper reports on outcomes for children included in the income maintenance experiment set in Gary Indiana and conducted between 1971 and 1974. Outcomes discussed here are the effects of NIT on school enrolment and labour-supply decisions of 16 -18 year olds.

Participants

Eligibility criteria for those taking part in the overall study were that the household head must be black and have at least one dependent under the age of 18. Family income must not exceed 2.4 times the poverty level at the time of enrolment. Of the 1800 eligible families, 1000 were headed by a female and 800 had wife and husband present.

266 participants were included in the analysis of outcomes for young people.

Intervention programme

NIT programme, with two income guarantee levels and two different tax rates (i.e. four different possible groups).

Comparison group

The comparison group received no intervention.

Outcome measures

Numbers of young people from the total group who decided to remain in post compulsory education or to enter the labour market.

Study quality

Problems relating to the randomisation procedure for all NIT experiments are described above. It is unclear whether analysis was carried out on an intention to treat basis or if outcome assessors were aware of the intervention group to which participants' families had been allocated.

Statistical analysis

In this study the authors aimed to answer the question of whether the intervention would increase the likelihood of 16-18 year olds continuing in education. The analytic strategy reflects their belief that this response was likely to vary according to a number of factors, principally gender, whether or not the family actually received any benefit from the NIT (because some families already earned more than the minimum threshold) and the level of extra benefit obtained.

They carried out a logistic regression analysis with the likelihood of participation in school as the dependent variable. Analyses were conducted separately for boys and girls. The initial analysis reported whether or not an effect of the intervention was seen within each gender group for those who did or did not receive benefit after first adjusting for a number of other baseline demographic variables. The analysis then examines whether the level of guarantee and of tax rate affects the outcome.

Results

1. Males

Although there was no overall effect of intervention versus control on the outcome of interest, a statistically significant effect was reported for those families who did qualify to receive benefit. The further analyses did not suggest that either the level of guarantee or the level of tax rate affected the likelihood of staying on in education.

2. Females

Again, no overall effect was reported. For girls, no difference was seen between intervention and control groups even amongst those families who qualified to receive benefit. However, the authors report that there was a statistically significant effect related to level of benefit received.

Maynard 1977

This paper reports on outcomes for children included in the rural income maintenance experiment, set in two rural settings, North Carolina and Iowa. Outcomes of interest are the effects of NIT on school performance.

Participants

A total of 809 families were enrolled in the overall experiment. 501 of these families were located in North Carolina and this portion of the sample population was entirely white, whereas the 308 families in the Iowa location were equally divided between black and white families (Basilevsky and Hum 1984). 847 children from these families were included in at least one aspect of the analysis of school performance.

The selection criteria for enrolment in this study are poorly described. No account is given in the published data of the mechanism used to select participants. However, the authors do say that the sample is representative of “an intellectually impoverished population”. At the time of the study the average family income in the USA was \$9,433 while that of the study sample was \$3,645 in one county and \$3,997 in the other.

Intervention programme

NIT programme. This consisted of three different welfare levels to which people were allocated as described previously.

Comparison group

The comparison group received no intervention.

Outcome measures

Outcomes measured were numbers of days absent from school, comportment grade (behaviour – available only for younger children), academic grade point average and standardised achievement test scores (for the younger group only). Children were divided into two age groups: 6-12 and 13-16.

Study quality

Problems relating to the randomisation procedure for all NIT experiments are described above. It is unclear whether analysis was carried out on an intention to treat basis or if outcome assessors were aware of the intervention group to which participants families' had been allocated.

Statistical analysis

The researchers report differences in scores on each of the outcome measures between intervention and control group children (ignoring different levels of intervention) separately for the two age groups and for the two locations.

Using a standard multi-variate analysis each of the differences is adjusted for a number of factors including various measures of personal characteristics, family background, and home environment.

Results

1. Grades 2-8 (equivalent to ages 6- 12)

In North Carolina, the intervention group scored significantly more positively on numbers of days absent from school, comportment grade, academic grade point average, and one of two ways of reporting standardised achievement test scores.

In contrast, in Iowa, no statistically significant differences were seen between groups on any measure.

2. Grades 9-12 (equivalent to ages 13-16)

No significant differences between intervention and control groups were reported in either area in this age group.

Kehler 1979

This paper reports on outcomes for children included in the income maintenance experiment set in Gary Indiana conducted between 1971 and 1974. Outcomes of interest are whether income transfers through NIT can affect the incidence of low birthweight amongst poor families.

Participants

Information regarding participants in the overall experiment is given above in Maynard (1979). The sample size in the part of the study described by Kehler was 404 in total with 256 in the experimental and 148 in the control group.

Intervention programme

NIT programme, with two income guarantee levels.

Comparison group

The comparison group received no intervention.

Outcome measures

Infant birthweight.

Study quality

Problems relating to the randomisation procedure for all NIT experiments are described above. It is unclear whether analysis was carried out on an intention to treat basis or if outcome assessors were aware of the intervention group to which participants' families had been allocated.

Statistical analysis

The analysis is complex. The estimated effects of treatment on birthweight are calculated using a Tobit analysis. This is somewhat similar to a standard linear regression but does not allow any simple calculation of overall effect. Instead a series of 12 different cohorts are created according to three

variables – mother's age (<18, 18-34, >34), smoking status and interval between pregnancies. Prior to entry in this model birthweights are adjusted for a large range of socio-demographic variables.

Results

Overall there is no significant difference between intervention and control groups. However, in a series of sub-group analyses, beneficial effects were observed in some subgroups. The largest positive effects are seen in the group of mothers who smoked, under the age of 18, with an interval of less than 18 months between pregnancies. Other positive effects are seen in subgroups in whom adverse circumstances cluster. While the authors argue that these are the groups in which the largest effects were expected, it is not clear that this analysis was planned a priori. It is likely that this division into a large number of sub-groups is responsible for the apparently adverse effect of the programme within one group (18-34 year olds with a long interval between pregnancies and who didn't smoke). The results of this type of post-hoc analysis must be treated with scepticism.

Table 10: Description of Income maintenance experiments (IME) where child outcomes were investigated and the main findings

Study	Maynard 1979	MacDonald 1979	Maynard 1977	Kehler1979
Location of study	Seattle and Denver, USA	Gary, Indiana, USA	North Carolina and Iowa, USA	Gary, Indiana, USA
Design	Controlled study, assignment to treatment and control groups using Conlisk-Watts model	Controlled study, assignment to treatment and control groups using Conlisk-Watts model	Controlled study, assignment to treatment and control groups using Conlisk-Watts model	Controlled study, assignment to treatment and control groups using Conlisk-Watts model
Participants	Children from low-income families which were participating in the IME n=851	16-18 year old sons and daughters of household heads in IME n=137 males n=129 females	Children whose parents were participants in the IME N=847	Newborn children of participants in the IME (birth records) n=404
Interventions	Income maintenance through negative income tax, the major features of this are: - a guaranteed minimum annual income - a tax rate which is the amount by which the NIT payment is reduced for each dollar of income In this experiment participants could be allocated to one of 11 different levels of income maintenance by the method described above.	Income maintenance through negative income tax, the major features of this are: - a guaranteed minimum annual income - a tax rate which is the amount by which the NIT payment is reduced for each dollar of income In this experiment there were two income guarantee levels and two different tax rates (i.e. four different possible groups).	Income maintenance through negative income tax, the major features of this are: - a guaranteed minimum annual income - a tax rate which is the amount by which the NIT payment is reduced for each dollar of income	Income maintenance through negative income tax, the major features of this are: - a guaranteed minimum annual income - a tax rate which is the amount by which the NIT payment is reduced for each dollar of income
Outcomes	School performance: 1. reading test scores 2. academic grade point average 3. days absent from school	School enrolment and labour supply decisions of teenagers	School performance: 1. attendance 2. comportment grades (behaviour) 3. academic grades 4. standardized achievement scores	Infant birth weight
Allocation concealment	Unclear	Unclear	Unclear	Unclear
Intention to treat analysis	Unclear	Unclear	Unclear	Unclear
Blinding of outcome assessment	Unclear	Unclear	Unclear	Unclear
Main findings	Grades 4-6 Adjusted differences in Reading Test Scores greater in intervention than	1. Males There was no overall effect of intervention versus control on the	1. Grades 2-8 (equivalent to ages 6- 12) In North Carolina, the intervention	Overall there is no significant difference between intervention and control groups. However, in a series

