

# Using household survey data to inform policy decisions regarding the delivery of evidence-based parenting interventions

M. R. Sanders,\* C. Markie-Dadds,\* M. Rinaldis,\* David Firman† and Natalie Baigt†

\*The University of Queensland

†Queensland Health, Brisbane, Qld, Australia

Accepted for publication 15 October 2006

## Abstract

**Background** This study used household survey data on the prevalence of child, parent and family variables to establish potential targets for a population-level intervention to strengthen parenting skills in the community. The goals of the intervention include decreasing child conduct problems, increasing parental self-efficacy, use of positive parenting strategies, decreasing coercive parenting and increasing help-seeking, social support and participation in positive parenting programmes.

**Methods** A total of 4010 parents with a child under the age of 12 years completed a statewide telephone survey on parenting.

**Results** One in three parents reported that their child had a behavioural or emotional problem in the previous 6 months. Furthermore, 9% of children aged 2–12 years meet criteria for oppositional defiant disorder. Parents who reported their child's behaviour to be difficult were more likely to perceive parenting as a negative experience (i.e. demanding, stressful and depressing). Parents with greatest difficulties were mothers without partners and who had low levels of confidence in their parenting roles. About 20% of parents reported being stressed and 5% reported being depressed in the 2 weeks prior to the survey. Parents with personal adjustment problems had lower levels of parenting confidence and their child was more difficult to manage. Only one in four parents had participated in a parent education programme.

**Conclusions** Implications for the setting of population-level goals and targets for strengthening parenting skills are discussed.

## Keywords

family support, parenting

## Correspondence:

Matthew R. Sanders, PhD,  
Parenting and Family  
Support Centre, The  
University of Queensland,  
Brisbane, Qld 4072,  
Australia  
E-mail:  
matts@psy.uq.edu.au

## Introduction

Increasingly policy initiatives targeting antisocial behaviour, drug and alcohol use and mental health problems in children and young people, point to the important role of parenting practices in the prevention and amelioration of these problems (Taylor & Biglan 1998). Parenting programmes based on social learning principles have been repeatedly shown to be effective in reducing conduct problems in children and producing lasting positive change (e.g. Serketich & Dumas 1996; Sanders 1999;

Prinz & Jones 2003; Kotler & McMahon 2004). These programmes have also proven efficacious in prevention studies (Webster-Stratton 1998; Prinz & Dumas 2004). They reduce children's vulnerabilities to developing later serious antisocial behaviour problems by concurrently reducing children's exposure to family risk factors such as parental coerciveness, ineffective or inconsistent parenting practices, parental depression and stress, and by decreasing oppositional defiant behaviours (e.g. Dadds *et al.* 1987; Taylor & Biglan 1998; Sanders & McFarland 2000). Although there is clear evidence that parenting

interventions are effective, the social impact of these programmes is limited because they reach relatively few parents (Cunningham *et al.* 1995; Taylor & Biglan 1998). There are also substantial challenges in recruiting, engaging and retaining more socially disadvantaged and vulnerable families (Spoth & Redmond 2000; Heinrichs *et al.* 2005; Zubrick *et al.* 2005). The majority of parents who could benefit never receive parenting support (Cunningham *et al.* 1995). To make effective parenting interventions more widely available, more sophisticated public health approaches to parenting are required.

One example of an evidence-based parenting intervention system based on social learning principles that employs a public health framework is the Triple P – Positive Parenting Programme (see Sanders 1999). It incorporates five levels of intervention in a tiered continuum of increasing strength and decreasing population reach. These five levels of intervention incorporate media and communication strategies, primary care-based delivery of brief interventions, telephone-assisted and self-directed programmes and more intensive group and individual programmes targeting more severe problems. This multi-level approach applies a principle of the ‘minimally sufficient’ effective intervention so that a parent receives a level of intervention support appropriate to their needs but delivered in as cost-effective manner as possible.

Epidemiological research is needed to assist policymakers and service planners make informed decisions about who should receive evidence-based parenting interventions such as Triple P. Household survey data on parenting practices are a potentially useful cost-effective source of information that can be gathered on a large number of parents to establish appropriate population-level targets for parenting programmes. A population approach to parenting support needs to meet several key criteria to be effective (Sanders *et al.* 2005). These criteria include (1) knowing the baseline prevalence of targeted child problems (e.g. conduct problems); (2) knowing the baseline prevalence of targeted risk (e.g. inconsistent or coercive parenting) and protective factors (e.g. marital and social support, participation in parenting programmes) related to the development of child behaviour problems; (3) from randomized clinical trials knowing that an intervention changes the targeted risk and protective factors and reduces the child’s problems; (4) having interventions that are readily available; (5) having an effective system of training and dissemination for service providers; (6) making these interventions widely available to parents; and finally (7) having surveillance or monitoring measures in place to monitor the population-level impact of the intervention. Community surveillance or monitoring systems can be used to establish whether prevention programmes reach

specific target populations and to track the impact of interventions at a whole-of-population level (Mrazek *et al.* 2004).

