

Prevention and Early Intervention

Literature Review



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The Early Intervention Program in the NSW Department of Community Services (DoCS) aims to deliver effective services to families and children. In order to assist relevant Departmental officers to make decisions about the selection of programs for particular groups or purposes, this literature review sought evidence regarding the effectiveness of early intervention programs and strategies as they relate to DoCS' core business.

Types of service delivery

The review is structured in terms of types of service-delivery, with a further section on programs for Indigenous communities. Focus is on a synthesis and critique of key studies that have used experimental designs to determine effectiveness, as well as published systematic reviews, meta-analyses or comprehensive reviews.

A number of conclusions can consequently be drawn regarding the optimal delivery of early intervention and prevention services to children, young people, parents, families and the community. However there are also several factors that affect the validity of the conclusions, there are impediments to service delivery which affect the strength of the conclusions and choices made with regard to evaluation restrict the breadth of conclusions. To summarise major findings:

- **Home visiting:** these services are most often targeted to vulnerable, first-time mothers. Some evaluations show some gains for parents and modest, positive effects on children's development (Karoly *et al.* 1998; Gomby *et al.* 1999).
- **Early childhood education programs:** developmental gains for children are well-established, with the most vulnerable children showing the greatest gains. It is essential that programs be of high quality.
- **Parenting programs:** features of effective parenting programs have been identified. The relationship between parent and program facilitator appears to be a critical factor. Community-based programs are more cost-effective.
- **'School readiness' programs:** while some positive results have been published, only a small number of programs have been studied. If the EDI (Canadian measure of school readiness) becomes more widely adopted, community demand for such programs might increase.
- **Indigenous programs:** involvement of Indigenous communities in all stages of program planning, implementation and evaluation is essential. Given the levels of severe and multiple disadvantage in many of these communities, generous funding and staffing levels and multiple interventions are especially important.
- **Multiple interventions:** Many innovative pilot programs now implement *multi-component interventions* that focus on reducing a variety of risk factors in several domains: family, schools, teachers, and peer environments. These appear promising in reducing risk and strengthening pro-social behaviour (Marshall & Watt 1999 p: 299). Meta-analyses show that programs using multiple interventions work better than those using a single intervention strategy (Marshall & Watt 1999). Where these services are easily accessible to the parents, for instance through co-location, the benefit to families increases. This is more effective than the comprehensive service provision model where a home-visiting service provider brokers services for individual families (Berlin, O'Neal & Brooks-Gunn cited in Brooks-Gunn, Fuligni & Berlin 2003).

1 EXECUTIVE SUMMARY

It is also clear that one-off interventions at a particular developmental stage are unlikely to be sufficiently robust to protect high risk individuals for all time: *recurrent support* acts like a booster (Mitchell, Spooner, Copeland, Vimpani, Toumbourou, Howard & Sanson, 2001; Shonkoff & Phillips 2000; National Crime Prevention 1999).

Service providers find that there is generally a low take-up of opportunities to participate in programs, as well as a high attrition rate among program participants and staff providing the services. This is particularly apparent in amongst the most vulnerable families for whom the programs are often intended.

There has also been difficulty attracting those who would benefit if there is a 'stigma' is attached to the programs. To avoid this, programs may need to be made available to whole populations, or a non-stigmatised subgroup, if the few who would make significant gains are also those least likely to attend.

Factors affecting the validity of these conclusions

Many findings are from studies of services delivered and evaluated in the United States, and this may affect their applicability in the NSW context. For example, NSW provides a universal free health service to new mothers and babies, which does not apply in the US. This means the early intervention services may have a different impact, especially on health outcomes.

There are difficulties in maintaining the fidelity of programs when 'demonstration' or pilot programs are rolled out to whole populations, making it less likely that findings of pilot studies are able to be replicated. The large-scale implementation of programs is often too recent for definitive conclusions to be drawn.

Generally the 'spottiness' and lack of rigour in evaluations results in an absence of sound and steadily accumulating data on the basis of which recommendations regarding the selection of programs could confidently be made. However, features of effective programs have been identified for some categories of service, and may provide some guidance.

Future directions

Service providers need to be clear about what it is they aim to change, how this might best be measured and what factors are likely to affect the chances of bringing about change. This review poses several questions for future research which relate to characteristics of the family, the programs and the service providers.

Understanding of the crucial nature of the early years of life in establishing the 'fragile or sturdy foundations' upon which later development is built has increased greatly in recent years (Shonkoff & Phillips 2000). Studies in neuroscience (Perry 2001), epidemiology and longitudinal studies of child health (Hobcraft 1998; Duncan & Brookes-Gunn 1997) show the strong relationship between what has been called the stress pathway and behaviour, physical and mental health. McCain and Mustard (2002) highlight a key conclusion from this new knowledge: regulatory control of the brain and its pathways are shaped by events during the prenatal period and in the early years of life. The quality of care received during this period strongly influences not only early development (McCain & Mustard 2002) but extends into adulthood (Shonkoff & Phillips, 2000).

What is prevention and early intervention?

Prevention and early intervention strategies aim to influence children's, parents' or families' behaviours in order to reduce the risk or ameliorate the effect of less than optimal social and physical environments. An important goal of prevention and early intervention is to change the balance between risk and protective factors so that the effect of protective factors outweighs the effect of risk factors, thus building resilience (Hawkins *et al.* 2002; NIDA 2003).

Prevention and early intervention is intended not only to prevent the development of future problems such as child abuse, emotional and behavioural problems, substance abuse and criminal behaviour, but also to promote the necessary conditions for a child's healthy development in all areas. Current thinking about early intervention increasingly accepts the premise that early childhood experience crucially determines health and wellbeing and the attainment of competences at later ages, and that investment in the early years will be reflected in improved education, employment, and even national productivity (Keating & Hertzman, 2000). Evidence that early intervention can counteract biological and environmental disadvantage and set children on a more positive developmental trajectory continues to build (Brooks-Gunn, Berlin & Fuligni 2000).

While the early years are crucial there remains an imperative to address the needs of children, adolescents and their parents across multiple life phases and transition points (Wise, Bennett, Alperstein & Chown, 2003; National Crime Prevention 1999). Transition points such as birth, commencing school, transitions between stages of schooling provide opportunities to assist children and their families that are otherwise isolated or reluctant to engage in services.

This literature review examines evidence of the effectiveness of prevention and intervention strategies for young children their families from pre-birth to adolescence. Its aims are to:

- provide an overview of the major studies and reviews of the effectiveness of prevention and early intervention strategies with children and young people
- synthesise and critique methodologies and key findings, including the characteristics of effective prevention and early intervention programs
- identify areas for further development and research such as promising program options that currently lack comprehensive evaluation
- summarise findings regarding the effectiveness of strategies in order to assist Departmental decision-making with respect to program selection, funding and evaluation.

2 INTRODUCTION

Scope of the review

Focus is on the synthesis and critique of key studies that have used experimental designs to determine effectiveness, as well as published systematic reviews¹, meta-analyses² or comprehensive reviews (see for example, Brooks-Gunn *et al.* 2003; Marshall & Watt 1999).

Studies included in this review have used experimental designs with either random assignment to intervention and control groups or matched control groups, with a minimum of 50 in each group (Farrington & Welsh 2003). It was also considered important that the program evaluation had not been undertaken by those who were directly responsible for delivering the program. Additional inclusion or exclusion criteria have been applied in some sections. For example, in reviewing quality children's programs, criteria related to a minimum length of follow up have been applied. While these criteria for programs to be included in this review were determined in advance, the paucity of evaluated programs in areas of concern to DoCS led to consideration of other programs that have promising features but have not been rigorously evaluated.

Databases selected for searching purposes included AGIS, CSA, Cochrane Library, EBSCOhost, Ingenta, Informit, Medline, PsychArticles, Expanded Academic ASAP, Ovid, Proquest, Science Direct and general internet searches on Google were also conducted to source government and non-government reports.

Many programs reviewed come from the United States and some from the United Kingdom. While long term benefits of early intervention can be ascertained from some overseas longitudinal studies, caution needs to be applied in translating these benefits to the Australian context.

Structure of the review

Programs have been grouped according to the method of service delivery, for example home visiting programs and pre-school programs. It should be kept in mind that generally these services will not be provided in isolation but rather in combination with other services. Services have been grouped as follows:

- 1 Home Visiting
- 2 Quality Children's Programs
- 3 Parenting Programs
- 4 Transition to School Programs
- 5 Multi-component Interventions
- 6 Programs for Indigenous Communities

1 Systematic reviews are rigorous methods for locating, appraising and synthesising evidence from evaluation studies.

2 A meta-analysis aims to ask the question "What works?" It is essentially a statistical summary of comparable effect sizes reported in each evaluation.

What is not addressed in this review

In undertaking this review, some significant gaps in the published literature on the effectiveness of prevention and early intervention programs became apparent. These are programs for CALD communities and programs for fathers. Other areas that have not been addressed are school-based programs and programs that support couple relationships.

While many US based studies examined in this review refer to target groups with both Afro-American and Latino communities, the translation of findings to CALD communities in Australia may be inappropriate. Atkinson, Bui and Mori (2001) express reservations about the current tendency to readily transfer the findings of empirically supported treatments to culturally diverse groups without careful consideration of socio-cultural influences. In particular, Atkinson *et al.* (2001) emphasise the significant influence that the relationship between program recipients and providers who come from different backgrounds may have on outcomes. This is an area that requires further investigation.

Internationally there is increasing focus on understanding the experience of fathers and on articulating the contribution of fathers to their child's development (Fletcher, Fairbairn & Pascoe 2003); however, none of the major evaluations of effective intervention strategies have identified relationships between outcomes for children and father engagement or outcomes for fathers. Indeed the vast majority of home visiting is either directed to single mothers or occurs during the day when fathers are typically absent from the home. Also the majority of quality children's programs and parenting programs engage mothers more frequently than fathers. This is an area in need of urgent attention.

There has also been a move towards taking a systems approach to capacity building within communities and families through strengthening formal and informal supports (Janus & Offord, 2001; Hertzman, 2003; Joshi, 2001; Halfon, 2002). These approaches are in still in the early stages of evaluation.

INTRODUCTION

'Home visiting' is not a single uniform intervention but a strategy for delivering a multiplicity of services (Gomby, Culross & Behrman 1999). These services can range from providing informal social support through 'befriending' the family, to sharing specific parenting skills, to delivering formal parenting programs.

"Home visiting programs are linked by their method of service delivery; their goal in helping children by helping the parents of those children and their focus on younger children. The method of delivering the service or intervention to families in their own homes offers advantages in that parents do not have to arrange transportation, child care or time off work. Bringing the intervention into the home also provides the opportunity for more whole-family involvement, personalised service, individual attention and rapport building. These factors may aid families in and of themselves but may also increase program retention rates." (Sweet & Applebaum 2004: p.1435).

The components of the home visit are likely to have a greater influence on outcomes for children than the fact that home visiting is the method of delivery. Nevertheless the mode of delivery, and the variation in the mode of delivery, do impact on the effectiveness of the program itself.

Rather than considering all programs delivered by this method as comparable, a more productive approach might be to ask:

- Who is likely to benefit from this type of service delivery?
- What are the aims of home visiting services?
- How do characteristics of the service providers – such as qualifications, case load and supervision – affect the effectiveness of particular programs?
- How do characteristics of the family – such as their age, cultural background, socio-economic status and family structure – affect the effectiveness of the program?
- How do characteristics of the program – such as intensity and duration – affect the effectiveness of delivery of particular programs?

The answers are also not clear-cut. Despite a plethora of home visiting programs, very few have been rigorously evaluated. Those that have been evaluated are often university-based model programs, which have a greater chance of success than large-scale public policy driven initiatives. This may be due to the difficulty of maintaining the fidelity of program delivery on a large scale.

BENCHMARK PROGRAMS

Parent/Early Infancy Project

Most current home visiting programs have their conceptual base in the benchmark Nurse Home Visiting Program (NVHP) also known as the Elmira *Parent/Early Infancy Project* (Olds, Henderson, Chamberlin & Tatelbaum 1986).

The sample consisted of 400 first-time mothers, many of whom had at least one of three risk factors; they were unmarried, or young or of 'low' SES status (a skilled trade or unskilled work – Hollingshead IV and V). They were randomly allocated to four groups. Two groups were not visited by nurses but were assessed at regular intervals and referred for specialist help if necessary (n=184). About half of these mothers also received free transport to an ante- and post-natal care clinic (n=94). Two groups were visited by nurses specifically trained to work in the program; one group was visited ante-natally (n=100) and the other group was visited ante-natally and post-natally (n=116). Children were assessed throughout early childhood as well as at age fifteen.