	<p>control group. Effect seen in some years and not others. Effect only in children who had participated in the IME for more than 3 years. Pre-participation income level inconsequential to effect. No difference between intervention and control children on Academic Grade Point Average or number of days absent from school.</p> <p>Grades 7-11 No statistically significant differences between intervention and control group children on Reading Test Scores of number of days absent from school. Some statistically significant differences in Academic Grade Point Average, with control group scoring better than the intervention group for some sub-groups.</p>	<p>outcome of interest; a statistically significant effect was reported for those families who did qualify to receive benefit. The further analyses did not suggest that either the level of guarantee or the level of tax rate affected the likelihood of staying on in education.</p> <p>2. Females No overall effect was reported. For girls, no difference was seen between intervention and control groups even amongst those families who qualified to receive benefit. The authors report however that there was a statistically significant effect related to level of benefit received.</p>	<p>group scored significantly more positively on numbers of days absent from school, comportment grade, academic grade point average and one of two ways of reporting standardised achievement test scores.</p> <p>In contrast, in Iowa, no statistically significant differences were seen between groups on any measure.</p> <p>2.Grades 9-12 (equivalent to ages 13-16)</p> <p>No significant differences between intervention and control groups were reported in either area in this age group.</p>	<p>of sub-group analyses, beneficial effects were observed in some subgroups. The largest positive effects are seen in the group of mothers under the age of 18, with an interval of less than 18 months between pregnancies who smoked. Other positive effects are seen in sub groups in whom adverse circumstances cluster. While the authors argue that these are the groups in which the largest effects were expected, it is not clear that this analysis was planned a priori. It is likely that this division into a large number of sub-groups is responsible for the apparently adverse effect of the programme within one group (18-34 year olds with a long interval between pregnancies and who didn't smoke). The results of this type of post-hoc analysis must be treated with scepticism.</p>
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4:4 Further studies of interest

Some studies retrieved from the initial searches of databases did not fully meet the inclusion criteria, but they reported on interventions and outcomes of interest and are discussed here. Studies are grouped according to type of intervention. Four focus on food supplementation programmes, one investigates the effect of free educational day care and two report on schemes that provide financial incentives to healthy behaviour. Reasons for exclusion of each of these studies from the systematic review are detailed in Appendix 2.

Studies on food supplementation programmes

Baker 1980

This study was carried out in 1976 in Mid-Glamorgan, South Wales. It aimed to investigate the effect on growth of free school milk given to children aged 7 and 8.

Participants

Twenty-five schools where 20% or more children received free school meals (indicating that they came from low-income families) were selected. Pupils in the relevant age range who were members of families with four or more children were randomised to either intervention or control group. 581 children made up the initial sample. The final sample was 281 in the treatment group and 239 in the control group.

Pre-randomisation selection criteria were intended to identify children at economic disadvantage in comparison to the total population of children in the same geographical location. Questionnaire data gathered from a stratified random sample (n = 3337) of all children in the county of Mid-Glamorgan revealed that those in the experiment were indeed members of families with lower income, higher levels of unemployment, and greater numbers of siblings.

Mean heights and weights for children in the study are compared with all children in the Mid-Glamorgan at the time of the study. Experiment children were found to be 2-3cm shorter and 1.5kg lighter than those of the general population. Pre-selection criteria, aimed at isolating children from families with lower income brackets, resulted in the selection of a group of children of diminished growth. The authors state that the benefit of free school milk may best be demonstrated amongst this group.

Intervention programme

Participants in the intervention group received one third of a pint of free milk each day for six school terms. The drinking of milk was supervised.

Comparison group

The comparison group received no intervention.

Outcome measures

Measures of height, weight and balance were made by the same observer at the outset of the study and on six subsequent visits over two school years.

Study quality

The authors state that participants were randomised from a stratified random sample drawn from the total population of children in the study location. They do not specifically say that allocation of participants to intervention or comparison group was concealed.

The authors report that 8% of the original sample had dropped out at the time of the last follow-up visit, by being persistently absent or leaving the area. Data on these 61 individuals was not available for final analysis.

The outcome assessor was blind to the group allocation of the children.

Results

There was a difference in growth, approximately 3%, in the intervention group as compared to the control group. This is a height gain of 2.8mm and a weight gain of 130g in favour of those children who were provided with free school milk. After adjusting for the mean heights of subjects in each group at the outset of the study, which were a little greater in the control group, the milk provided group had gained an adjusted mean of 2.93mm. These results indicate that there is a small benefit to growth over the two year period, which is statistically significant at the 5% level of probability for height gain in both

genders combined. There is no evidence that the provision of daily milk affects girls differently to boys.

Table 12: Growth in subjects between 1st and 7th visits

	Milk provided			Controls		
	Total	Boys	Girls	Total	Boys	Girls
No.	281	144	137	239	123	116
Height in cm (SD)	9.46 (1.68)	9.21 (1.35)	9.72 (1.35)	9.18 (1.67)	9.10 (1.40)	9.27 (1.91)
Weight in kg (SD)	5.25 (2.26)	4.94 (2.16)	5.58 (2.33)	5.12 (1.90)	4.73 (1.45)	5.53 (2.21)

Kafatos 1977

This study was undertaken in 1972 in South Memphis (USA). It aimed to assess the effect of a supplementary food programme on the growth of children from low income families.

Participants

4000 children from low income families were enrolled on a supplementary food programme which lasted for three years. The following criteria were used to determine eligibility:

- (1) the family had to reside within a designated area
- (2) family income had to be below poverty guidelines for the federal government
- (3) children had to be less than 6 years of age.

Random selection of a sub-sample of these families was made by choosing every twelfth chart from files of families in the programme location. This resulted in a final sample of 250 children from 154 families.

Intervention programme

Families received supplementary food, which included dairy products, cereals, meat and vegetables. This was distributed on a monthly basis and amounts of each food stuff depended on the age and number of children in a household.

Comparison group

Data from the study sample was compared with data collected in a similar survey conducted in the same area three years previously. The comparison group was therefore not contemporaneous.

Outcome measures

Each child was measured for height, weight and head circumference, and for levels of haemoglobin, serum iron and vitamins A and C. This was compared with data collected from a different group of children three years previously. It

is unclear what length of time the children had been receiving nutritional supplements through the food programme in advance of measures being made.

Study quality

Allocation of families to the study appears to have been concealed. Because all those from whom data was collected were part of the study group, it was not possible for blinding of outcome assessment to be achieved.