The present study uses household survey data from a large population survey of parenting practices using a computer-assisted telephone interview (CATI) in Queensland, Australia to examine the first two of these criteria. The study aimed to use the data collected to inform policy decisions about parenting services by establishing: (1) the prevalence and child behavioural and emotional problems, specifically oppositional defiant behaviour problems; (2) the prevalence of potentially modifiable parental risk factors (dysfunctional parenting practices, positive and negative perceptions of the parenting role, parental adjustment difficulties including depression and stress); (3) the prevalence of potentially modifiable protective factors (parental self-efficacy, seeking professional help for a child’s behaviour problems, including participation in parenting programmes, and parents’ access to partner or social support); and (4) the relationship between the child and parent targets of a population-level parenting intervention and various socio-demographic factors (e.g. gender, parental age, educational level, ethnic background, household income, number of children, urban versus rural residence, child’s gender, position in family and age of child).

## Method

### Participants

The participants were 4010 primary caregivers living in Queensland, Australia with at least one child aged 12 years or less at the time of the survey. As 98.4% of the caregivers were parents, the term ‘caregiver’ will be replaced with ‘parent’ in this paper. Parents were ineligible to participate in the survey if they were less than 18 years of age; they did not speak English sufficiently well; they had a mental or physical disability that prevented them from being able to take part in a telephone interview; they were staying in the contacted dwelling but did not usually live there; or they did not have a child aged 12 years or less. If parents had more than one child in the target age range, they were asked select the eldest of these as the target child. Parents were instructed to answer child-oriented questions in relation to the target child only.

### Survey methods

Interviews were conducted using the Health Information Centre CATI system. Trained telephone interviewers and a supervisor were employed by the Queensland Health Department to

conduct the interviews. The survey was pilot-tested to refine the wording of questions and familiarize the interviewers with the content of the survey. To ensure consistency, interviewers were instructed to read the questions exactly as seen on the computer screen. All interviews were supervised, and randomly selected calls were monitored by the supervisor to maintain high interviewing standards during the interviewing period.

The survey design was to contact a random sample of private households in Queensland (a north-eastern state of Australia with approximately four million residents) and to ask to interview the principal caregiver where a household was found to have at least one child aged 12 years or less. A simple random sample of listed private telephone numbers was drawn from a database of all listed private numbers in Queensland. This was supplemented with a random sample of non-listed (silent) numbers in the Brisbane and Gold Coast area of Queensland, where the proportion of silent numbers is higher than in the rest of the state (more than 15% of all private numbers). This sampling scheme excluded around 2% of Queensland households with silent numbers. The scheme produced a sample of telephone numbers that included, as a subset, a good approximation to a simple random sample of households with a fixed telephone. A small proportion of the target population was excluded from selection because their household did not have a fixed telephone. (Around 4% of all Queensland households had no fixed telephone.)

## Measures

A structured interview was specifically designed for the survey to assess the following aspects of the parenting experience of Queensland parents.

### *Socio-demographic variables*

To establish the extent to which parenting and child behaviour problems were related to adverse socio-economic circumstances, a range of socio-demographic information was collected, including the age and sex of children and parents, respondent's employment status, respondent's education levels, respondent's marital status, whether the family resided in a metropolitan, urban or rural area, annual household income and respondent's ethnic background. These socio-demographic items, chosen for inclusion by the Health Information Centre, are based on a standard set of socio-demographic questions used by the Australian Bureau of Statistics.

### *Assessment of child behavioural and emotional problems*

This was assessed by a series of questions that asked all parents to report on their perceptions of how difficult their child was to manage. Parents used a Likert scale to rate how difficult their child's behaviour had been over the past 6 months (1 = not at all, 2 = slightly, 3 = moderately, 4 = very, 5 = extremely). Parents were also asked whether they considered their child had any emotional or behavioural problems over the past 6 months (yes, no). These questions constituted global measures of child functioning that had been used in the Western Australia Child Health Survey (Zubrick *et al.* 1995) and shown to be related to independent reports of behaviour difficulties in children by teachers.