Most conclusions relate to outcomes of the higher risk subgroups – unmarried, low SES and sometimes young mothers and their children, who received pre and post natal nurse home visits (n=38). This group were compared with mothers from similar backgrounds from the two groups (collapsed) who did not receive any nurse home visiting (n=62). Results for the group who received only ante-natal visits showed 'few and inconsistent effects' (Eckenrode, Zielinski, Smith, Marcynyszyn, Henderson, Kitzman, Cole, Powers & Olds, 2001, p.882) and have received less attention in the reporting of the data.

Mothers who were home visited throughout pregnancy smoked less, had heavier babies, suffered fewer kidney infections, and had fewer pre-term babies. Intervention mothers were more likely to return to school, three times more likely to be employed and three times more likely to delay future pregnancies.

The children of mothers carrying all three risk factors who received home visits (n=22) were less likely than the comparison group (n=32) to be identified as victims of abuse or neglect by their second birthday (4% compared with 19%) and were seen 56% fewer times in accident and emergency departments of hospitals (Olds *et al.* 1986). While there were no differences in rates of abuse and neglect between ages 2-4, the reported abuse was less severe, homes were considered safer, accident and emergency visits were fewer.

Fifteen years later the mothers in the intervention group, who carried the two risk factors of being unmarried and low SES averaged less time on welfare³ (Olds & Kitzman 1990). As adolescents, their children, had fewer episodes of running away, fewer arrests, convictions and violations of probation, fewer sexual partners, smoked fewer cigarettes and consumed alcohol less frequently. There were half as many verified child maltreatment reports if they had been visited (Eckenrode, Ganzel, Henderson, Smith, Olds, Powers, *et al.* 2000). The group initially at highest risk benefited the most⁴ (Olds & Kitzman 1993; Thornton, Craft, Dahlberg, Lynch & Baer 2002).

However it should be noted that sample sizes on which comparisons are based are often small, as are incidence rates (the mean rates of problem occurrence are often less than one per case in both groups). One child can contribute multiple incidences, multiple comparisons are made on a small subsample of the data set and probability levels of 0.1 are accepted as a significant difference. The replications in Memphis and Denver showed similar but generally weaker positive effects.

3 This may be a more direct effect of fewer and more spaced out pregnancies, allowing these mothers to enter the paid workforce more easily

4 This may be because they are most motivated to change, but it also may be that statistically speaking, there is more 'room to move'.

3 HOME VISITING AS AN INTERVENTION

Community Mothers Program

An alternative model of home visiting is the Community Mothers Program (CMP), initially set up in Ireland (Johnson, Howell & Molloy 1993). It has also been replicated in Perth, Western Australia (Miller & Hughes 1999). In this program home visitors are volunteer mothers from the local community who are supervised and supported by a community nurse. They visit first-time mothers in disadvantaged areas to give support during the first year of the child's life.

A seven year follow up of 76 Belfast families showed that, at age 8 years, intervention children had fewer hospital visits and their mothers were less likely to believe in physical punishment. Intervention children were also more likely to visit libraries weekly, their mothers were more likely to supervise their homework and mothers felt more positive about motherhood. Subsequent children in the family were also more likely to be immunised (Johnson, Molloy, Scallan, Fitzpatrick, Rooney, Keegan, & Byrne 2000).

KEY ISSUES**The target group**

Home visiting is commonly used as a short-term service delivery strategy for vulnerable first time mothers. It is a significant life transition and this group are more likely to seek professional assistance than mothers of later born children (Abram & Coie 1981). The benefits gained from the initial intervention are presumed to carry over to subsequent pregnancies and children.

Where the need for support is exacerbated through social isolation, lack of psychological resources and disadvantage (limited transport options, few family supports or a lack of friends) home visiting as a method of delivering programs seems to be particularly useful.

Aims of home visiting programs

Consistent with the needs of the target group home visiting programs have a set of common aims.

Public health goals (Hahn, Bilukha, Crosby, Fullilove, Liberman, Moscicki, Snyder, Tuma, Schofield, Corso & Briss 2003)

- Training mothers in pre-natal care and infant care
- Family planning assistance
- Linking the family with a range of local public health services
- Ensuring the child has a 'medical' base

Building positive relationships

- Providing social support for the mother ('befriending')
- Increasing knowledge of child development to create realistic expectations
- Encouraging awareness of infant's cues to increase maternal sensitivity and responsiveness
- Developing parenting skills (such as helping infants settle, encouraging positive parent-child interactions, building secure mother-child attachment)

- Providing positive strategies for disciplining children
- Facilitating informal community support (eg. 'new mothers' groups)
- Linking families with a range of community services.

Encouraging maternal competence

- By promoting adaptability and facilitating the development of problem solving and life skills
- By encouraging participation in educational and work opportunities

Theoretical approaches to home visiting practice

Two broad approaches are apparent. The first is the professional expert advising and informing mothers; the other is a partnership model, where mothers are encouraged to provide solutions themselves through the supportive 'friendship' of a home visitor. More recently, both aspects are being incorporated into home visiting programs with the aim of increasing effectiveness (Davis, Day & Bidmead, 2002). Personable, friendly nurses acting in a peer-like way may lead to an increase in the observed effect size when compared with nurses who have been asked to act in a more professional, teacher like way, although the differences in behaviour would be difficult to quantify (Sweet & Appelbaum, 2004). Conversely, outcomes for non-nurse home visitors may be improved if they are trained so they feel confident in their knowledge of maternal and infant health and development, and given a title which may provide them with more legitimacy in the eyes of the mothers (Olds *et al.* 2001).

Some home visiting programs have a more structured content while others provide general guidelines within which to operate. Structured models often provide clear goals which have been linked with greater success.

Many published reports do not provide a theoretical framework to underpin the rationale of their home visiting program (Vimpani 2000). It has been suggested that many are, at least implicitly, based on attachment theory (Fonagy 2001a) which assumes that greater maternal sensitivity and more positive mother-child interactions are conducive to a more secure mother-child attachment.

Characteristics of the home visitor

Home visitor characteristics considered to contribute to the effectiveness of the service include qualifications and personal qualities.

Formal qualifications

There is some debate as to whether formal qualifications are required to be an effective home visitor. Since the Elmira NHVP benchmark study it has been suggested that a key factor in an effective home visiting program is the use of qualified nurses (Olds, Henderson & Kitzman 1994). Using randomised allocation to groups, the Denver NHVP study (n=1178) explicitly tested the comparative effectiveness of nurse and paraprofessional home visitors with a control group (Olds, Robinson, O'Brien, Luckey *et al.* 2002; Olds, Robinson, Pettit, Luckey, Holmburg, Ng, Isacks, Sheff & Henderson, 2004).

The nurse-visited group showed similar positive results as in the Elmira study in relation to maternal and child outcomes. The paraprofessionals' results were in the same direction but mostly failed to reach significance at the two year follow up. This research is often cited to support the employment of nurses. However, the researchers limited the paraprofessional visitors to those who only had high school education and excluded anyone who had any college preparation in the helping professions, as well as anyone who had a Bachelor's degree in any area. These paraprofessionals were also paid \$US8.45 per hour (in 2002 dollars). These conditions perhaps ensured that the paraprofessional group for this 'comparison' were not only non-nurses, but generally a poorly paid and poorly educated group.

Despite this, the four year follow up showed significant gains by paraprofessional-visited mothers in terms of birth weight of their babies, as well as modest gains in measures of maternal well-being and self-efficacy, and sensitive and responsive maternal-child interaction when compared with the control group. The children in nurse-visited families made significant gains in executive and language functioning compared with the control group. Although the paraprofessional-visited children were less than a point below the nurse visited children on these cognitive measures, the results for paraprofessional-visited children failed to reach significance (Olds *et al.* 2004).

Personal qualities

Unlike most home visiting programs which experience attrition rates of around 50%, home visitors in the Community Mothers Program were very successful in engaging families in the program (Marshall & Watt 1999). Gomby *et al.* (1999) point out that the personal qualities of the staff were critical as the home visitor represented the program. They suggest visitors need skills to establish rapport, organisational skills to deliver the program, the ability to respond to family crises, problem solving skills to address issues and the cognitive skills to do the required paperwork.

Thornton *et al.* (2002) identify desirable characteristics such as motivation, self-confidence, a sense of humour, empathy and open-mindedness. The home visitor had to be an experienced mother herself – ‘self-promoting individuals’ and ‘community leaders’ were regarded as unsuitable (Johnson, Howell & Molloy 1993).

Other comparable programs report similar personal qualities of visitors, for example ‘Moeders informeren Moeders’ (Mothers Informing Mothers) in the Netherlands (de Graaf, Prinsen & Vergeer 2000), the Cottage Community Care program, Home Start and Kempe Community Caring in Australia (Oakley, Rajan & Turner 1998; Hiatt, Mihalek & Younge 2000). However, sample sizes are small and evaluations methodologically flawed making meaningful comparisons difficult.

Gomby *et al.* (1999) argue that very few home visitation programs are effective because behaviour is difficult to change. Gomby points to the difficulty many people have sticking to diets, or using their exercise bike, despite being motivated. As Fonagy (2001a) states, “having the knowledge, skills and emotional resources to establish a human relationship with a high-risk family of sufficient strength to bring about such a reorganisation of family structure is no minor task” (p.17).

Characteristics of the family

In the United States, home visiting programs have been shown to be particularly effective with disadvantaged, single, teenage mothers who lack social support (Olds *et al.* 1986). However, the rate of teenage births in the United States is around 19% (Hahn *et al.* 2003), which is much higher than that in Australia (4.8% of all births – ABS 2001).

Home visiting services are almost exclusively aimed at mothers. Attempts to include fathers seemed to have few positive effects. Indeed, father participation in services has been linked to increased attrition rates while showing no greater engagement of the father with the child in either parenting activities or sharing of parental responsibility (Duggan, Fuddy, McFarlane, Burrell, Windham, Higman & Sia 2004).

Most programs have been aimed at disadvantage which can stigmatise involvement in the service. A home visiting service is more likely to be taken up if it is offered on a universal basis to a particular geographic area or to a certain group of people, such as first-time mothers, where no stigma is attached.

The most vulnerable families are those which are hardest to engage. It is more effective to recruit these families through an agency that is seen as supportive and not threatening.

Characteristics of the program

Wasik and Roberts (1994) surveyed 1094 home visiting interventions. Of these, the primary focus of 224 was to provide services for abused children and their families. Using a range of evaluation methodology over three-quarters of the families identified the three key outcomes of home visiting as being improved parent-coping skills, enhanced parent skills and emotional support. Stress management and child development knowledge were also rated highly by more than half of the respondents (Wasik & Roberts 1994). The success of the more structured programs also suggests that clear goals and teaching specific skills are conducive to more positive outcomes (Shonkoff & Phillips 2000).

On the other hand, CMP adherents suggest that a critical aspect of the program delivered by volunteers is 'empowerment' attained by supporting parents in seeking their own solutions (Johnson *et al.* 1993; Miller & Hughes 1999). Evaluations of these programs have all shown parents have greater confidence in themselves.

Other home visitor programs have had more mixed results. The UCLA Family Development Program (Heinecke & Ponce 1999) with professional home visitors resulted in less disorganised attachments. However, mothers were no less depressed or anxious, nor were there any measured increases in positive outcomes for children compared with the control group.

Similarly, in Larson's Montreal Home Visiting Study, child psychology students home visited low-income mothers. Although the injury rate of the intervention group was half that of the controls, there was no longer-term follow up. The positive results were associated with establishing a relationship with the mother during pregnancy rather than after birth.

Frequency

Programs need to be delivered when it suits the parents, which may be in the evenings if both parents are employed. Thornton *et al.* (2002) conclude from

their meta-analysis that home visitors should ideally visit weekly but, in any case, at least once a month. The NHVP starts weekly and then tapers off to six-weekly (with 23 visits in 2 years). The CMP consists of a monthly visit for one year. Thornton *et al.* (2002) suggests that programs with less frequent visits are less effective.

Duration

Programs for less vulnerable families could be successfully delivered within a year, whereas families with complex issues may need services for between three and five years to ensure lasting changes (Thornton *et al.* 2002). As children become older visits may reduce to once every three months and then every six months or every year to retain a 'booster' effect.