The lack of a contemporaneous control group is a weakness of this study. Moreover, the authors themselves point out the problems they encountered in relation to uncontrollable variables, which prevented direct correlation of food consumption with nutritional improvement. For instance they were unable to monitor a child's actual daily food intake, nor could they control for whether or not a family collected its food allotment on a regular basis.

Results

Findings from this survey show nutritional improvement amongst the sample. High frequencies of retarded height and weight, which had been noted in 1969, had decreased considerably by 1972. The frequency of anaemia also declined significantly from approximately 25% in 1969, to 11% by 1972. The authors conclude that in the absence of other recognisable intervening factors federal food assistance to preschool children produces significant improvements in growth rates and other nutritional measures.

Table 13: Distribution of heights and weights on anthropometric charts

	Heights		Weights	
	1969	1972	1969	1972
Below 3 rd percentile %	16		6	16
Below 25 th percentile %	50		29	50
Below 50 th percentile %	70		54	73
Below 75 th percentile	90		72	86
Total number of children	300		250	300

Lieberman 1976

This study was located in a low-income neighbourhood of Los Angeles (USA), and was carried in the early 1970s. It sought to compare the effect of providing free school breakfasts to children with outcomes for children who received no intervention.

Participants

Children were drawn from two neighbouring schools. They were aged between 7 and 10 years of age. The schools were chosen because their students had equally low performance on area-wide standardised reading tests, the principals and parent/teacher associations were enthusiastic about the project, and the children's families were of similar socio-economic status.

One school hosted the intervention and the other provided a control group. Children in the study were not randomised, but simply took part in whatever arm of the study (intervention or control) their school had been allocated.

Intervention programme

Children from school B were offered free school breakfast five days a week for a period of eight months. Breakfasts consisted of 'traditional hot meals', in keeping with the wishes of the host community. These meals were designed to provide a quarter of the recommended dietary allowance for participants. A record of each child's attendance for breakfast was kept.

Comparison group

The comparison group received no intervention.

Outcome measures

Outcomes measures included school attendance, school performance and psychological tests administered by a clinical psychologist that assessed participants' ability to concentrate, to remember, to think abstractly, and to work in a classroom environment. Physical examinations were undertaken by local health centre paediatricians. Ninety six percent of those in the

experimental group and 93% of the control group took part in the physical assessment. Authors do not report percentages of children who took part in the psychological tests. School attendance and performance records were reviewed for all study children.

In addition, interviews were carried out with parents to gather information about their educational level, family size and family income. Parents and child participants were together asked to recall what they had eaten or drunk in the previous 24 hour period, which in all cases was a school day. Ninety four percent of parents of participating children took part in these interviews.

Study quality

Authors report that randomisation of subjects had to be discarded in order to ensure the co-operation of schools and the wider school community.

The drop-out rate was 14.6% in the intervention group and 9.3% in the control group. This was due to participants moving to another school. Data was not available for these children so they could not be included in the final analysis.

It is unclear whether outcome assessors were blind to the group allocation of participants.

The participating group and location of the study is not necessarily comparable to other populations and areas, therefore the generalisability of the findings are questionable. The lack of random allocation weakens the findings of this study.

Results

No statistically significant increase in school attendance or performance was found between the participating schools. The same was true of the measures carried out in the psychological tests. Authors therefore conclude that they found no advantage was gained by children through their participation in a free school breakfast programme.

Gietzen 1980

This study was undertaken in a semi-rural district of North California (USA) in the late 1970s. It investigates the effect of nutritional supplement on physical and educational outcomes for disadvantaged children.

Participants

The records of a total school population of approximately 1,100 school students were screened to select children who had taken part in two programmes which had a nutritional component and two programmes which had no nutritional component. The former were regarded as intervention groups and the latter as comparison groups.

The following information about participants in the four cohorts is available:

- (1) n=100, children aged 4 when they entered the programme, duration of time spent in it is not recorded, no information about family socio-economic status
- (2) n=113, children aged 6 at the outset of the programme, continued throughout elementary school, no information about family socio-economic status
- (3) n=55, children aged between 6-8 years, from low income families
- (4) n=64, preschool children of parents in middle and upper income brackets.

Intervention programme

- (1) Head start nutritional programme: participants received their lunch at school
- (2) Free school lunch programme.

Comparison group

- (3) Title 1 – compensatory education programme, no nutritional component
- (4) Preschool programme, required parental participation and tuition, no nutritional component.

Outcome measures

Family size and birthweights of children were compared among the four study groups. Educational outcomes were measured using the Comprehensive Test of Basic Skill, which was routinely administered bi-annually to all students in the district.

Physical outcome variables studied included the number of absences from school for medical reasons, physical fitness as demonstrated by performance on a six minute jog and indicators of growth including height for age, weight for age, and weight for height.

Study quality

Participants were not randomised to intervention groups. It is unclear whether or not outcome assessors were aware of the group allocation of participants. Details of attrition are not recorded in the paper.

Comparison groups were not contemporaneous. Those who received the educational programmes without a nutritional component took part in these interventions some time in advance of those in Head Start and free school lunch programmes. Moreover, participants in each of the four cohorts were not necessarily similar in terms of age or socio-economic background, making direct comparison between groups difficult. Additionally, data compared was limited to what was available in the school database at the time of the study. This influenced the choice of variables selected to address the areas of interest and therefore restricted the scope of the study.

Results

Findings indicate that none of the programmes resulted in improved educational outcomes enabling children to achieve a level commensurate with their more advantaged peers. Indicators for physical status demonstrate a potential for better performance among Head Start children, compared to those who simply received free school lunches. Boys in the Head Start programme were significantly taller on all measures used over the total age

range. Compared with free school lunch boys, those from Head Start also performed better on tests for physical fitness and had fewer absences from school.

Free Educational Day Care

Campbell 1986

This was a 4.5 year longitudinal study carried out in North Carolina (USA) in the early 1980s. It aimed to assess the benefits of providing free educational day care from birth for children of single teenage mothers.

Participants

All mothers participating in the study were under 17 years of age and had one child. They were all still in high school or junior school when their child was born. None of the mothers in the experimental group were married, two in the control group were married, however both these marriages ended before the baby was 18 months old. The experimental group had 14 participants and the control group had 15 participants. The sample was randomly assigned to either experiment or control group.

Participants from both experimental and control groups were demographically similar and had access to the same basic set of community resources. They attended the same high schools had access to the same college and vocational school system and had the same resources for low cost medical care for themselves.

Intervention programme

The intervention comprised a systematic education programme delivered in a day care centre. Specific features of the centre included:

- (1) the requirement that children be admitted in early infancy, that is before 3 months of age
- (2) the delivery from infancy of a systematic curriculum designed to enhance cognitive, language and social development
- (3) the programme was totally free to the parents
- (4) medical care for children was available at the centre
- (5) free transportation for children was provided.

Comparison group

Participants in the comparison group received no day care programme as part of the study. However, as an incentive to take part they were given free nappies and to eliminate possible nutritional differences control families received free infant formula for the first 15 months of their child's life (whether or not some of the control sample were breastfed is not discussed in the paper).