We were particularly interested in the extent of conduct-related problems. Parents with children aged 2 years or more were asked to indicate whether their child had engaged in any of eight specific types of conduct problems over the last 6 months. Responses to these questions were used to establish the statewide prevalence of oppositional defiant disorder (ODD) in children. These eight difficult behaviours comprised: losing temper; arguing with adults; defying/refusing to cooperate with adults; deliberately annoying people; blaming others for their mistakes; being touchy or easily annoyed by others; being angry or resentful; and being spiteful and vindictive. This question was derived from the Diagnostic and Statistical Manual of Mental Disorders (APA 1994), which specifies the criteria for a diagnosis of ODD. A diagnosis of ODD was made when a parent reported that their child had often or very often engaged in four or more of these behaviours in the last 6 months.

### *Assessment of family risk factors*

#### *Specific parenting practices*

To assess the presence of parental risk and protective factors, parents with children aged 2 years or more were asked about their use of parenting strategies for encouraging desirable behaviour and dealing with misbehaviour. The parenting strategies for encouraging desirable behaviour included: praising the child by describing what was pleasing, giving a treat, reward or fun activity, or giving attention such as hug or wink when the child engaged in desirable behaviour. Strategies for dealing with misbehaviour were divided into two groups. The first set of five strategies have been shown to be effective in managing misbehaviour, and included: ignore the problem behaviour, tell the child to stop misbehaving, use a consequence that fits the situation, send the child to quiet time or timeout and call a family

meeting to work out a solution. The second set of strategies have been associated with coercive or ineffective discipline, and included: single smack with hand, smack more than once with hand or with an object other than hand, shout or become angry, threaten to do something the child would not like but not necessarily follow through with it, and hold, cuddle or otherwise use physical contact to settle and calm the child. These two measures of parenting strategies were derived from an extensive scientific body of research that has identified specific parenting practices related to pro-social and deviant outcomes for children (Patterson 1982).

With regard to encouraging desirable behaviour, parents were asked to consider how likely they were to use each of the three parenting strategies when their child behaves well or does things that please them. For each of the 10 parenting strategies for managing misbehaviour, parents were asked to consider how likely they were to use each of the 10 strategies when their child really misbehaves. A 5-point Likert scale was used for each parenting strategy (1 = very unlikely through to 5 = very likely). A composite variable was also constructed to assess whether the parent reported that they were likely to use some form of physical punishment (smacking or hitting their child with an object other than their hand) when their child really misbehaved (not likely versus likely).

Two parenting strategies listed above were excluded from the analyses. Interviewers reported that parents consistently expressed misunderstanding and difficulty reporting how likely they were to use the following two strategies when their child really misbehaved: (1) use a consequence that fits the situation; and (2) threaten to do something the child would not like and not necessarily follow through with it. As a result, these items were excluded from the analyses.

#### *Parents' perceptions of the positive and negative aspects of their parenting roles*

We also examined parents' perceptions of some positive and negative aspects of the parenting experience. As parenting is often described as involving conflicting emotions, parents were asked to rate the extent to which they perceived parenting to be rewarding, fulfilling, demanding, stressful and depressing. Five-point Likert scales were used (1 = not at all through to 5 = extremely). For statistical purposes, coding of responses to the negative questions (demanding, stressful, depressing) was reversed. Dichotomous measures were then derived for each measure (i.e. not at all/slightly/moderately versus very/extremely). This item, based on consensual validation of three

child and family psychology experts, was generated to have an appropriate balance of positive and negative attributes of the parenting role.

#### *Parental adjustment*

As parental depression and high levels of parenting stress have been shown to be related to behaviour problems in children (Institute of Medicine 1994; Sawyer *et al.* 2000), parental adjustment was assessed. Parents rated how stressed and depressed they had felt over the 2-week period prior to the survey on a 5-point Likert scale (1 = not at all, 2 = slightly, 3 = moderately, 4 = very, 5 = extremely).

#### **Family protective factors**

##### *Parental self-efficacy*

Parents were also asked how confident they had felt in the last 6 months to undertake their responsibilities as a parent to their child aged 12 years or less. A 5-point Likert scale was used (1 = not at all, 2 = slightly, 3 = moderately, 4 = very, 5 = extremely). Parental self-efficacy was measured as it is a construct highlighted in the developmental psychology literature as a mediator of developmental outcomes in children (Bandura 1977, 1995).

##### *Help-seeking behaviour and participation in parenting programmes*

To assess the extent to which parents seek professional assistance for behavioural and emotional problems in children, parents were asked a series of questions about what parenting programmes they had completed or professionals they had seen. These included whether they had seen a professional about their child's behaviour in the past 12 months (yes, no) and, if so, what sort of professional they had seen (open-ended response); whether they had participated in any parent education programme or parenting course in the 12 months prior to the survey (yes, no); and whether they had heard of Triple P (yes, no) and, if so, the medium through which they had heard of Triple P (open-ended response). Triple P – Positive Parenting Programme was included in the survey because it is the most widely available evidence-based parenting education programme available in Queensland. These items were generated to represent indices of active parental coping strategies (Lazarus & Folkman 1984).