The minimum threshold number of visits before change could be expected to occur is about six visits.

Program fidelity

Programs can struggle to retain fidelity. After the initial demonstration roll-out, funding is often stretched so that the number of training days is cut, caseloads are increased and sessions are shorter. The resultant impact on staff competence, morale and stability is likely to jeopardise program effectiveness. Thornton *et al.* (2002) suggest no more than 15 families per home visitor, or less if the families require assistance with complex issues (Thornton *et al.* 2002).

The tightly packed schedule of visits makes it difficult to reschedule missed appointments. In programs such as Hawaii Healthy Start (HHS), and the NVHP, even if the family did participate they received less than half their scheduled home visits.

Lack of program fidelity can dilute positive effects. There is also a tendency for large public policy evaluations to focus on levels of general satisfaction with services rather than standardised outcome measures adopted by university-based researchers.

Attrition rates

Around 10-25% of those offered enrolment in a home visiting program choose not to participate (Gomby *et al.* 1999; Olds *et al.* 2002). In addition, high attrition rates are a major problem for home visiting programs with between 38% and 48% dropping out before the two-year completion of programs. The same program can also have different attrition rates in different areas (38% compared with 64% in the same year in different areas in the Hawaii Healthy Start [HHS] program). The Olds *et al.* studies retained very high proportions of families for follow up assessment although attrition rates, when reported, were still quite high, for instance, 38% for nurses and 48% for paraprofessionals in the Denver study (Olds *et al.* 2004).

The only exception appears to be the Community Mothers Program. This suggests that where there are differences in socio-economic status between the visitor and the family, parents may find it difficult not to feel judged in relation to their relative lack of education, their housing or even their ability to afford to offer tea and biscuits to a visitor.

There is also a high attrition rate amongst the home visitors, which often hovers around the 50% mark, suggesting they do not have an easy task. A high staff turnover may mean that families do not have the stability of the same visitor. These factors can undermine the goal of building a trusting relationship upon which the intervention is built.

Effectiveness

The test of a program's effectiveness lies in its ability to deliver positive changes to families and children. Gomby *et al.* (1999), in analysing six home visiting programs with random control trials, found that results in this regard were disappointing. All programs struggled to enrol, engage and retain families. Changes that did occur were very modest and they rarely addressed all program goals. She concludes that, across the six nation-wide programs and using over 100 reliable and valid measures, it is striking that there are so few positive effects.

Outcomes for children**Physical health**

In relation to programs which targeted child health (NHVP, HHS) there were no differences in immunisation rates, visits to clinics to monitor child health, medical or dental care. The CMP mothers were more likely to have subsequent children immunised. After receiving pre-natal visits, only the Elmira group of teenagers and smokers demonstrated reductions in the rates of pre-term births and their babies had higher neo-natal birth weights. This finding was not replicated in Memphis where fewer of the sample smoked (9% compared with 22%).

Cognitive

Where the home visiting programs had a child cognitive developmental component, such as the Home Instruction for Parents of Preschool Youngster (HIPPY) and Parents as Teachers (PAT), there were a few statistically significant findings, however, they were mixed and small in size and related to only sub-samples of the group (for instance, the children of Latina mothers in the PAT sample).

Wagner and Clayton (1999) report that for the PAT program three standardised measures were used but intervention children outscored their control groups on only one sub-scale of the three measures. For the HIPPY program, results were also mixed with different results emerging from the two program sites for the first cohort and no differences in either site for the second cohort (cited in Gomby *et al.* 1999).

Behavioural

Only the NHVP looked at behavioural outcomes for children. Intervention sample teenagers showed no differences from the control groups in areas such as acting out in school, suspensions, age of initiation of sexual intercourse, parent or children's reports of major acts of delinquency, minor anti-social acts and other behaviour problems. However, there were fewer instances of running away, fewer arrests, convictions and violating parole conditions, fewer cigarettes smoked in a day, fewer days having consumed alcohol in the past six months and fewer sexual partners. Parents also reported fewer drug and alcohol related problems.

In sum, few short-term benefits in children's development have been demonstrated in randomised trials of home visiting programs. The NVHP program was most effective for the most disadvantaged group in relation to reducing arrests and convictions. While methodologically weaker programs have reported more favourable outcomes (Elkan *et al.* 2000), randomised trials have shown benefits that are only small in magnitude and only relate to some of the participating children.

Maternal outcomes

Child abuse and neglect

Abuse is a rare occurrence and therefore to detect reductions in rates: large sample sizes are required (Daro & Harding 1999). It also may be more difficult to pick up in the Australian setting due to lower rates of abuse and neglect. Trocmé, Tourigny, MacLauren & Fallon (2003) cite child abuse substantiations as 12.9 per 1000 in the United States. By comparison, in NSW the rate is 4.5 per 1000. Australia has lower levels of extreme poverty⁵, which may be linked to differences in neglect rates.

Three separate meta-analyses of the effectiveness of home visiting for child maltreatment in the United State agree that results are inconclusive. Hodnetts (cited in Elkan, 1995) reviewed 9 studies, Elkan (2000) reviewed 10 studies and Sweet and Appelbaum (2004) reviewed 60 programs. Some studies showed increases, some showed decreases but most often there were no difference in rates of maltreatment in the home-visited group. Explanations, including that increases are due to surveillance effects, do not adequately explain the contradictory findings.

Generally more indirect measures are used to assess the potential to abuse. These are often related to parental attitudes to disciplinary practice and visits to emergency rooms in hospitals. These indirect measures were significantly better in the intervention group than the control group for the Hawaii Healthy Start, the Healthy Families America, the CMP and the NHVP programs. However there were no significant differences in rates of abuse for any but NVHP and the CMP.

While it may not be statistically significant, Hawaii's Healthy Start program reported that there was not a single case of child abuse or neglect (out of 241 families) in the first three years of the project (Thornton *et al.* 2002).

⁵ The average age of the homeless in the USA is nine years old – BOES, 1997.

Maternal employment

Although not an explicit goal for most programs except HIPPPY and NHVP, maternal employment, completion of school or deferral of subsequent births is often included in the measures. (It was not measured in the CMPs).

Only NHVP reported benefits for the teenage, single women, including fewer subsequent pregnancies and probably related to this greater control of fertility, fewer months on welfare and receiving food stamps. As well they had fewer problems with substance abuse and fewer arrests (Karoly, Greenwood, Everingham, Houbé, Kilburn, Rydell, 1998; Olds *et al.* 2002).

Parental attitudes towards punishment

Only the CMP measured parental attitudes directly and found that they were less likely to believe in the use of physical punishment and felt more positive about themselves and their children. The NHVP showed lower reported rates of restriction and punishment over the first two years in the nurse home-visited group, but then this group had higher rates of punishment over the next two years than the comparison group.

EVALUATION ISSUES

While significant funding has been provided for home visiting programs on the strength of the Elmira study, these programs have not always been evaluated very rigorously. The most rigorous evaluations are often associated with university collaboration (such as the NVHP, and the UCLA Family Development project).

With high attrition rates and data only collected on continuing families, the confounding impact of self-selection becomes an issue. Additionally, in the case of HFA, the evaluators were also program staff and not 'blind' as to the family's participation status, calling into question the validity of some of the findings.

Many evaluations are at the level of 'satisfaction' type rating scales collected by the service providers. In addition to the low take-up and high attrition rates, up to 60% of families who continued the intervention declined to answer questions such as how helpful a service was (Black & Kempe 2004). Even then, in programs such as Home Start, only half of the remainder agreed that it was 'very' or quite helpful (Oakley *et al.* 1998). The tendency in many of these smaller qualitative evaluations is to record glowing statements made by some of the families amongst the harder data of attrition rates. This level of 'evaluation' is too confounded to draw any real conclusions as to the effectiveness of a program and overall this suggests that only a few families are finding the service useful (Hiatt *et al.* 2000).

Assessing the effectiveness of large program roll-outs calls for more rigorous research methods. Results can then be used to progressively refine the program and the service delivery.

CONCLUSIONS

There are two models which stand out as being more consistently successful across a range of outcomes – the Nurse Home Visiting Program and the Community Mothers Program. Both have different philosophical bases with regard to program content and the qualities and qualifications of the home visitors. Differential success rates of paraprofessional home visitors and nurses in the NHVP may be in part because the program was devised for use by nurses and assumed a knowledge base and approach that was less suited to use by paraprofessionals. (Volunteer home visiting has not yet undergone a random control trial). More recent home visiting programs combine effective elements such as child health and development knowledge with personal qualities and a structured approach.

Otherwise many of the programs show only modest or patchy gains and, in some cases, no systematic benefit at all. Some of the reason so little can be gleaned about home visiting is that the evaluations are based on 'satisfaction' type rating scales with a few open-ended questions added. This approach only provides clues as to what might or might not work rather than the harder evidence base that more rigorous research would deliver.

More data is needed on the practicalities of how to enrol and engage families and the reasons behind high attrition rates. Closer examination of, which families are helped, how many visits are needed, and to which home visitor qualities parents respond, is required.

Programs need to be more than just social support – they need to have clear and measurable goals and work within a theoretical framework that can explicitly focus on behaviours which are linked to negative outcomes. Numbers of visits need to be recorded and thresholds for effectiveness ascertained. Gomby *et al.* (1999) points out that expectations should remain modest. Large societal problems like abuse and neglect, lack of school readiness and unplanned pregnancies are not easy to change.

It is not possible to conclude that home visitors of one profession are more adept at home visiting than another (Gomby *et al.* 1999; Cowan, Powell & Cowan 1996; Wasik 1993). However, it is likely that home visitors need to have particular personal qualities and need to be well-trained, especially if they are dealing with vulnerable personalities with many interconnected and complex issues. In addition, a different skill set is likely to be needed for different programs. Supportive supervision is also needed to help home visitors deal with the stresses of the job. This may be more necessary when volunteers from the same community are involved as professional distance is harder to maintain.

INTRODUCTION

The developmental gains associated with attending high quality early childhood education program⁶ are well-documented. This contrasts with the more modest gains that result from other early intervention and prevention strategies.

High quality care offers a direct strategy for improving developmental outcomes. However, it is rare to offer this intervention without an associated intervention program aimed at the parents. Most commonly the combined intervention consists of parent education program delivered through home visitation in conjunction with the child attending care – the latter being conditional upon the former. It is therefore difficult to isolate the degree to which each program (child care or home visiting) contributes gains made, except when this has been a specific objective of the evaluation.

It is now well accepted that where the quality of care is high, children will benefit. Using data from the National Institute of Child Health and Human Development (NICHD) longitudinal study with a sample size of over 1000 children, Vandell & Wolfe (2000) have shown that high quality care is associated with improvements in school readiness, expressive and receptive language, positive social behaviour and a reduction in behaviour problems (Vandell & Wolfe 2000). The results of the follow up of the NICHD study when the children were 4¹/₂ years of age are consistent with the earlier findings especially in relation to cognitive outcomes.

Conversely, where the quality of care is low, detrimental effects are apparent (Hausfather, Toharia La Roche & Engelsmann 1997; Vandell & Wolfe, 2000; 2002). The NICHD data supports this finding. Around 61% of the child care used by these children was of poor to fair quality only. Even with quality of care controlled, however, there is some evidence that long hours in child care is associated with an increase in externalising behaviours (NICHD, ECRRN, 2004).

Vulnerable children are most responsive to the positive effects of high quality care and make the greatest gains (Farrington & Welsh 2003). However, vulnerable children are also the most susceptible to the negative effects of poor quality care (Tschann *et al.* 1996, Volling & Feagans, 1995).

Most of the data relating to the benefit of high quality early childhood education as an intervention for disadvantaged children is based on experimental

evaluations (such as the High Scope/Perry preschool program, the Carolina Abecedarian program – see below). The NICHD team argue that the data they provide reflects a “detailed look at the ‘typical’ child care used by working parents in the United States today” and warn against using this data to examine the effects of high quality care as an intervention. Similarly, they regard generalising conclusions based on experimental evaluations of high quality early interventions programs to more typical child care settings as ‘a dubious undertaking’ (NICHD, 2003 p.452) because the extent to which the quality of care provided by early intervention programs overlaps with the range of quality provided by child care programs is unknown, but probably quite limited (NICHD, 2003)⁷. Nevertheless, they conclude that the ‘quality of child care predicts children’s performance on cognitive and social assessments. Findings in the present (NICHD) study are consistent with the results reported in the research literature.’ (p. 451).