Outcome measures

- (1) intellectual benefits to children – measured by a general cognitive index
- (2) likelihood of mothers completing high school
- (3) likelihood of mothers obtaining post-secondary education
- (4) likelihood of mothers becoming self supporting

Assessments of child and family characteristics were carried out at specified points throughout the study and included parent interviews, measures of parental attitudes, and standardised tests in children. Demographic variables periodically assessed included facts about the mother's education, occupation and income, marital status, and for controls, utilization of day care. It is important to note that control group families were free to set up their own day care arrangements. The crucial difference between control and experimental group was that the day care found by control families was unlikely to match the high standard of care offered to intervention children.

Study quality

The paper states that families were randomly assigned to either treatment or control group. Whether or not allocation was concealed is not stated.

There was a drop out rate of 14%, that is 5 of the original 34 participants did not continue with the study. The reasons are detailed in the paper.

Because of the nature of the interventions it seems unlikely that outcome assessors would be blind to the group allocation of participants. However, this is not reported on in the paper.

In spite of the small sample size, the longitudinal nature of this study and the methods of data collection lend reliability to the findings.

Results

Mothers in the experimental group were found to have an increased likelihood of completing high school, obtaining post-secondary education and becoming self-supporting. While more than three-quarters of the teenage mothers in the experimental group graduated from high school and became self-supporting, less than half of the mothers in the control group attained these goals. Children of mothers in the experimental group achieved higher test scores than children in the control group.

The authors suggest that this study is indicative of a strong trend towards the benefits of free educational day care, but that replication using a larger sample group is an appropriate next step.

Financial incentives to healthy behaviour

Two studies concentrated on incentives paid to parents to encourage them to take certain steps that would potentially defend their children's health. These were a financial incentive to attend for a dental check-up (Reiss et al 1976) and an incentive to purchase a bicycle helmet for children (Parkin et al 1995). These studies are described below.

Reiss 1976

Okada and Sparer (1976) reported the considerable gap in the number of dental visits between people living on a low income and those in a higher income bracket. In some instances visits to the dentist were less than two-thirds the national rate and this was strongly correlated with low socio-economic status. Reiss's study carried out in Florida in the early 1970s examined the effectiveness and cost-effectiveness of three different techniques to encourage low-income parents to seek dental care for their children.

Participants

The sample was drawn from the population of a small rural elementary school. All 180 children who attended the school were screened for dental problems by a dentist and hygienist. Fifty children from 35 low income families were in need of dental care. This group made up the study sample. The mean annual income for participating families was \$5000.

Intervention programme

The three interventions that aimed to encourage parents to take children to the dentist were as follows:

- (1) One prompt: in this case parents received a single notification of the outcome of dental screening in the form of a note. Notes were typed on school headed paper and sent home with children in sealed envelopes. A redeemable coupon which could be used to purchase school goods was attached to the envelope, to increase the likelihood of parents receiving the envelope. Children were told to get their parent's signature in order to spend the voucher. The note described the screening procedure, the extent of the dental problem, its potential consequences for the child's health and recommendations on what parents should do next.
- (2) Three prompts: Participants in this group received three prompts in the following order, a note identical to that of the one-prompt group, followed by a phone call from the school and finally a home visit by

a dental hygienist. These notifications were spaced three weeks apart, to allow parents time to make appointments in the interim.

- (3) One note plus a \$5 incentive: Parents of children in this group received one notification as in the other two groups. In this instance it also included a 'Dental Coupon' to the value of \$5. To receive the value of the coupon, parents were instructed to make a dental appointment for their child, take the child to the appointment where the dentist would sign the coupon and finally return the coupon by mail in an enveloped provided.

Comparison group

Outcomes for participants in the three groups described above were compared with each other.

Outcome measures

Measures of initial visits to the dentist by group allocation were made by reviewing public health dental clinic records, for which a specific recording system had been developed for the purposes of this study. Dental records of those who had made initial visits were checked to determine the frequency of follow-up visits.

The other outcome of interest for this study was the cost-effectiveness of each prompt procedure. The total cost for the each of the three treatments was calculated.

Study quality

Allocation to the intervention was not truly random as families were placed in three matched groups prior to randomisation. The authors do not report on the attrition rate, or whether an intention to treat analysis was employed. Because of the nature of the intervention it would not have been possible for outcome assessors to be blind to group allocation of participants.

Results

Twenty three percent of families in the 'one prompt' group took their children to a dental appointment. The 'three prompt' method resulted in 60% of children being taken to the dentist. The 'one prompt plus \$5 incentive' was slightly more effective with 67% of parents attending the dentist with their children. This method resulted in the most immediate response, with 75% of dental visits taking place in the first three weeks of the study. Initial dental visits by families in the 'three prompt' intervention tended to take place in the latter weeks of the study, while in the 'one prompt' group initial visits were more widely spread.

Five families from the 'one prompt plus incentive' group completed their course of treatment, while one from each of the other two groups did likewise.

The 'one prompt plus incentive' was found to be the most cost effective of the three interventions. The authors therefore consider it to be the treatment of choice to maximise effect and minimise cost.

Parkin 1995

Only a minority of children wear cycle helmets on a regular basis (DiGuseppi et al 1990, Weiss 1986). Parkin 1995 argues that cycling accidents are responsible for at least 10% of all injury deaths of children between 5-14 years, and suggests that cycle helmets can reduce the risk of head injury by 50-85% (Dorsch et al 1987, Worrel 1987, Thompson et al 1989).

This study was carried out in a geographically defined community of Toronto (Canada), in 1992. It aimed to evaluate the combined effect of an educational and incentive programme in relation to children's cycle helmet use.

Participants

1415 children aged 5 – 14, from three schools in a low-income area were selected. Schools in two other low-income areas were identified as controls, with no intervention, and schools in another low-income area where one aspect of the intervention had been received also acted as a control. Total numbers of children in the control groups are not given.

Intervention programme

In each intervention school a week was nominated as 'Bike Smart Week'. This involved an educational programme aimed at encouraging children to wear a cycle helmet. In addition helmet-fitting and sales were arranged at each school, and high-quality helmets were sold at a quarter of their usual retail price. Children and/or parents purchased helmets at their own discretion.

Comparison group

Schools in two areas received no intervention and in a third area schools received the educational programme only.

Outcome measures

The primary outcome measure, helmet use, was measured by observers trained in collecting reliable observational data (age, gender, helmet status, riding companionship). All schools and parks in the study location were observed as well as five each of major intersections and residential streets, which were randomly selected from each area. Locations were geographically distinct, in that their boundaries, expressways, ravines, railway tracks and hydroelectric power lines were natural barriers to cycle travel. The authors suggest that these barriers helped to minimise misclassification, that is classifying a cyclist in an area where they did not reside.

Study quality

Allocation to the intervention group was not randomised but depended on attending schools selected to take part in the study. The intervention programme appears to have been developed as part of a health promotion initiative and the research to evaluate its usefulness instigated later. Research locations were therefore determined by those schools who had received the intervention at the time of the study.

It is unclear whether or not observers collecting outcome data were blind to the intervention to which children in each area had been allocated.

Although the number of children observed reached 1800, this method of data collection is potentially flawed, as other variables may have accounted for the low numbers of children wearing helmets on the day of the observation. Triangulation of this data using data from another source might strengthen reliability of these findings.

Results

The study found that 64% of children purchased helmets, increasing ownership between 10-47%. However, observed bicycle helmet use was no different to that in the three comparison areas.

The authors conclude that the results of the study do not support the efficacy of a helmet subsidy programme in increasing helmet use amongst children.