6 High quality early childhood services refer to those based on individualised educational programs across all developmental domains for children aged from 0-5 years usually through centre based child care or pre-school programs.

7 Although higher quality centres are more likely to agree to participate in the NICHD than lower quality centres, still 61% of the participating centres were rated as very poor (8%) or fair (53%). Only 9% were rated as excellent and 30% as good (Weinraub, 2003).

HIGH QUALITY EARLY CHILDHOOD EDUCATION AS AN INTERVENTION STRATEGY

The criteria for inclusion in this section was expanded to exclude studies with less than five years follow up. This was because some studies reported initial effects which faded before a ' sleeper' effect emerged, while for others the initial effects faded altogether.

Programs involving randomly assigned samples have already followed children into school age and some into early adulthood. Interventions vary by age of delivery, with some starting as young as two months whilst others have not been introduced until the child was four years. The best known of these include the more recent Head Start Programs, High/Scope Perry Pre-school and the Carolina Abecedarian projects.

The initial impetus for using and evaluating early childhood education as an intervention strategy was the positive, albeit patchy, feedback from the Head Start programs introduced in the United States in the 1960s. Head Start aimed to enhance children's language and cognitive skills, encourage their self-reliance and self-esteem, provide health and dental care, a nutritional diet and parent education classes. Parents were also directly involved in the provision of care. The demand for the initial Head Start program was so great that in 1985, 500,000 children were enrolled in 13,000 centres (Marshall & Watt 1999).

Head Start has had numerous evaluations but none with methodological rigour (Ochiltree 1994; Marshall & Watt 1999). The early evaluations contained a positive flavour but little hard evidence and while they recorded gains many were not sustained over time.

More recently there was an evaluation of 2,400 three to five year old children, who entered a Head Start program in 1997 (Head Start Family and Children Experience Survey – FACES). The centres in which the children were enrolled were considered to be of 'good' quality, that is, they scored a mean of 4.9

on the seven point Early Childhood Environment Rating Scale (Harms, Clifford & Cryer 1998). Group size was about 14 children with one adult per five to six children. Two thirds of the staff had some college experience or a college degree.

The results suggest that after being on the Head Start program for a year the percentage of children approaching national means on standardised scores on writing skills and vocabulary increased. However, there were no comparison groups so that some of the findings such as spending less time 'uninvolved' (not playing alone or with others) hold little meaning, particularly as this also reflects the usual developmental trajectory of children between three and five or six years of age.

With more rigorous evaluations, the evidence in relation to the positive effects of high quality care is more clear-cut. As a result, providing high quality care to disadvantaged children has been used widely as a strategy in the United States to counteract the effects of disadvantage (Lally, Mangiore, Honig & Wittner 1988; Provence & Naylor 1983).

In considering these optimistic results, it should be noted that most of these studies have been undertaken in the United States where the conditions and services available for poor and minority children are likely to be different to those experienced by Australian children. The quality of child care is not as closely monitored in the United States as it is in Australia (through the national accreditation system) and there is no universally available free child and family health services to support maternal and child health.⁸

⁸ For instance, despite its comparative wealth the rate of child deaths under five years of age is higher in the United States than it is in China (BOES, 1997).

BENCHMARK PROGRAMS

High/Scope Perry Preschool Program

Older children – preschool intervention

The most commonly cited, and possibly the most effective preschool intervention program, is the High/Scope Perry Pre-school Program. This program adopts an active learning (constructivist) approach, which maintains that children learn best from activities that they themselves plan, carry out and review afterwards. Teachers observe and then actively work with, and question, children to extend their activities. To this end children are offered a wide range of developmentally appropriate play activities that involve making choices and problem-solving so they learn through child-initiated experiences rather than directed teaching.

The High/Scope Perry Pre-school Program evaluation has shown that two and a half hours of high quality care for five days a week over 30 weeks a year leads to cognitive, social and emotional gains well into adulthood (Schweinhart & Weikart 1997; Schweinhart 2003). The evaluation involved 123 socially disadvantaged three and four year olds (mostly Afro-American) who were randomly assigned to a program or control group. All had an IQ between 70 and 85 (around one standard deviation below average). Program children were assigned to classes of 20 to 25 children with a ratio of one teacher for every five or six children. The teachers were all trained in primary and special education with early childhood certification. The three year old children attended pre-school for two years and the four year old children attended pre-school for one year. The teacher also visited each mother and child once a week at home for 90 minutes (or regular parent meetings were held) to involve the mother in the educational process. During these meetings the teacher discussed the developmental program and modelled similar activities as those used at school.

Compared with the control group, program children had less remedial schooling, achieved higher levels of schooling, outperformed the non-program group on various intellectual and language tests and were more likely to attend college. As young adults, they earned more, were older when their first child was born and were less welfare dependent. Even when followed up 35 years later, they were consistently less likely to have been arrested, committed violent crimes, drug crimes or property crimes; they were more likely to be employed, own their own homes and earned more; females required less treatment for mental impairment (Schweinhart 2003; 2004).

At the 35 year follow-up the cost benefit analysis suggested the savings were \$17 for every dollar spent, virtually \$13 of which benefited the public rather than the participant. The main saving was due to reduced crime. The small sample size (58 children in the treatment program) means that caution should be exercised in generalising the results.

Carolina Abecedarian Project

Younger children – child care intervention

The Carolina Abecedarian program started with children aged three months and continued for some children up to the age of eight years. This program was delivered to disadvantaged Afro-American young single parents, with 111 children in the sample (Horacek, Ramey, Campbell, Hoffman & Fletcher 1987).

The children attended care from three months old, five days a week, fifty weeks of the year. They were randomly allocated to either child care only, child care and a school-based intervention, a school-based intervention only or a control group with no intervention. Results were measured in terms of school failure (reading and maths scores and repeating grades).

Children with both child care and school-based interventions did significantly better than the other groups. As a single strategy, attending child care had better results than the school based intervention alone. It was concluded that childcare is more effective in improving child outcomes than targeting parents or providing school based intervention (Brooks-Gunn & Paikoff 1993). The cost effectiveness was similar to one year of the High/Scope Perry Pre-school Project (University of Pittsburgh 2003).

As with the High/Scope Perry Program, the small sample sizes (intervention group size of 57) means that caution should be exercised when generalising the results.

Early Head Start

The perceived success of these demonstration programs, combined with the research suggesting the greater plasticity of the brain in early development stages, led to an expansion of services for younger children.

A sample of 3,000 disadvantaged children in 17 sites, who were born between 1995 and 1998, were randomly assigned to either a centre-based program, a home-based program (through home-visiting) or a mixture of both. The quality of care was independently rated as good to excellent and parents followed a structured parent education program (Berlin, O'Neal & Brooks-Gunn, 2003).

At 24 and 36 months there were positive impacts on language, cognitive, social and emotional development. Parents also used less physical punishment and employed a wider range of disciplinary strategies. There were fewer births of subsequent children and parents were more likely to be employed or participating in further education. The largest impacts were for children in the mixed approach programs and those who enrolled early in the program, especially if parents enrolled in the program during pregnancy. Centre-based programs enhanced children's social-emotional and cognitive development and some aspects of parenting although not parental self-sufficiency. Home-based programs had an impact on children's social-emotional development and reduced parental stress. Children in the home-based programs also made cognitive and language gains at age three relative to the control group. In general it seems that children gain more from centre based programs and parents gain more from home-based programs (Berlin, *et al.* 2003).

Infant Health and Development Program

The Infant Health Development Program sample consisted of 985 premature babies. The intervention included 267 full days of child care for three years in specially designed centres, weekly parent home visits for the first year and fortnightly thereafter, as well as parent group meetings.

Initial gains disappeared in the longer term (McCarton, Brooks-Gunn, Wallace, Bauer, Bennett, Bernbaum *et al.* 1997). This may be because environmental disadvantage can be more readily counteracted than biological disadvantage. However, it may also be that many of these babies, especially the heavier group (2001-2500 grams) who were only six weeks premature, were exposed to disadvantaged conditions for a very limited time. The program costs were also considerably more than Early Head Start.

Other programs with a parent education and childcare component

The Houston Parent-Child Development offered a two-year, two-stage program for low-income Mexican-American children. The first year of the program concentrated on home visitation of mothers (25 sessions of 90 minutes) and the second year included a child care component four mornings a week while their mothers attended parenting education classes at the Centre (Johnson 1990). A follow up assessment of 139 children found that they performed better on standardised tests and were rated by their teachers as less hostile and aggressive and more considerate (Marshall & Watt 1999).

Other programs such as the Syracuse University Family Development Research program and the Yale Child Welfare Research Program were less rigorous in their methodology. The Syracuse Program provided free child care five days a week for 50 weeks of the year for children aged from six months to five years. It also included a home visiting component providing parent education. While there were differences in rates of delinquency and school attendance at 15 years, the matched control group was not organised until three years into the program, making conclusive statements more difficult to make (Lally *et al.* 1988).

The results of the Yale Child Welfare Research Program were positive for both mothers and children up to five years later, but the small sample size (17 mothers and their children) makes generalisations problematic.

KEY ISSUES

The importance of quality

The critical factor in the provision of child care programs is quality. Quality is referred to as being either structural or process quality (Vandell & Wolfe, 2000; 2002)⁹.

Process quality determines the quality of care and is measured by observing the nature of the caregiver and peer interactions, the variety and appropriateness of the activities and the type of language, stimulation and discipline styles used.

Structural quality is strongly associated with, and is sometimes used as an indirect measure of, the process quality of care. High structural quality creates the conditions conducive to high process quality of care. It includes easily observable factors such as furnishings, physical space and hygiene practices. It can also include staff-to-child ratios, staff qualifications, group sizes and staff stability (Vandell & Wolfe 2000; 2002).

Where the structural quality is maintained, caregivers provide more stimulating and supportive care and spend less time managing their rooms; children's activities are more stimulating and the caregivers are more responsive and less restrictive. There are also less cross-infections and fewer injuries (Vandell & Wolfe 2000).

Children in centres that demonstrate high process quality are happier, have closer attachments to their caregivers and perform better on cognitive and language tests than children in poor quality care (Burchinal *et al.* 1996). Where structural quality is maintained they have better general knowledge, are more able to initiate, understand and participate in conversation, are more cooperative, show less hostility and conflict and are more persistent than children in lower quality of care (Vandell & Wolfe, 2002).

In the longer term these children are more ready to start school, have better language, pre-numeracy and pre-literacy skills. Poor quality care predicts heightened behavioural problems (Vandell & Wolfe 2000).

The American Academy of Pediatrics and the American Public Health Association have drawn on empirical research and advice from the field to establish age-based guidelines for group size and child-to-adult ratios. They recommend 1:3 for children birth to 24 months; 1:4 for children 25 months to 30 months; 1:5 for children aged 31-35 months; 1:7 for three-year-olds; and 1:8 for four-year-olds (Vandell & Wolfe, 2000).

In the United States, regulations in some states are at substantial odds with recommended ratios. For instance, only three states in the United States have standards as strict as the 1:3 ratio recommended for infants to meet age-based guidelines. Only two states have ratios consistent with the recommended 1:5 for three year olds. Very few pre-school programs would offer the 1:5 or 1:6 ratios available to children in the demonstration studies cited. Centres which do not meet these standards are not linked to positive developmental outcomes (Vandell & Wolfe 2000).

It is difficult to estimate the general level of quality of centre-based care in Australia as very little of the Australian accreditation data is publicly available. However, data on the National Childcare Accreditation Council website reports that 8.88% of child care centres in Australia are high quality in all ten areas of accreditation (2004). Studies in Australia which have used quality rating scales suggest that Australian child care is generally of higher quality than is found in the United States (Harrison, Watson & Skouteris 2004).

Duration and intensity of program

The longer the duration and the higher the frequency of access to high quality child care, the greater the associated gains in IQ and school achievement.

The greater the contact with the program the more effective it is. For instance, the Carolina Abecedarian Project found that 50% of high risk children with no intervention had experienced repeating a grade by the end of their third year of school compared with the general rate of 13% of children. Children with both child care and a school-based intervention experienced 16% grade repetition by the same age.

⁹ Vandell & Wolfe's (2000) comprehensive review of this area includes data from smaller more detailed studies as well as the larger NICHD longitudinal data. Their own analyses of the NICHD data is included.

Characteristics of families

The Head Start and Early Head Start programs suggest that those most at risk made the greatest gains. This may also be due to the fact that their starting point is lower giving them more 'room to move' before they reach a level where further input would make little difference to outcome.

This may have implications for the strength of findings likely in Australia, where a stronger welfare net and greater access to free maternal and child health already prevents the levels of disadvantage found in the United States.

Other studies suggest that there seems to be a threshold of problem complexity past which families are unable to derive much benefit from community service provision.

CONCLUSIONS

Research evidence suggests that of all single strategy interventions, high quality child care is the most effective in improving child outcomes and providing children with a chance to start school on a more equal footing to their more advantaged peers. To be effective child care does not have to be all day or all year but it must be high quality and programs need to be goal-oriented.

Child care placements need to be carefully chosen taking account of staff-to-child ratios, group sizes and training of staff in the centre. The quality of the child care should also be independently assessed using standardised scales. Children should be integrated with children who are not from disadvantaged backgrounds and intervention children should be limited to one a room.

Evaluations have generally employed rigorous random control methodology in their design. Increasingly the quality of the child care quality is observed independently using standardised rating scales, rather than using indirect measures such as staff-child ratios and qualifications. On the cautionary side, however, sample sizes are still relatively small and the programs are of a 'demonstration' nature. As a result, larger public policy roll-outs may not be as effective.

Of equal interest are the programs that did not work. The premature children in the Infant Health and Development Program may not have had significant advantages over their premature controls, because they were selected for biological rather than environmental disadvantage.

When high quality child care is accompanied by programs aimed at parents and/or the community, the gains for children are the greatest.

Centre-based care can provide greater quality assurance than home based care, which is likely to be more variable in the quality of its delivery. Most research that assesses the effects of quality child care services has involved centre-based care.

INTRODUCTION

A number of meta-reviews of literature exploring the effectiveness of parenting programs have been undertaken (Durlak & Wells 1997; Barlow 1999; Coren & Barlow 2003) as well as a number of government reports that seek to identify effective programs for implementation (Kumpfer 1999; Thomas, Leicht, Hughes, Madigan & Dowell, 2003). However many studies were too methodologically flawed to be included in these reviews. For example, in a meta-review of the effectiveness of group-based parenting programs, Barlow (1999) identified 255 studies, but only 16 met the criteria for inclusion.

DEFINITIONS

Shonkoff and Phillips (2000 p. 226) state that 'parenting' is a term used to "capture the focused and differentiated relationship that a young child has with the adult (or adults) who is (are) most emotionally invested in and consistently available to him or her." They argue that who fulfils this role is far less important than the quality of the relationship she or he establishes with the child.

According to Azar (2002), competent parenting is about **adaptability**. Parents need to be flexible enough to adapt positively to the changing requirements and circumstances of their children. Parents can be adaptable when they have a capacity for problem solving and accurate perception of their child's capabilities.

The Parenting Information Project (PIP) (Commonwealth of Australia, 2004) review identifies three themes that relate to the idea of adaptability: '**perceptiveness**', '**responsiveness**' and '**flexibility**'. Perceptiveness refers to the acuteness of a parent's awareness of their child and what is happening around the child, and the effects of the parent's behaviour on the situation and reflects the reciprocal nature of positive parent-child interaction, and the active role that children take in shaping their environment and influencing the way adult carers

respond to them. Responsiveness describes the extent to which parents connect with their children. It refers to the ability of a parent to be sensitive to the child, to express warmth, respond with affection, and adjust his or her behaviour based on the child's reactions and needs. Flexibility refers to the ability of a parent to respond in different ways according to the needs or demands of specific situations. Problems arise when parents lack alternative ways of responding, or get stuck in an ineffective pattern of responding and are unable to alter it.

A *Parenting Program* is a clearly planned and specified set of activities to be undertaken with parents. Barlow and Parsons (2004) define parenting programs as focused short-term interventions aimed at helping parents improve their relationship with their child, and preventing or treating a range of problems including behavioural and emotional adjustment. Effective support for parents requires consideration of ways to facilitate parental adaptability.

5 PARENTING PROGRAMS AS AN INTERVENTION

In particular, parenting programs can assist parents develop flexibility through the provision of information on alternative ways to respond to their child's behaviour. As the PIP (Commonwealth of Australia, 2004) notes:

"What is helpful will vary according to the factors that lead to this circumstance. Where a child's behaviour is challenging and parents lack ideas on appropriate strategies to manage the situation, there is a need for training in parenting skills. Where personal or social adversity factors predominate, the emphasis may most appropriately be placed on addressing these factors. Where there are multiple risk or adversity factors, a multi-faceted approach is indicated.

Parenting information, education and support needs to respond to needs in a timely and flexible fashion and address the immediate problems facing the family. Approaches must address the child's developmental needs, remove barriers to parenting effectively, and match parents' particular learning needs." (p.78)

Programs included in this review

There are a few empirically supported parenting programs which recur throughout the literature. These programs represent a very small proportion of the parenting programs available both in Australia and internationally¹⁰. Some reviews recognise this as a limitation and include categories of 'promising' programs. These include programs of less methodological rigour but promising outcomes (Kumpfer 1999); programs tailored to specific populations, such as programs for parents of children with disabilities or programs targeting neighbourhoods (Thomas *et al.* 2003; Tomison & Poole 2000). Some programs include a novel component that aims to recruit and engage parents, for example, offering acupuncture sessions for stress relief (Thomas *et al.* 2003).

Programs with particular application to the field of child maltreatment have been included, although given the number of studies, the conclusions that can be drawn are limited (Peterson, Tremblay, Ewigman & Saldana 2003).

Categories of parenting programs

Generally, parenting programs can be broadly divided into two categories of program: behavioural and humanist. While this categorisation is useful, it is important to recognise that other bases for categorisation exist, for example, attachment focused models; or from individual models to community based approaches.

Humanist approaches include the reflective and the Adlerian (Medway 1989). The reflective approach is based on communication techniques such as active listening, which emphasises the development of parental awareness, understanding and acceptance of a child's feelings. Through the Adlerian approach parents are taught that all behaviour is purposive. For example, the STEP (Systematic Training for Effective Parenting) program identifies four goals of child misbehaviour: power, inadequacy, attention and revenge (Dinkmeyer *et al.* 1976, 1997). Parents are encouraged to use natural and logical consequences to control behaviour while maintaining a cooperative home environment.

Behavioural approaches are based on observable child behaviour and the environmental circumstances that maintain behaviour patterns. This type of program is geared towards training parents to use specific techniques to reinforce desirable behaviour and control undesirable behaviour in their children.

Classifications of approaches are important because in general, the behaviourist approaches are more amenable to experimental research designs (Henry, 1998) and are thus more likely to be considered to be empirically supported than the humanist approaches which have tended to adopt more qualitative evaluation approaches (Atkinson *et al.* 2001). However, Barlow (1999) notes that “[all] group based programs produced changes in child’s behaviour – behavioural produced best results compared to Adlerian – but it may be that relationship programs are more effective in producing change in other important domains such as parental attitudes, self-esteem and psychopathology” (p. 1).

A review of the research on Adlerian parenting programs (Burnett 1988) found that whilst studies strongly supported the effectiveness of these programs in the short term, improving both children’s behaviour and self-concept, and parental behaviour and attitude, there was little research into the long-term effects of attending these programs.

KEY ISSUES

Parenting self-efficacy

Parenting self-efficacy beliefs have emerged as both a powerful direct predictor of specific positive parenting practices and a mediator of some of the effects of correlates of parenting quality, including maternal depression, child temperament, social support and poverty (Coleman & Karraker 1997).

In order for parents to feel efficacious, they must possess:

- knowledge of appropriate child care responses (for instance, how to detect infant distress and how to relieve it or what limits should be established for 3-year-olds and how to enforce them)
- confidence in their own abilities to carry out such tasks, and
- the belief that their children will respond contingently and that others in their social milieu, including family members and friends, will be supportive in their efforts (Coleman & Karraker 1997).

Self-efficacy has been found to be positively associated with some more specified concrete behavioural tendencies, such as parental efforts to educate themselves about parenting by attending parent education programs and reading literature relevant to parenting.

To inform approaches to child protection, Bugental (1991) studied a sample of both abusive and non-abusive mothers of children aged three to 13, and found that abusive mothers tended to have lower levels of parenting self-efficacy than did non-abusive parents.

In impoverished communities, possession of inner strength based on a sense of personal competence can be a critical buffer against adversity, enabling parents to optimally promote their children’s well-being (Elder 1995).

Recruitment and retention

A variety of different factors affect the recruitment of parents into parenting programs. Schaefer (1991) reported that parents who lack self-efficacy can be difficult to involve in parent education programs because these parents do not want to show themselves as not having faith in their ability. Long, McCarney, Smyth, Magorrian and Dillon (2001) identify that the key to recruiting parents to positive parenting programs is to assure them that the program will help them improve skills they already possess.

No aspect of parent behaviour or family socio-economic status is a clear indication that parents will or will not attend parent workshops, although higher parental educational attainment is predictive of recruitment (Spoth & Redmond 2000, Haggerty, Fleming, Lonczak, Oxford, Harachi & Catalano 2002). Haggerty *et al.* (2002) suggest that this finding supports universal parenting programs as being the most likely strategy to attract a diverse range of parents.

Polizzi, Fox and Gottfredson (2003) investigated the characteristics associated with program non-completion for a family based prevention program in Washington. Results of a survey suggested that non-completers were misinformed about the content of the program and lacked accessible transportation. Program content, family illness and scheduling conflict also contributed to non-attendance.

Many of the published studies report low levels of retention and Barlow (1999) identifies the importance of future studies exploring the social demographic factors of parents who do not complete parenting programs. McCurdy and Daro (2001) point out that few studies follow parents prospectively from recruitment to termination to isolate the mechanisms that predict behaviour at different points of the engagement process. As a result, we have little understanding of the differences between parents who accept or decline services.

Community-based (versus clinic-based) programs

Cunningham *et al.* (2000) point out that although there is considerable evidence regarding the outcome of parent training under optimal (controlled clinical) conditions, there is relatively little known about the utility of this intervention in community settings. In an earlier study Cunningham *et al.* (1995) found that families from different cultural or linguistic backgrounds were more likely to enrol when parent training was located in neighbourhood schools rather than local clinics.

Factors influencing attendance in community programs seem to differ, especially demographic characteristics of families. Community locations pose fewer logistical problems for families and contextual factors such as the demographic similarity of families enrolled in neighbourhood school-based programs may provide an atmosphere supporting a different pattern of participation. Parents of children with more severe externalising problems attended more sessions.

Life stress, self-reported parental depressive symptoms and family dysfunction that have been linked to lower participation in clinic-based interventions (Kazdin, Mazurick & Bass 1993; Prinz & Miller 1994) were not associated with enrolment in Cunningham's program. However single-parent status and limited parental education were independently associated with lower participation.

A cost analysis showed that with groups of 18 families, community/groups are more than six times as cost effective as clinic/individual programs (Cunningham *et al.* 1995).

Webster-Stratton (1998b) describes an intervention (PARTNERS) with 210 low-income families and their four year old children involved in the Headstart program. Eighty-eight percent of the parents enrolled in the intervention group attended more than two-thirds of the sessions, leading Webster-Stratton to wonder "perhaps this population has been 'unreachable' not because of their own characteristics, but because of the characteristics of the intervention they have been offered" (p. 184).

Parenting programs: Group-based

Group-based parenting programs tend to target parents of pre-schoolers and young children. There has been little research on the applicability of group based parenting curricula for parents of infants and younger children, although there are some programs extant (Barlow & Parsons 2003). Structured ante-natal education has not been included in this review as the effects remain unknown (Gagnon 2004).

A review on parenting programs for three to ten year old children found that:

- behaviourally oriented group-based parent training programs were effective in improving behavioural problems in children
- Adlerian and Parent Effectiveness Training type programs were also effective in improving children's behaviour, albeit to a lesser extent, and
- community-based group parent training programs may produce better changes and be more cost effective and 'user friendly' than individual clinic based programs (Barlow 1999 p. 49).

Ingredients of effective parenting programs can be classified in terms of program content and process. Effective parenting programs have been identified as having several common content characteristics:

- training is conducted mainly with parent(s) who implement the procedures at home
- parents learn to identify and monitor behaviour that can be targeted for change
- appropriate behaviours are reinforced and antisocial behaviours are ignored or attract consequences, and
- the training allows parents to see how the techniques are implemented, to practice the techniques and to review the behaviour changes at home (Kazdin 1997).