Table 14: Description of studies of further interest and their main findings

Study	Baker 1980	Kafatos 1977	Lieberman 1976	Gietzen 1980
Location of study	Wales	USA	USA	USA
Design	Randomised controlled trial	Quasi-randomised trial	Cohort study	Cross-sectional. Longitudinal design
Participants	Children aged 7-8 from families with low socio-economic status Intervention group n=281 Control group n=239 8% attrition rate due to persistent absence from school or children leaving the area.	Pre-school children n=250 from 154 low income families	Children in grades 3-6 in two adjacent schools in deprived neighbourhoods in a US city	Children from low income families involved in one of the following four programmes Head Start n=100 Free school lunch n=113 Title 1 (see below) n=55 Preschool programme n=64
Interventions	Free school milk: one third of a pint over a period of six terms, compared with no intervention	Supplementary food programme	Free school breakfast five days per week compared with no intervention	1. Head Start nutritional programme: participants received their lunch at school 2. Free school lunch programme 3. Title 1 - compensatory education programme without a nutritional component 4. Preschool programme, which required parental participation and tuition, there was no nutritional component
Outcomes	Measurement of height, weight and balance	Measurement of height and weight of children	Anthropometric measures School attendance School performance	Measures of: Height Physical ability Comprehension Number of days absence from school
Allocation concealment	Appears to be adequate	Unclear	Unclear	Unclear
Intention to treat analysis	No	Unclear	Unclear	Unclear
Blinding of outcome assessment	Good	Unclear	Unclear	Unclear
Main findings	Difference in growth of 3% in favour of the intervention group over the control group.	Nutritional improvement found amongst the intervention group over time	No statistically significant difference on any measure was found between the intervention group and the control group	No differences found in educational outcomes. Indications that physical status of boys in the Head Start programme improved.

Table 14: cont'd

Study	Campbell 1986	Reiss 1976	Parkin 1995
Location of study	USA	USA	Canada
Design	Randomised controlled trial	Random assignment to treatment and comparison groups	A prospective controlled study
Participants	Teenage mothers, 17 years old or younger Intervention group n=14 Control group n=15	51 children from 35 low income families	Bicycling children aged 5-14 years from areas of low average family income, n=1415
Interventions	Free day care to intervention group which included: <ul style="list-style-type: none"> - focus on education and development - on site medical care for children - free transportation to the day centre NB; children required to begin attending day care in early infancy	One prompt – written notification to attend a dental check-up Three prompts – written notification, telephone call and home visit to attend dental check-up One prompt – written notification plus \$5 incentive	\$10 bicycle helmets and an educational programme to endorse the benefits of wearing a helmet
Outcomes	Intellectual benefits to children – measured by a general cognitive index Likelihood of mothers completing high school Likelihood of mothers obtaining post secondary education Likelihood of mothers becoming self supporting	Initial dental visits and follow-up dental visits Cost effectiveness of each different method of intervention	Helmet use
Allocation concealment	Unclear	Unclear	Not applicable
Intention to treat analysis	Yes, though one mother from the experimental group for whom data was not available	Unclear	Not applicable
Blinding of outcome assessment	Unclear	Unclear	Inadequate
Main findings	The intervention group performed better than the control group on all measures.	Parents were motivated by the financial incentive and when up to three prompts were made. The incentive option proved to be the most cost effective.	Observational data found no increase in cycle helmet use.

Five

Discussion

There is a lack of high quality experimental evidence to enable adequate assessment of the effectiveness of financial benefits delivered as an intervention to reduce inequalities in child health.

The studies identified in this review, which attempted directly to address the effects of a financial intervention, offer some suggestion of a positive effect. However, this is far from consistent and interpretation is weakened by methodological problems with most of the studies.

The association between low income and poor outcome in all dimensions of child health is strong and consistent across countries and time. On the basis of current evidence we have not been able to establish that direct financial benefits delivered as an intervention are effective in redressing this balance in the short term. This is in essence a statement of “no evidence effect” rather than of “evidence of no effect”.

The findings of this review provide insufficient evidence to assess the effectiveness of financial benefits in reducing inequalities in child health. The main finding is thus the paucity of high quality experimental evidence.

The three randomised controlled trials identified in this review provide limited evidence on the effects of monetary payments on childhood outcomes. There is some evidence from the included study most closely addressing the underlying research question (Huston, 2001) that such payments may have a positive effect on academic performance and behaviour in boys but no apparent effect in girls. The suggestion that this intervention may have positive effects on educational outcomes is further supported by results from some of the US income maintenance experiments, although these studies are of lower methodological quality. The other two included randomised controlled trials are difficult to interpret in relation to the central question. One compares two different welfare schemes with differing types and amounts of benefit and the other offered participants trivial sums of money to persuade them to attend a peer support group.

We address the so-called 'income maintenance' studies in some detail in this report. These four studies were carried out in the USA in the 1970s and tested the effects of a negative income tax on a number of outcomes. They did not meet the inclusion criteria as careful reading revealed that, although they are often described as randomised controlled trials, in fact participants were systematically allocated to intervention arms. This led to significant imbalance in baseline characteristics between intervention groups, which the authors then attempted to control for in the analyses. This approach is fraught with the likelihood of residual confounding.

The interpretation of these four studies is hindered also by the method of allocation used. Although the principal outcome of interest was labour force participation, each of the three studies identified reports on one or more child outcomes. Overall these studies tend to suggest improvements in measures such as school performance and attendance but the results are patchy and are often reported only in some sub-groups. It is seldom clear that these sub-

groups were defined a priori. This is a particular problem in considering the study by Kehler et al (1979), (often called the Gary experiment) which reports on the effects of the programme on birthweight. Here there is no overall effect between groups, but after a complex sub-division into smaller sets the authors report statistically significant positive effects on birthweight, in what they argue are the groups whom they would have expected to benefit most. Their analyses are difficult to interpret since in some sub-groups the intervention had a statistically significant detrimental effect.

There is a very strong and consistent association in observational data between family income and virtually every health, behavioural and educational outcome in children. This association is again reported in all of the studies discussed here with substantial levels of ill health reported amongst children of participants. This association is seen even in circumstances where virtually all families are able to meet the basic material needs of their children. A number of studies have highlighted the significant stress experienced by families with young children on low incomes and the association with adverse psychological outcomes for children and mothers. As with all observational data it is unclear whether these associations can be interpreted as reflecting direct causation or whether there are important confounding variables. In addition, it is unclear whether any effects are the consequence of long term material deprivation, and whether such effects could be remedied in the short term by the provision of increased financial resources. The response of government to the recognition of the increased risk to children of the poorest families has been, in general, to provide services to attempt to ameliorate adverse consequences. A central question must be whether the resources currently used to provide such services might better be employed by increasing direct financial provision for families.

The studies identified in this review which attempted directly to address the effects of a financial intervention offer some suggestions of a positive effect. However, this effect is far from consistent and the interpretation is weakened by methodological problems with most of the studies. It is important to remember that the association between lower income and poorer outcome

across all dimensions of child health is strong and consistent across countries and time. On the basis of current evidence we have not been able to establish that direct financial benefits delivered as an intervention are effective at redressing this balance in the short term. This is in essence a statement of no evidence of effect rather than evidence of no effect and reflects the lack of high quality experimental studies in this area. No single study, observational or experimental, has suggested any disbenefit to receiving added financial benefit.