The following process factors have been identified as important aspects of parenting programs, particularly in regard to recruiting and maintaining enrolment of parents (NSW Health 2003):

- empathic responding and listening on the part of the facilitator
- facilitator warmth
- facilitator acceptance of participants
- development of an alliance relationship with parents
- provision of a rationale
- acquisition and practice of new behaviours
- encouragement of risk taking, and
- cultivation of hope/enhancement of expectations.

Programs such as *Triple P* and *Incredible Years* have evolved over more than 20 years and have developed parenting programs that effectively address these factors. Both of these programs have developed complex systemic models and have extensive evidence-bases that include both replication and generalisation studies, and are generally considered to be empirically supported treatments.

The *Triple P* program is a multi-level system of family intervention that provides five levels of intervention of increasing strength. These include a universal population media strategy, two levels of brief primary care consultations and two more intensive training and family intervention programs for children at risk for more behavioural problems (Sanders, Markie-Dadds & Tuner 2003).

A large number of studies based on the implementation of *Triple P* with a range of parent groups are currently being conducted. These include programs for Arabic speaking parents, foster parents, Chinese parents, parents at risk of abusing their children, families with a deaf member and Indigenous parents. A population level trial of *Triple P* conducted in Perth, WA for all parents of pre-school aged children in a specific, disadvantaged geographic area reduced

5 PARENTING PROGRAMS AS AN INTERVENTION

the level of emotional and behavioural problems in young children at risk of developing such problems (Zubrick 2002). Internationally, *Triple P* is the intervention that has been chosen for a population level child abuse prevention trial (North Carolina) and as an enhancement to home visiting (Glasgow). Publications are not yet available or are in press for many of these initiatives.

The *Incredible Years* program (Webster-Stratton 1981b) is the parenting program attached to the Head Start initiative, and has been replicated in an extensive trial in the UK (Scott, Spender, Doolan, Jacobs & Aspland 2001). The Incredible Years program is currently being delivered by mental health services in Hobart, the Mid-Western Area Health service in NSW and Campbelltown.

Both of the above programs are supported by manuals for both practitioner and parents, video materials and an accredited system of training. Costs associated with such programs tend to be high which has limited their uptake.

Parenting programs such as *Helping the Non-Compliant Child* (Forehand & McMahon) and *Defiant Children* (Barkley) and *Parent Child Interaction Therapy* (Eyberg 1988) are conducted primarily as treatment interventions.

While these programs have stringent requirements that practitioners adhere to the manualised content to ensure program fidelity, questions exist as to what extent the impact of parenting programs is attributable to the content of the program. Kumpfer (1999) notes that the effectiveness of a program is highly tied to the trainer's personal efficacy and characteristics, and some estimates place the effect of trainer characteristics as high as 50-80%. Personal, caring, empathic and experienced staff members are rated the highest by program participants. They are also better able to retain families in the program and contribute to better outcomes.

The social support provided by parenting programs is also important (Webster-Stratton 1997). Several studies that have involved placebo control groups (Peterson *et al.* 2003) or control groups that have participated in discussions with other parents without a formal intervention have found that the control groups also achieve significant gains.

Walker and Riley (2001) found that mothers given newsletter information reported greater self-reported change in behaviours and attitudes when the information was discussed with their personal social network. This indicates that the opportunity to form social networks and the reducing social isolation is important in supporting change in parental behaviours and attitudes. Bowes (2000) notes that social ties can be missing for families with young children and that the design and evaluation of parenting programs often pays little attention to the social support links of parents and ways to build their social networks.

Some parenting programs have demonstrated efficacy in individual as well as in group settings. For example, the *Triple P Level 4* (Standard) intervention has been offered to parents with a home visiting component (Cann, Rogers & Matthews 2003), or in telephone supported, self-directed program (Connell, Sanders & Markie-Dadds 1997; Cann, Rogers & Worley 2003).

Parenting programs: Specific groups of parents

Some programs for specific groups of parents represent generalisation studies of existing parent training programs (such as the Stepping Stones [Sanders, Mazzucchelli & Studman, in press] or Chinese versions of the Triple P program [Leung, Sanders, Leung, Mak & Lau 2003; Crisante & Ng 2003]).

Programs for specific groups of parents tend to be included in the literature as 'promising programs'. Many of these lack sample size, statistical and methodological rigour and control groups, or have not undergone quantitative evaluation. Rather than exclude such studies, the literature recommends that further evaluation of such programs be encouraged (Kazdin 1997; Barlow 1999; Kumpfer 1999).

Teenage parents

Coren and Barlow (2003) reviewed 14 studies on parenting programs for teenage parents and report limited results due to the small number of studies and the varying methodologies used. However, the results indicate that parenting programs are effective in improving a range of outcomes for both teenage parents and their infants, especially in relation to maternal sensitivity, identity, self-confidence and the infants' responsiveness to their parents.

Parents who have been identified as being at risk of abusing their children

The virtual absence of proven, effective preventive training programs to increase parenting competence in the specific area of maltreatment reduction is a major challenge to interventionists (Peterson *et al.* 2003). There is difficulty in recruiting and retaining individuals who are not mandated for treatment (and even those who are mandated are difficult to keep in treatment [Lutzker, Bigelow, Doctor, Gershater & Greene 1998]). Zeanah *et al.* (2001) reported the effectiveness of a multimodal and individualised intervention for infants and toddlers in foster care, which included efforts to enhance all of the child's caregiving relationships. The program was associated with reduced rates of maltreatment recidivism.

Sanders, Gravestock *et al.* (in press) trialled an enhanced behavioural family intervention (EBFI) for parents experiencing significant difficulty in managing their anger in their interactions with their pre-school aged children. Ninety-eight parents were randomly assigned to either the EBFI (which incorporated attributional retraining and anger management) or standard behavioural family intervention (SBFI). At post intervention both conditions were associated with lower levels of observed and parent-reported disruptive child behaviour and lower levels of parent reported dysfunctional parenting, greater parental self-efficacy and less parental distress. EBFI showed significantly greater short-term improvements on measures of negative parental attributions for child's misbehaviour, potential for child abuse and unrealistic expectations than SBFI. At six month follow-up both conditions showed similar positive outcomes as before however, EBFI continued to show greater change in negative parental attributions.

Peterson *et al.* (2003) evaluated an intervention for mothers of 18 month to four year old children. The mothers had low income and low education backgrounds. They reported some anger towards their child, as well as use of physical discipline. Women were randomly assigned to either treatment (groups plus home visiting and practice work at home, n=47) or control (diary keeping, n=32) conditions. The study found that both groups demonstrated improvements and so had to add an additional, no-diary control group (n=25). After intervention, the treatment group showed substantial improvement in each of the domains targeted by the program, including reductions in harsh discipline and increases in gentle discipline. A decrease in unrealistic beliefs about children and less child-directed anger was also observed. This group of mothers demonstrated more nurturance and their sense of effectiveness as parents increased. The differences immediately following treatment were larger than those at one-year follow-up and the authors suggest that the data would have been improved by the addition of repeated booster sessions to ensure maintenance.

Parents with substance abuse problems

Dawe, Harnett, Staiger & Dadds (2000) have developed the *Parents Under Pressure Program* (PUP) for parents either at risk of abusing their children or who had a problem with substance abuse. Dawe, Barnett, Rendalls & Staiger (2003) report on an initial evaluation of PUP with nine families who completed the program delivered in their homes. Eight families were recontacted at 3 months, and reported significant improvements in the domains of parental functioning, parent-child relationship and parental substance abuse and risk behaviour. This program is currently being trialed in four Area Health Services across NSW in partnership between Griffith University and the Drug Programs Bureau, NSW Health (Harnett & Dawe, 2003).

Parents with depression

Lovejoy, Graczyk, O'Hare & Neuman (2000) reviewed the results of 46 observational studies analysed to assess the strength of the association between depression and parenting behaviour. Depressed mothers exhibited significantly higher levels of negative and disengaged behaviour and significantly lower levels of positive behaviour than non-depressed mothers. Depression does not appear to be associated with lowered levels of positive parenting behaviours (eg. praise, play-time and affection) unless the woman is also dealing with economic stress.

Many depressed individuals display not only sad affect, but anxiety, irritability and tension. Mothers who are irritable may express more negative affect toward their children and be less tolerant of normative child behaviour and, as a result, rely more on coercive techniques for dealing with child behaviour.

In a controlled evaluation of cognitive behavioural family intervention for families with a clinically depressed parent and a child with significant conduct problems, 47 parents were randomly assigned to either cognitive behavioural family intervention (CBFI) or behavioural family intervention (BFI). Using both observational and self-reporting measures, the study found that both interventions were effective in reducing mother's depression and children's disruptive behaviour problems. However, at six-month follow-up, more families in CBFI (53%) than BFI (13%) experienced concurrent clinically reliable reductions in maternal depression and child disruptive behaviour (Sanders & McFarland 2000).

Parents from culturally and linguistically diverse communities

There is considerable need to determine the nature and efficacy of culturally sensitive parenting programs (Forehand & Kotchick 1996; Harry 1992). Cheng Gorman & Balter's (1997) critical review of the literature on culturally sensitive parent education programs between 1970 and 1997 concluded that "the studies reviewed manifest weak support for the efficacy of culturally sensitive parent education programs, though some moderate effect sizes are present. ... the programs are somewhat more effective in producing change in parents than children" (p. 365).

CONCLUSIONS

There is recognition that the quality of the relationship between parent and parenting program facilitator may be more significant in producing changed behaviour and improved outcomes for children than the content of parenting programs (Kazdin 1997, Webster-Stratton 1997; Hubble, Duncan & Miller 2000; Barlow 1999). Although there is consensus in the literature that this relationship is important, there is also a consensus on the shortage of evidence in this area.

Parenting programs can usefully be offered as a population intervention. This reduces stigma around help seeking behaviour (Williams, Zubrick, Silburn & Sanders 1997; Offord, Chumera, Kraemer, Kazdin, Jensen & Harrington. 1998; Zubrick 2002) and accesses children in the general population who are at-risk of poor outcomes (McCain & Mustard 2002). Parenting program effects seem likely to be long term (Long, Forehand Wierson & Morgan 1994, Kazdin 1997) and 'booster' sessions seem to be important in maintaining or increasing outcomes from parenting programs in the longer-term (Eyberg, Schuhmann & Rey 1998; Durlak & Wells 1997). Parenting programs should focus on positive gains such as parenting skills and children's activities and avoid making parents feel singled out as 'bad parents' (Normand, Vitaro & Charlebois 2000).

Attrition rates of high-risk families from parenting programs are of concern, however, parenting programs that are community based are more effective in recruiting and retaining parents from culturally and linguistically diverse backgrounds (Cunningham *et al.* 1995), and intensive supportive programs appear to reduce attrition (Peterson *et al.* 2003). Parents experiencing significant problems with their children are likely to enrol in parenting programs (Haggerty *et al.* 2002).

INTRODUCTION

Research suggests that children who make a smooth transition and experience early school success tend to maintain higher levels of social competence and academic achievement (Alexander & Entwisle 1996; Pianta, Rim-Kaufman & Cox 1999; Luster & McAdoo 1996; Shepard & Smith 1988 cited in Dockett & Perry 2003).

Recent studies have found that children from disadvantaged backgrounds tend to be less 'ready' for school (Stipek & Ryan 1997). The cost of beginning school significantly behind one's peers is substantial and a deficit from which children may never recover (Stipek & Ryan 1997). A number of authors have recognised that it is better to prevent these deficits occurring and eliminate the need for these children to catch up with their peers (Halfon, Sutherland, View-Schneider, Guardiani, Kloppenburg, Wright, Uyeda, Kuo & Shulman 2001).

Definitions of 'school readiness'

Historically and currently, the main criterion for assessing school readiness has been age (Crnic & Lamberty 1994). Children in Australia must start school around the age of five years, the age at which children have, somewhat arbitrarily, been regarded as being 'ready to learn' (Watson 2003). However, recent research has led to a wider acceptance of the notion that children are learning at an earlier age and that the people caring for them are, in fact, educating them rather than 'just minding' them (Watson 2003). The less structured aspects of this early childhood learning include social competence, physical health and emotional adjustment, as well as language and cognitive skills and general knowledge (Janus & Offord 2000).