Implications for policy

Policy decisions require the weighing of options in conditions of uncertainty. Where the empirical evidence of the effect of potential interventions is weak, the potential for harm associated with the intervention is crucial. There is no suggestion that giving increased resources to families has harmful effects though there are inevitably opportunity costs. Given the weight of observational evidence linking poor access to resources with adverse health outcomes and the suggestive evidence from these studies of benefits from additional payments, the case for campaigning for increased transfer of resources to families with young children is strong.

Implications for research

This review demonstrates that significant gaps remain in our knowledge in this area. In particular, the relative benefits of services and direct payments to disadvantaged families requires further work. There is a need for methodologically robust trials comparing currently fashionable interventions, such as parent training programmes, with equivalent direct payments to families. The data here suggest that it may be particularly fruitful to examine the effects of variables relating to school performance, behaviour and emotional outcomes.

Six

Conclusion

The central objective of this study was to assess the effectiveness of financial benefits to families in reducing inequalities in child health. The fundamental premise, explored in the background section, is that inequalities in health are related to the income gradient. If income is increased, are there related reductions in health inequalities?

A systematic review facilitated exploration of existing experimental research evidence, with the aim of investigating our research question. However, the number of relevant studies was low and whilst there are indications that financial benefits to poor families led to some improvements in outcomes for children, this evidence is partial and in some cases limited by the methodological quality of studies.

The observational data included in reviewed studies strongly endorses the link between low income and poor health, educational achievement and social development. Whilst this review has not been able to establish that increasing financial resources to poor families improves outcomes for children in the context of an experimental intervention, we consider this likely to be due to the absence of relevant high quality research in this area.

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Appendix 1

Search strategy design

- #1 (finance* or income* or poverty or poor or disadvantage* or inequity or unequal or impoverish* or inequalit* or voucher* or loan* or cash or socioeconomic or economic* or money or monetary or charit* or demogrant or temporary assistance for needy families or benefit* or welfare or fiscal or budget* or welfare recipient* or welfare service* or tax* or credit*).mp.
- #2 Thesaurus (MeSH) search, finance / income related terms
- #3 1 or 2
- #4 exp child/
- #5 child*.mp.
- #6 exp pediatrics/
- #7 pediatric*.mp.
- #8 paediatric*.mp.
- #9 or/#4-#8
- #10 perinat*.mp.
- #11 neonat*.mp.
- #12 newborn*.mp.
- #13 infan*.mp.
- #14 bab*.mp.
- #15 toddler*.mp.
- #16 boy*.mp.
- #17 girl*.mp.
- #18 kid*1.mp.
- #19 school?age*.mp.
- #20 juvenile*.mp.
- #21 under?age*.mp.
- #22 teen*.mp.
- #23 minor*.mp.
- #24 pubescen*.mp.
- #25 adolescen*.mp.
- #26 youth*.mp.
- #27 young person.mp.
- #28 young people.mp.
- #29 or/ #10-#28
- #30 infan*.jw.
- #31 child*.jw.
- #32 pediatric*.jw.
- #33 paediatric*.jw.
- #34 adolescen*.jw.
- #35 or/#30-#34
- #36 #9 or #29 or #35
- #37 #3 and #36
- #38 RANDOMISED-CONTROLLED-TRIAL in PT
- #39 CONTROLLED CLINICAL TRIAL in PT
- #40 RANDOMIZED-CONTROLLED-TRIALS

#41 RANDOM ALLOCATION
 #42 DOUBLE-BLIND-METHOD
 #43 SINGLE-BLIND-METHOD
 #44 #38 or #39 or #40 or#41 or#42 or#43
 #45 TG=ANIMAL not (TG=HUMAN AND TG=ANIMAL)
 #46 #44 not #45
 #47 CLINICAL-TRIAL in PT
 #48 explode CLINICAL TRIALS
 #49 (clin* near trial*) in TI
 #50 (clin* near trial*) in AB
 #51 (singl* or doubl* or trebl* or tripl*) near (blind* or mask*)
 #52 (#51 in TI) or (#51 in AB)
 #53 PLACEBOS
 #54 placebo* in TI
 #55 placebo* in AB
 #56 random* in TI
 #57 random* in AB
 #58 RESEARCH –DESIGN
 #59 #47 or #48 or #49 or #50 or #51 or #52 or #53 or #54 or #55 or #56 or
 #57 or #58
 #60 TG=ANIMAL not (TG=HUMAN and TG=ANIMAL)
 #61 #59 not #60
 #62 #61 not #46
 #63 TG=COMPARATIVE STUDY
 #64 explode EVALUATION-STUDIES
 #65 FOLLOW-UP-STUDIES
 #66 PROSPECTIVE STUDIES
 #67 control* or prospectiv* or volunteer*
 #68 (#67 in TI) or (#67 in AB)
 #69 #63 or #64 or #65 or #66 or #67 or #68
 #70 TG-ANIMAL not (TG=HUMAN and TG=ANIMAL)
 #71 #69 not #70
 #72 #71 not (#46 or #62)
 #73 #37 and #73

- Key**
- **'exp'**: Selects medical subject headings and explodes all narrower / related headings
 - **'/'** Denotes MeSH heading
 - **'mp'** OVID term, having searched the word(s) within title, abstract and MeSH
 - **'\$'**: Truncation symbol to capture numerous word headings
 - **'\$1'**: Truncation symbol to capture word endings to only one character
 - **'?'**: Wildcard character
 - **'jw'**: Searches for a word in the journal field title
 - **'ab'**: abstract
 - **'ti'**: title
 - Upper case denotes controlled vocabulary.
 - Lower case denotes free-text terms

Appendix 2

Table 15: Details reasons for excluding retrieved studies from the systematic review*

Papers reporting on aspects of the US Income Maintenance Experiments	
Maynard 1979	Not an RCT
MacDonald 1979	Not an RCT
Maynard 1977	Not an RCT
Kehler 1979	Not an RCT
Studies which did not meet the inclusion criteria of the systematic review but which are of interest to this study	
Baker 1980**	Not an income intervention
Campbell 1986**	Not an income intervention
Reiss 1976**	Not an income intervention
Kafatos 1977**	Not an income intervention
Lieberman 1976**	Not an RCT
Gietzen 1980**	Not an RCT Not an income intervention
Parkin 1995**	Not an RCT Not an income intervention
Jones 1991	Not an RCT, outcomes not salient to this study
Fraker 1995	Outcomes not salient to this study, children in sample not all in specified age group
Futrell 1975	Not an RCT Not an income intervention
Sapp 2002	Not an RCT Not an income intervention
Stipek 1997	Not an RCT Not an income intervention
William 1997	Not an RCT Not an income intervention

*Studies are identified by the name of the first author and the date of publication,

full details are recorded in the reference section of this paper.

** These studies discussed on pp30-38. Although they fall outside the scope of this review, they are of broader relevance in relation to child poverty.

Report Two: A scoping exercise of charities in the UK who provided direct financial benefits low income families.

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Examples of occupational benevolent funds	8
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Introduction

This report presents findings from a scoping exercise of a sample of UK charities that provide financial benefits to families who live on a low income. It forms part of a wider study that investigated whether money makes a difference in reducing inequalities in child health. This wider study formed a systematic review, which is presented in an allied report.

Objectives

The objective of this study was to:

- identify charities in the UK who provide direct payments to families with children who live in financial hardship;
- establish the scope of the charities work, their funding criteria; and
- establish whether they have carried out any formal evaluation of the support they give to families.

Methodology

The strategy used for this scoping exercise had three main elements.

1. Personal contact

A meeting was arranged with the Director of the Family Welfare Association (FWA), a charity known to provide financial benefits to low income families. The purpose of this was to gather information about the work of the FWA and inquire about other UK charities who perform a similar role. This initial meeting resulted in the identification of contacts for three further organisations.

2. Written queries and web searches

Further data on the Family Welfare Association and the Family Fund was gathered via websites (www.fwa.org.uk; www.familyfundtrust.org.uk). Additionally, each charity identified was contacted by letter with a request for further information (see appendix 1). All charities responded providing the information requested.

3. Internet searches

Internet searches were carried out using combinations of the following key words:

Charit*, child*, grant*, income, direct payment, famil*, disadvantage*, cash, poverty, finance*.

These searches yielded references to several sites one of which was potentially of interest to this study (www.charitychoice.co.uk). This website provided a list of occupational benevolent funds, and provided contact details for 47 funds. A letter was sent to each fund where full contact details were available (Appendix 1).

Findings

This section presents the findings of this scoping exercise. Firstly, it describes the work of the general welfare charities, the source and scope of their funding and the ethos that underpins their activities. Secondly, this section discusses an evaluation of the work of one of these charities, namely the Family Welfare Association. Finally, there is a general description of the work of occupational benevolent funds followed by details of a representative random sample of those occupational benevolent funds whose staff replied to the requests for information. Staff from forty-seven funds were contacted by letter, and 32 replied.

General welfare charities

The largest charities in the UK to whom families living on a low income can apply for financial assistance include the Family Welfare Association, The Frank Buttle Trust, Glasspool Charity Trust and The Family Fund. The first three derive their funds from private trusts, which often originate from benevolent bequests, many from the Victorian era. The Family Fund is supported by government monies.

The Family Welfare Association (FWA)

This charity manages seventy-two trusts with an annual income of approximately £1.5 million. Because of the high number of trusts, each with their own eligibility criteria, the charity finds that it is usually able to accommodate the diverse needs of applicants, with the exception of funeral expenses or assistance with the repayment of debts. There is also little provision within the criteria stipulated in bequests for the financial support of refugees or asylum seekers.

The FWA has made no formal evaluation of the effect of their financial assistance to families, but they have carried out a survey of the impact on families of living in poverty. This survey in part investigates the health impact, both emotional and physical, of life on a low income. No formal analysis has so far been undertaken.

The Frank Buttle Trust

Founded in 1953, The Frank Buttle Trust helps children and young people who are seriously in need, throughout the UK. It makes grants to meet the critical needs of individual children and young people whose safety, health or development are at risk. In 2000/2001 it made 3,768 grants totalling £1.6 million.

The trust's key objectives are to contribute to the minimum standards of material provision, emotional well-being and stability by providing grant aid towards the needs of children and young people who are facing severe

problems and do not have parental support, and to adopted children and young people who are facing severe problems. They also aim to provide assistance to young people in overcoming problems they faced in childhood, and may continue to face, and to equip them to enter adult life. An example of this is the provision of grant aid to assist with setting up a home or obtaining academic qualifications or training for employment.

The Frank Buttle Trust also has a role in lobbying government to adopt appropriate policies to meet the needs of children and young people. Additionally, it supports research working to establish the most effective ways in which to meet the needs of vulnerable children and young people.

No formal evaluation has been carried out to assess the effect of this support.

Glasspool Charity Trust

The Glasspool Charity Trust set up in 1939, aims to “provide relief to the poor, sick and necessitous regardless of their background”. They have an annual income of £84 million and will help with the purchase of household equipment, clothing and holidays. They do not assist with the repayment of debts.

Glasspool has not carried out a formal evaluation of the effect of their support to children and families, however they state that the numerous letters and messages of thanks and appreciation pay testament to the positive impact of their work (personal communication).

The Family Fund

Funded by the governments of Northern Ireland, England, Wales and Scotland, this trust has an annual income of approximately £45 million. It is organised to disperse money to UK families of children with a disability, whose parents are not disabled, but who live on an income below a defined amount, currently £23,000 per annum, with savings of less than £8,000 (www.familyfundtrust.org.uk accessed 09.03). The Trust aims to ease stress on families who care for a disabled child or children, by providing grants and information related to the care of that child. To be eligible children must have

a severe disability and be under sixteen. The organisation has established criteria to assess the severity of a disability. This includes the amount of time needed for the care and supervision of the child, the child's mobility needs and abilities, communication needs and abilities, behavioural difficulties, and the presence of a life-threatening illness.

The following are considered to be within the scope of the charity's funding:

- holidays or leisure activities so that disabled children and their families can have a break
- washing machine or tumble drier
- bedding or clothing
- a new bed for the child with disabilities
- driving lessons for the child's main carer
- transport expenses if Disability Living Allowance is not received by the family
- a fridge freezer
- hospital visiting costs
- telephone, where it is essential for the medical or social needs of the disabled child
- play equipment adapted to the child's needs
- other types of help suggested by families will also be considered.

Formal evaluation has been carried out by Bryony Beresford of the Social Policy Research Unit, University of York (Beresford, 1993). The findings of this study are reported in the following section.

Assessment of the impact of the Family Fund

Beresford (1993) conducted a study of the impact of the Family Fund on easing the stresses associated with caring for a child with severe disabilities. Findings are based on a sample of 162 mothers who completed a questionnaire before and after receiving financial help. The questionnaire inquired about the possible stress experienced by mothers in caring for their child and how they had adjusted to having a child with a severe disability. It

also investigated whether receiving help from the Family Fund could be shown to alleviate these pressures.

The study reports that the financial help received had a significant impact on how mothers viewed the difficulties, both emotional and practical, of caring for their disabled child. Findings also suggest improvements in mothers' well being and adjustment and that this can be linked to the Fund's intervention.

The findings from mothers who received help (n=162) were compared to mothers whose applications had been turned down (n=20). Amongst the latter group, no significant change was evident. However, the small sample size of the control group may reduce the strength of the findings. Moreover, responses amongst this group may have been influenced by the fact that their applications were rejected. The author acknowledges that the apparent benefit reported by those assisted by the Family Fund could reflect that mothers may have "deliberately or inadvertently overemphasised their problems or difficulties" (Beresford: 1993: 376) when completing the first questionnaire. The time of completing it coincided with the time they were applying to the fund although respondents were reminded that the questionnaires were confidential and would not in any way impact on the outcome of their application.

Beresford reports that this study indicates that modest improvements in financial resources or access to improved utilities, such as a new washing machine, have a "significant effect, at least in the short term" (p.377) on the way in which mothers cope with caring for their child. Beresford recommends that a range of services (e.g. respite care, or advice on behaviour management) as well as grant aid, would be an appropriate response to the needs of these mothers.

Further research looking at the impact of financial support from charitable organisations is required to underpin the decisions of charities and trusts in funding decisions and developing future grant-making strategies.

Occupational benevolent funds

These are invested funds allied to particular occupations. As well as current and former employees themselves, the funds support dependents (usually children but in some instances spouses). Former employees may be retired, unable to work because of illness or disability or deceased. A very broad range of occupations are represented by these charitable organisations.

The financial support that this network of organisations makes can constitute a substantial contribution towards improving recipients' financial position. The support is in many cases long-term; for example in the case of the children of current or former employees it is often sustained until the child reaches the age of 18, and sometimes until young people complete higher education.

Formal evaluation of the effectiveness of the support given to families has not been carried out by any of the charities approached in the course of this study. However, many referred to the large numbers of letters of thanks they regularly receive from beneficiaries.