McClellan and Katz (2001) argue that there is now persuasive evidence that children need some minimal level of social competence before they start school (Ladd 1999, Parker & Asher 1987) to ensure their later social and emotional development is not compromised. Children's emotional, social and behavioural adjustment is as important for school success as cognitive and academic preparedness (Raver & Zigler 1997, Raver & Knitzer 2002).

Other authors emphasise other factors. Language is considered important by a number of investigators (Carnegie Task Force 1994; National Association for the Education of Young Children 1998; National Educational Goals Panel 1998). More specifically, they highlight the ability to communicate effectively, with both teachers (follow instructions – Dockett, Perry, Howard & Meckley 2000) and peers (Hains, Fowler, Schwartz, Kottwitz & Rosenkoetter 1989; Janus & Offord 2000), rather than the actual developmental level of language. Other authors (Dean, Ashton & Elliott 1994; Dockett *et al.* 2000) point out that being well coordinated and physically healthy also helps children as they start school.

Assessment of 'school readiness'

In order to assess the level of school readiness at a community level, the Early Development Instrument (EDI) was developed in Canada (Janus & Offord 2000). This was based on the National Longitudinal Survey of Children and Youth, which examined correlates of healthy development of children and adolescents. This survey produced a list of indicators of children's readiness to learn, of which five domains were deemed most relevant. These were: (a) physical health and well-being; (b) social knowledge and competence; (c) emotional maturity; (d) language and cognitive development and (e) communication skills and general knowledge. The aim of this instrument is to assess strengths and deficits in groups of children, assess the effectiveness of early childhood intervention and provide a predictor of how well this group might do in primary school. Individual scores are not made available. The overall results of the EDI tests are made available to the community and can be used to assist in deciding which services might be required to overcome any gaps.

Transition to school programs

In Australia and overseas a small number of 'transition to school' programs have been evaluated.

Joseph and Strain (2003) conducted a review of the literature on social and emotional curricula for young children and found few programs that address social and problem solving skills for pre-school children aged under six. The authors, however, identified two programs for which they rated the evidence highly, namely *The Incredible Years: Dinosaur School* (Webster-Stratton 1990b) and *First Step* (Walker, Kavanaugh, Stiller, Golly, Severson & Feil 1998). Webster-Stratton, Reid and Hammond (2001) report that the *Dinosaur Child Social Skills and Problem Solving* training program was successful in producing significant improvements in child conduct problems and in children's cognitive social problem solving strategies. Webster-Stratton and Hammond (1997) showed that 95% of families who received both child training program and parent training program showed clinically significant improvements at one year follow-up. This was significantly higher than families who received only parent training or child training.

In Australia, Cooper, Paske, Goodfellow & Muhlheim (2002) have developed the *PALS* (Playing and Learning to Socialise) program, a program targeting children who are withdrawn, anxious, aggressive and/or disobedient in preschools and long day care centres in isolated and disadvantaged communities. The authors report that a trial of the *PALS* program resulted in a reduction in these behaviour problems. This program is now being disseminated across Australia, and further studies on the outcomes of *PALS* are currently being conducted. The *Schools as Community Centres* program in New South Wales has also been established to reduce the impact of disadvantage for children entering school by providing integrated services for families in disadvantaged communities.

Recommendations for 'transition to school' programs

The *Starting School Research Project* (Dockett & Perry 2001) developed some *Guidelines for Effective Transition to School Programs*, namely to:

- establish positive relationships between the children, parents and educators
- facilitate each child's development as a capable learner
- differentiate between 'orientation to school' and 'transition to school' programs
- draw upon dedicated funding and resources
- involve a range of stakeholders
- plan well and evaluate fully
- be flexible and responsive
- be based on mutual trust and respect
- rely on reciprocal communication among participants, and
- take into account contextual aspects of community.

Stipek (2002) has called for 'a greater focus on making schools ready for children by tailoring teaching and learning opportunities for children's diverse skills, rather than concentrating on making children 'ready' for schools' (p. 8). Effective transition programs in which all stakeholders make adjustments have the potential to help children and their parents feel comfortable, valued and successful in school and hence avoid negative outcomes (Dockett & Perry 2003).

INTRODUCTION

A review of 27 intervention programs (Benasich, Brooks-Gunn & Clewell 1992) found that 90% of centre-based versus 64% of home-based programs resulted in immediate cognitive benefits for children. One year after the program had finished, effects were maintained in 67% of the centre-based programs compared with 44% of home based programs (Brooks-Gunn *et al.* 2003). However the impact of individual services can be augmented by offering more than one service to a family. This can be conceptualised as:

- a so-called 'two-generation' model offering two generations of the family a simultaneous service, for example, a service aimed at the parents, such as home visiting, as well as a service aimed at the child, such as early childhood education (High/Scope Perry Preschool, the Infant Health Development Project)
- an extension of the 'two-generation' model based on an ecological model (Bronfenbrenner 1979) offering intervention at each of the levels in this model, most often child, immediate family, and a community based intervention. This may be, for instance, high quality pre-school for the child, parent education for the mother and father and engaging community support through facilitating a new mothers' group (the Comprehensive Child Development Program or the Child Parent Centres in the United States)
- 'seamless' service delivery, where one family member is able to access temporally sequential services such as a pre-school program which becomes a school-based program as the child matures (such as the Carolina Abecedarian Program).

In multi-component service delivery where a suite of services are offered to families to match their individual needs, there have been two major approaches.

The first is represented by the 'Child-Parent-Centres' in the United States, particularly in Chicago where multiple services are co-located. This has also been trialled in Australia through community hubs in Queensland (Farrell, Tyler & Tennent 2002) and Early Childhood Centres as Community Centres in NSW (Hayden 2002).

The second is represented by the Comprehensive Child Development Program where a family is 'case-managed' by a worker who home visits the family once a month and brokers services. This model was also adopted by the federally funded 'Strengthening Families Victoria' initiative in Australia.

The former approach has been rigorously evaluated and has been shown to have very positive outcomes. The Comprehensive Child Development Model has also been well-evaluated but there are no systematic effects recorded.

BENCHMARK PROGRAMS

Chicago Child-Parent Centre

Many of the successful findings in this review rely on model programs with small sample sizes. The Chicago Child-Parent Centre is the first example of a large-scale program that has had its impact assessed into early adulthood.

The Child-Parent Centre Program evaluated in the Chicago Longitudinal study provided disadvantaged children with a high quality, active learning pre-school program supplemented by family support (Reynolds 2004). At some sites the Child-Parent Centres continued to provide an educational enrichment program up until the age of nine years. Children from poor neighbourhoods are eligible. There are currently 23 centres throughout Chicago public schools with the evaluation being undertaken in conjunction with the University of Wisconsin-Madison (Reynolds, Ou & Suh-Ruu 2004). Families are predominantly disadvantaged Afro-Americans (93%) with the remainder being Hispanic (7%).

Children attend pre-school for a half day, five days per week at three to four years and kindergarten half day or a full day, five days a week by five years old for the nine month school year calendar. There is also an eight week summer program. Comprehensive services ensure children's nutritional needs are met by providing free breakfast and lunch as well as health screening. Each site tailors its program to suit children's needs but is bound through a unified philosophy of literacy and there are common core activities that include individualised instruction, small group activities and field trips. The pre-school and kindergarten program adopt a child-centred focus on reading/language skills. There is coordinated adult supervision with trained teachers, teachers' aides, a parent resource teacher and a school-community representative in each room. There are also funds set aside for teacher in-service training and instructional materials.

In order for their child to be accepted into the program the parents must agree to participate in the program at least one half day per week.

The intervention group consisted of 858 children and their families. The comparison group (n=465) was drawn from randomly selected schools in similarly disadvantaged neighbourhoods. The results indicated that Child-Parent Centre pre-school participation was associated with substantial improvement in well-being, including high school completion rates, lower juvenile arrests by 18 years, lower grade retention, less special education placement, and half the rate of substantiated maltreatment by the age of 17 years. It has been argued that some of the program effects 'fade' when children are then sent on to poor quality schools. The extended school age program provided by the Child-Parent Centres led to increasing the benefits (Reynolds 2004; Brooks-Gunn & Paikoff 1993; Byrne, Kelly & Fisher 1993). Again the poorest group benefited the most (Farrington & Welsh 2003) with the cost-benefit analysis reflecting similar results as the High/Scope Perry Pre-school program (University of Pittsburgh 2003).

Comprehensive Child Development Program

The other method of delivering multi-component strategies is through a central person who coordinates and organises the services the family needs. The Comprehensive Child Development Program (CCDP) in the United States runs on this model. This was a five year federally funded demonstration program across 24 sites. It relied on paraprofessional home visitors from the disadvantaged communities, which were targeted for intervention. These home visitors did not deliver a program themselves but visited the family monthly and brokered services for the family. This comprehensive program was expected to provide families with a suite of services matched to their specific needs.

INTERVENING THROUGH THE PROVISION OF A MULTI-COMPONENT SERVICE DELIVERY

The evaluation involved a random allocation trial of pregnant women or mothers with a child under one who agreed to participate for five years. There were 4,410 families in the sample, large enough for systematic differences to become apparent, even if they were small. Child care was of high quality and required to meet Head Start standards. Mothers and children had three bi-weekly sessions with parent-child activities organised by the case managers. There were also program components aimed at improvements in maternal life course and skills in self-sufficiency. The services were required to build on existing social services if they could.

Data were collected annually and measures were well-standardised developmental measures with some also measuring the quality of interaction between mother and child.

There were no systematic program effects on children's physical, social, emotional and cognitive development of comprehensive programs delivered via a home visitor (Berlin, O'Neal & Brooks-Gunn 2003). The other aim of enhancing accessibility of services for the intervention group was not met as the comparison group accessed a similar number of services as the intervention group. Unfortunately there were no base line data on levels of services accessed by each group. It was therefore unable to be ascertained whether this intervention had little effect, or whether brokering services might have led to a more integrated system of service delivery for all the community as informal links between service providers strengthened through being linked up by case manager.

The cost of the CCDP were high compared with other programs, leading Brooks-Gunn *et al.* (2003) to argue that "given the scarcity of positive program impacts, the costs appear to outweigh the program benefits" (p.73).

Other comprehensive approaches

Sure Start in the United Kingdom and First Five in California also have a comprehensive approach to service delivery. In these service delivery models, the local community tenders for funding for a preferred service system that matches the needs of their community. Each community may have different requirements. However many ask for purpose designed building where services are co-located as in the Child Parent Centres in Chicago. Recent Sure Start data (NESS) however would seem to suggest there was little significant impact, although an important predictor of resilience (ie acceptance) was higher for intervention children. These large-scale initiatives to combat disadvantage and enhance children and family well-being are relatively recent and there are as yet too little data to reach definitive conclusions.

INTRODUCTION

This section on prevention and early intervention programs within Indigenous communities focuses specifically on the principles, key features or characteristics of programs that are integral to acceptance within an Indigenous community and necessary for success. Studies using an experimental or quasi-experimental design have not been located and may well be considered inappropriate within this context.

Programs for Indigenous people must be based on the following principles if they are to be effective (Cunneen & Libesman 2002; Engeler, McDonald, Miller, Groos, Black & Leonard 1998; Franks 2001; Memmott, Stacy, Chambers & Keys 2001; Watson, 2002; Podnieks 2000; Stanley, Tomison & Pocock 2003).

Cultural awareness and cultural partnership

Cultural awareness and cultural partnership was identified as the most important factor in program delivery. It requires that:

- key stakeholders, government and Indigenous community, work together in partnership
- key local community members are involved.
- Indigenous communities participate in the design, implementation and evaluation of programs
- Indigenous staff are recruited, trained and employed
- culturally appropriate and local resource materials are used
- non-Indigenous staff receive cultural awareness training from cross-cultural trainers
- programs are culturally appropriate and welcoming to Indigenous families, children and communities
- communities are empowered, rather than simply having services delivered to them.

Programs need to take into account and address the psychological wounds of past trauma and dispossession, with an emphasis on 'healing' (Robertson 2000; Stanley, Tomison & Pocock 2003).

High level of resourcing and flexibility

Many indigenous families are experiencing high levels of severe and multiple disadvantage. There is a corresponding need for a range of inter-linked and coordinated services to address multiple problems. Indigenous staff commonly have to deal with family and community crises, as well as coping with demanding workloads and so the risk of burn-out is great. There is a strong argument, therefore, for more generous staffing and funding ratios than apply to other services.

Quality issues

The following issues are particularly important in ensuring the delivery of quality services for Indigenous communities.

- An effective needs assessment to be carried out in collaboration with the community.
- Secure long-term funding, flexibility in funding decisions and longer program time frames are essential. There is a long history of ad hoc 'pilot' programs that cease operating once short-term funding has run out. The entrenchment and level of disadvantage in many families and communities means that progress will be slow and 'quick fixes' impossible.
- Wherever possible programs should focus on strengths rather than 'problems' or self-blame.

PROGRAMS FOR VULNERABLE INDIGENOUS CHILDREN, FAMILIES AND COMMUNITIES

- Home visiting may often be appropriate. Smollar & French (1990) note 'Home visits involve additional time and effort, but relative to the alternative of under-utilisation of office-based interventions, home visits significantly enhance care and effectiveness.' Home visiting allows for greater flexibility and facilitates a trusting relationship (Norton & Manson 1997).
- It is important to adopt a wide-ranging approach to identifying programs for Aboriginal families. Useful programs may be nested under different headings: child abuse and neglect (Stanley *et al.* 2003), juvenile justice (National Crime Prevention 1999) family violence (Partnerships Against Domestic Violence 2004), for example. A holistic approach is needed to conceptualise, select and deliver services.

Practical issues

The following practical issues in service delivery are important:

- appropriate communication strategies to inform communities about services, programs and activities
- an emphasis on the need to work with men
- jargon needs to be avoided
- transport for clients
- the practical difficulties of time frames for funding, set days for training, timetables for running programs, can all present major problems that need to be addressed collaboratively (South Western Sydney Area Health Service Report 2002).

Keeping in mind these indicators of quality in programs for Indigenous people, a survey was carried out of international and local programs for Indigenous children and families.

International models of programs for Indigenous families and communities

Carr and Young (1997, cited in Cunneen & Libesman 2002) note the general lack of literature and information concerning Native American child abuse and neglect prevention and intervention. McKenzie (1997) notes that few assessments of First Nations-run welfare services have been conducted.

A major review (Cunneen & Libesman 2002) describes the Canadian early intervention program, 'Aboriginal Head Start Initiative'. It was launched in 1995 in urban and remote communities. Around 100 projects, costing \$83.7 million, were implemented in its initial four year pilot phase after consultations with Aboriginal people from 25 urban and remote centres.

An evaluation of the program indicated a range of benefits including support for families, better relationships between parents and children, improved social and emotional ability in participating children, and enhanced community capacities (Health Canada, 1998). An evaluation of another early intervention program in seven urban Ontario communities found that high-risk Aboriginal three to five year olds demonstrated improved confidence, better behaviour, improved language skills, and better communication and expressiveness (Becker & Galley 1996).

In considering Indigenous programs from other countries, it needs to be appreciated that legislative, judicial and administrative decision-making relating to children's welfare ranges from the almost complete transfer of powers to Indigenous communities, such as under the *Indian Child Welfare Act 1978* (USA), to those where all jurisdiction is retained by the state, such as under the *Children Young Persons Care and Protection Act* (NSW), with Canada and New Zealand falling somewhere in between.

Such arrangements affect the nature of the relationship between the state and the community in matters relating to children and families and seem to throw up different accountability issues (see Cunneen & Libesman 2002, pp.39-42). Therefore, judgements

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about the appropriateness of international programs for use in the Australian context require more time and consideration than is possible in this project.

It may also be the case that as Australian Indigenous communities grow in confidence and become more assertive, they will look to those Indigenous people in other countries with whom they feel some affinity for direction in how to manage these issues.

Australian Indigenous prevention and early intervention programs

Stanley *et al.* (2003) sum up the current position relating to local programs:

The present state of the evidence base is poor. Sutton (2001:143) reported that of 130 remedial violence programs operating in Indigenous communities in the 1990s (identified by Memmott et al. 2001), only six programs had undergone a 'reasonable evaluation that was in a documented form'. This pattern is very much a reflection of the wider professional community's failure to come to grips with program evaluation, as well as a lack of funding (Tomison & Poole 2000).

This review identified a few comprehensive published evaluations (McCallum 2000; Tsey & Every 2000; Robinson & Tyler 2003). Generally, programs that have not been rigorously evaluated, but which may be worthy of further study, displayed several of the following features:

- They have endured – in that they have been running for five years or more. This suggests a degree of support by those who use them and a belief in those who fund them and run them that they worth continuing.
- They are reaching significant numbers of Indigenous people – at least 50 people each year.
- If not yet evaluated, they have undertaken forms of monitoring or evaluation that go beyond soliciting expressions of satisfaction from clients and workers, such as recording changes in behaviours and health outcomes for children and families.
- They have substantial input from Indigenous people in their planning, staffing and methods of assessment.
- Programs consist of a number of components flexibly determined by the changing needs of the communities they serve.

Efforts are currently being made to integrate and coordinate what is known about the quality of programs in order to develop, fund and implement demonstration projects (Community Care Division 2004). The Secretariat for National Aboriginal and Islander Child Care has also published descriptions of projects in *Early Childhood Case Studies* (Rogers, 2004). Criteria for inclusion are not stated but hope is expressed that 'the case studies provide a rich source of ideas, enthusiasm and encouragement to all those interested in...Aboriginal and Torres Strait Islander children'.

Forms of evaluation specific to individual Indigenous programs will therefore need to be devised. In this regard, Robinson & Tyler's (December 2003) report on a Tiwi Islands early intervention program is of particular interest. The report describes the process of program development, and the rigorous methodologies used to monitor and evaluate the program are set out in detail. (It is important, of course, to keep in mind the many differences between New South Wales Indigenous people and Tiwi Islanders in determining the applicability of the Report.)

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CONCLUSIONS

It is noteworthy that the more enduring Indigenous early intervention programs are not of the structured and packaged kind, but appear to be 'organic' and multifaceted, arising from needs specific to a particular community, region or group of families, and changing as circumstances change – a model envisaged in the setting up of Multifunctional Aboriginal Children's (MACS) Centres.

This diversity may simply be a reflection of the ad hoc, one-off nature of programs that was criticised in Stanley *et al.* (2003). But it could also be seen as a logical outcome of the growing emphasis in the literature on the drive for empowerment of Indigenous people. If more than mere lip-service is paid to the most strongly affirmed feature of effective programs for Indigenous people summarised above – that is, cultural awareness and cultural partnership – then respect for communities seeking their own solutions will outweigh support for well-researched programs that have worked with non-Indigenous people. Stanley *et al.* (2003) note that some in the Indigenous community view research as an extension of colonisation, another form of exploitation where people 'pinch all this information and run away and people never hearing about it' (Anderson, 2000: 9-10). The advantages of a program that has developed standard procedures and methods of evaluation are not likely to weigh heavily against these other considerations when collaborative decisions are being made about the planning of Indigenous programs.

Finally, the results of this survey generally support and reinforce the conclusions of Stanley *et al.* (2003: 39-40):

'...the initiatives developed to address child abuse and neglect [in Indigenous communities] tend to be 'ad hoc', uncoordinated, short-term and not evaluated for effectiveness, thus providing only limited opportunities for knowledge growth and development.'

This review of the early intervention and prevention literature has covered major intervention strategies and drawn on the literature from a number of different fields. In the following, the main findings are summarised.

What are the most appropriate services to be delivered to whom and when?

The appropriateness of services will depend on the ages of children and the context in which they and/or their families live. Greater benefits are obtained by intervening early, even prior to the birth of the child, although this needs to be consolidated by post-natal support. It is now generally acknowledged that a **variety of services** should be available to meet the needs of the community. For example, home visiting is particularly useful for young mothers and hard-to-reach populations who may not wish to or are unable to attend centre-based services, whereas centre-based services may be preferable for other groups.

Many innovative or pilot programs now implement '**multi-component interventions** that focus on reducing a variety of risk factors in several domains: family, schools, teachers, and peer environments', which appear promising in reducing risk and strengthening pro-social behaviour (Marshall & Watt 1999 p: 299). This idea is also supported by meta-analyses showing that programs using multiple interventions work better than those using a single intervention strategy (Marshall & Watt 1999).

It is also clear that one-off interventions at a particular developmental stage are never going to be sufficiently robust to protect high risk individuals for all time: **recurrent support** acts like a booster (Mitchell *et al.* 2001, Shonkoff & Phillips 2000, National Crime Prevention 1999). It may also be necessary to 'wear' the cost of providing services universally rather than to a targeted group, if avoiding stigma is essential.

Need for rigorous program evaluations

One of the major findings from this review has been the need for more rigorous program evaluations and long-term follow-up studies, particularly in the Australian context. Many of the programs used in the early intervention and prevention field are designed

by the people who deliver the program, who do not then adequately describe the program in the literature. Further, evaluations are often conducted by the service providers who delivered the program. This introduces bias and can inflate the success of the interventions. A consequence of this lack of rigorous evaluation has been the ad hoc adoption of programs without a detailed understanding of the content, method of delivery or the expected outcomes.

When large-scale rigorous studies have been undertaken, they have almost invariably been undertaken overseas where the conditions may differ from in Australia. For instance, New South Wales has a universal health system and refers every new baby to a child and family nurse, which does not happen in the United States. The United States also has over three times the rate of children notified for child maltreatment in comparison to New South Wales.

Evaluation decisions

- Choices need to be made regarding the *type(s) of evaluation* to be undertaken, for example: evaluations investigating child developmental outcomes or evaluations investigating parental satisfaction with services?
- Evaluation measures need to be derived from specified program objectives.
- Different aspects of the evaluation need to be clarified – eg. cognitive and social outcomes or cost-effectiveness.
- Evaluation of the roll-out of programs is needed to determine if there is a lack of program fidelity due to 'slippage' or poor implementation.
- The potential tension between *program fidelity* and *sensitivity* to context needs to be recognised and taken into account. If a program has to be adapted in order to meet the needs of different groups, there is a corresponding need for evaluation measures to change.

- *What will count as an effective outcome* needs to be determined. If those few who derive significant benefit from a program are also the most vulnerable in the population, a statistically low level of general benefit and a high attrition rate may be justifiable. On the other hand small gains, provided they are above significance thresholds, by a larger population may be also cost-effective.

Fidelity of programs

What works under the carefully supervised conditions of a well-funded pilot project may be less effective when implemented as a large-scale intervention strategy. For example, the Community Mothers Program (Thornton *et al.* 2002) and the Hawaii Healthy Start Program (Duggan *et al.* 2004) both demonstrated the difficulty in maintaining program fidelity, such as ratio of families to staff, in the context of population based programs.

Recruitment and retention of participants

The literature examined in this review suggests that the first factor to limit the effectiveness of services to families is that many families do not take up the offer to participate in programs and even if they do, there is a high attrition rate.

Qualitative data suggests that the most vulnerable families are those most likely to decline the offer of services or to drop out. Vulnerable families are likely to see even well-intended support as intrusive and possibly threatening. Accessibility in terms of time and transport can also be a major barrier to accessing services. Before considering what programs or strategies might be beneficial, strategies to recruit and engage vulnerable families need to be in place.

Future directions

Service providers need to be clear about what it is they aim to change, how this might best be measured and what factors are likely to affect the chances of bringing about change. The focus of interventions should be on the 'mechanisms' through which risk or resilience are transmitted. As Rutter (2000) points out social disadvantage is associated with an increased risk in developmental psychopathology "largely

because these broad social features predispose to poor parenting. The proximal risk mechanism lies in the poor parenting rather than the poverty or social disadvantage as such" (Rutter, 2000, p. 653).

This review poses several questions for future research which relate to characteristics of the family, the programs and the service providers.

Family characteristics

- What are the characteristics of those who take up the opportunity for involvement in programs/services versus those who do not?
- What are the characteristics of those who drop out of a program versus those who persist?
- What other family factors such as domestic violence, substance abuse, mental illness of intellectual disability influence the effectiveness of the program?

Program characteristics

- What are the characteristics of programs/services with high retention rates versus those with high attrition rates?
- What strategies will improve retention rates, especially for the most vulnerable families?
- What length of program and frequency of contact with services will deliver the most cost-effective outcomes?

Service provider characteristics

- Staffing issues as related to effectiveness of programs: relative importance of personal qualities, qualifications, training and support provided, staff attrition, optimal case load.
- Where are programs best located: for instance home, centre, school, community centre?
- What contextual features (eg. cultural factors) need to be taken into account in the selection of programs?

In conclusion, all programs need to be carefully designed and implemented, monitored and modified to ensure they are refined in the light of new knowledge, and that outcomes for children and families continue to improve over time.

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