A random selection of occupational funds are described below, including details of the benefits they provide, the inclusion criteria for their grant making activities, whether or not their work has been evaluated and any further relevant information.

Examples of Occupational Benevolent Funds

Name of charity	What is the benefit? (2003 levels)	What are the inclusion criteria?	Has it been evaluated?	Any other information.
Society of Licensed Victuallers (SLV)	Members can receive regular allowances: -Weekly allowance of £20 maximum - TV Licence - Winter payment £90pa - Christmas Box £65pa One off grants can also be made of up to £2000 for exceptional purposes.	Those who have worked or are still working in the retail drinks industry, with a minimum of five years service. The children and partners or spouses of the above. Applicants must have less than £5000 in savings.	No	Bursaries for children attending SLV schools are available, these cover the costs of education from the ages of 3 months to eighteen years.
Veterinary Benevolent Fund	<ul style="list-style-type: none"> - Regular monthly payments - Occasional gifts - Help with on-going expenses - Short-term loans 	Fund provides assistance to “deserving and necessitous” veterinary surgeons, their relatives and dependents.	No	
Solicitors	There is no predefined upper or lower	Financial help may be offered to	No	The association is not an

Benevolent Association	level of financial awards. Awards are given either in the form of a direct grant or an interest-free loan.	solicitors and their dependents who are experiencing financial hardship including those with poor physical or mental health, accident victims or those without work.		educational charity but in exceptional circumstances will meet private school fees.
The Cameron Fund	<ul style="list-style-type: none"> - Regular payments over a period of time - One off payments to meet specified needs - Interest free loans 	General practitioners and their dependents.	No	There is no predefined limit to the amount the fund will award.
Railway Benevolent Institution	- Grants of no more than £1,880, for a purpose specified by the applicant.	Both active and retired railway staff who worked for British Railways prior to privatisation and their dependents while they are financially dependent e.g. at school or in higher education.	No, however occasional letters received from recipients report that the grants have made significant positive difference to their lives.	
The Sailor's Families' Society	<p>Family Support Scheme</p> <ul style="list-style-type: none"> - Monthly grant scheme: £46 per month paid until the youngest child in the 	Support is given to children of personnel who have served in the Royal Navy, Royal Marines and WRNS and British Seafarers who	No formal evaluation however, the charity receives many letters of "thanks and friendship".	

	<p>family reaches 16 or 18 if they remain at school or college.</p> <p>Student grant scheme</p> <ul style="list-style-type: none"> - £46 paid to each young person in a family when they reach the age of 18, providing they continue in full time education. <p>Annual Grant Scheme</p> <ul style="list-style-type: none"> - Annual clothing grants, in August, of £75 per child to purchase school clothing, and £40 per child in January to buy items of winter clothing. - Annual Christmas grant of £35 per child. - Annual holiday grants <p>Special Grant Scheme</p> <ul style="list-style-type: none"> - Emergency grants of up to £250 	<p>have served in the UK merchant marines and in merchant ships under a foreign flag. Support is also given to children of fishermen and to children of personnel serving in Ferries servicing the coastline of the UK and Republic of Ireland. Also those working on board barges operating in the coastal waters and inland waterways of the UK, for commercial gain and on board oil rigs, providing income for the UK.</p> <p>Admission to the Family Support Scheme is based on real hardship, generally indicated by the income and expenditure figures of families making an application.</p>		
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	<ul style="list-style-type: none"> - Educational holiday grants of up to £250 - Special equipment grants of up to £250 - Household items replacement grants from £50-£250 			
Royal Medical Benevolent Fund	<p>Regular Grants</p> <ul style="list-style-type: none"> - Day to day living expenses and gifts for specific needs - House repairs or redecoration or the purchase of household items or special equipment for people with disabilities. 	Support is given to anyone who is a registered doctor or their 'bone fide' dependent.	No formal evaluation but many letters of thanks a and appreciation.	<p>All eligible applicants are assisted.</p> <p>There is no ceiling on levels of help except where this would jeopardise state benefit entitlement.</p>
The Royal Agricultural Benevolent	<ul style="list-style-type: none"> - Long term regular assistance no greater than the Department for Work 	Disabled farmers, farm managers, farm workers and their dependents, who are no longer	No, but the charity receives hundreds of letters of thanks each year "which clearly demonstrate	

Institution	and Pensions disregard limit of £20 per week. - One off grants to pay domestic bills or to pay for a farm worker to carry out essential work while the farmer is unable to work.	able to work, are on a low income and have savings of under £8000 and have farmed for a minimum of ten years.	how essential our help is to people in need and their families.”	
The Royal Gardeners’ Orphan Fund	- Regular allowances to the orphans of horticulturalists - One off payments to the same, for special purposes.	Children whose parent or parents worked in horticulture prior to their death.	No, though letters from individuals testify to the benefits brought about by grants and allowances awarded by the fund.	The fund has recently expanded its work to help children in financial need who have not necessarily been orphaned.
The Bankers Benevolent Fund	- Regular allowances to help with cost of clothing for children and reimbursement of all reasonable school expenses such as fares, lunches, books and equipment.	The children of bank employees who have died or are unable to work because of ill health, and for the dependent children of serving bank employees whose spouse has died.	No	

Discussion and Conclusion

A small number of general welfare charities provide direct financial support to families on a low income. In most instances the money they provide is allocated for an express purpose. This means that whilst the money given is likely to be useful to families, it does not provide complete freedom of financial choice. However, extra money to purchase particular items frees up money from regular income, opening up the possibility of increased choice for recipients.

Benevolent funds are much more numerous. However, since they are linked to specific occupations they are open only to people who have been members of the specified profession or trade to which the fund is linked. Commonly money provided to families is not restricted to a particular use, rather it is open to families to decide how to spend the money they receive.

Formal evaluation of either category of charity has been carried out in only one instance (Beresford, 1993). Further evaluation could potentially advance understanding of whether money makes a difference to outcomes for children. The support given by occupational benevolent funds is often long-term and the money provided is sufficient to be of considerable use over time. This may therefore offer a useful prospective environment for research to assess the impact of financial assistance on outcomes for children in recipient families.

References

Beresford A.B. (1993) Easing the strain: assessing the impact of a Family Fund grant to mothers caring for a severely disabled child. *Child: care health and development*. Vol. 19 no. 6 (1993) pages 369-378.

Web site references

www.charitychoice.co.uk

www.fwa.org.uk

www.familyfundtrust.org.uk

Appendix 1

31.03.03

«Company»
«Address1»
«Address2»
«City»
«State»
«PostalCode»

To whom it may concern,

I am a researcher at City University where I am working on a study about the effects of financial benefits to families on health outcomes for children.

I am interested in finding out more about charities and benevolent funds who provide grants or financial support to families. It would be a great help to me and much appreciated if you could answer the following questions about the work of your charity.

What is the grant / benefit that you can provide?

Who do you consider to be eligible to apply for a grant?

Is there a limit to the amount that you can provide to an individual / family?

Is the grant for a specific purpose, if so what is it?

Is the grant for any unspecified purpose?

Has the charity/ benevolent fund evaluated the effect that grants have on families or individuals?

How is the charity / benevolent fund funded?

If you have an annual report, leaflet or any other information about the charity I would be delighted to receive them. If you wish to contact me please do not hesitate to do so using the contact details above. Thank you for taking the time to deal with this request.

All best wishes,
Sandra Dowling,

Research Officer.