### Parental social support

To assess the availability of practical and emotional support for parents, respondents were asked whether they lived with a partner (yes, no). Those respondents living with a partner at the time of the survey were also asked about: the extent to which they and their partner agree about methods of disciplining their child (not at all, rarely, sometimes, usually, always); and how supportive their partner had been towards them in their role as a parent in the last 6 months (not at all, slightly, moderately, very, extremely). These items were generated to represent indices of parental coping resources (Lazarus & Folkman 1984).

## Results

### Statistical analyses

Respondents whose target child was aged less than 2 years (622 cases) were not asked questions about the frequency with which their child misbehaved, or about their likely use of parenting strategies for encouraging desirable behaviour and managing misbehaviour. Consequently, analyses using these variables were conducted on the sample of parents with children aged 2–12 years ( $n = 3378$ ). Questions on the degree to which parents agreed about discipline or were supportive of one another were only asked of parents who lived with a partner with whom they shared parenting duties. At the time of the survey, 640 respondents reported that they did not live with a partner.

The proportion of missing values per question was negligible (<1%) with the exception of total household income. Eight per cent of respondents (340 people) either refused to answer or did not know their total household income. Consequently, few records were excluded from multivariate analyses because of missing data. However, relatively large numbers of records were excluded in models that included terms with structural missing values, such as questions on use of various parenting strategies, which were only asked of parents who had a child aged 2–12 years. The size of the sample to which models apply is on or near 4010, except where other sample sizes are indicated.

Bivariate tests of associations between categorical variables were conducted using chi-squared analyses. Multivariate logistic regression was used to model dichotomous outcome variables. Results are presented as odds ratios together with 95% confidence intervals. Two modelling strategies were pursued: dependent terms were regressed against specific groups of variables (e.g. parenting-related variables, socio-demographic measures) to explore their predictive power, and a 'best' or most

parsimonious model was determined for each dependent variable. The aim of such models is to find a minimum set of predictors that explain the maximum possible amount of the observed variation. Many survey questions were moderately to strongly correlated with other survey questions. This meant there were many nearly optimal (best) models and comment is made about alternative models where appropriate. All terms in multivariate models found to be significant at the 95% level were retained in final models.

### Demographic characteristics of individual respondents

A total of 4010 parents (eligible response rate 82%) with a child aged 12 years or under completed the parenting telephone interview. Table 1 shows the demographic characteristics of respondents. Parents were mostly mothers aged between 30 and 39 years, which was expected, given the target age range of the children in the survey of 0–12 years. Overall, 81% of fathers were employed full-time compared with 18% of mothers. About 43% of mothers performed home duties compared with 4% of fathers. Parents of Aboriginal or Torres Strait Islander ethnicity constituted 2.5% of the sample. The vast majority of the sample (87%) reported that they did not identify with an ethnic group. Of those who did identify with an ethnic group, backgrounds included Italian, Greek, British, New Zealand, Dutch, Vietnamese, Chinese and German. The largest proportion of respondents were either married or in a de facto relationship (83.5%). Of the 16.2% ( $n = 655$ ) who classified themselves as separated, widowed, divorced or never married, 4.6% ( $n = 30$ ) reported they lived with a partner. Conversely, nine respondents who reported that they were married or de facto revealed that they did not currently live with a partner. With regard to the demographics of the target children in the sample, boys (51.2%) slightly outnumbered girls (48.8%), and the majority were either the youngest child in the family or an only child (69.3%). The largest proportion of the target children were aged 9–12 years (34.4%), 22.6% were aged 6–8 years, 20% were aged 3–5 years and 23% were aged 2 years or less.

### Prevalence of child emotional or behavioural problems

About one-third (29%) of parents reported on the yes/no dichotomous scale that their child had an emotional or behavioural problem during the 6 months prior to interview. Parents' assessments of their parenting experience were also significantly associated with whether they reported that their child had an emotional or behavioural problem. Based on logistic regression analysis, parents who reported that their child had emotional or

**Table 1.** Demographic characteristics of respondents ( $n = 4010$ ) and demographic characteristics of respondents' families ( $n = 4010$ )

Characteristic	Subgroup	Survey ( $n$ )	Sample (%)
Gender	Male	933	23.3
	Female	3076	76.7
Age (years)	18–29	761	19.0
	30–39	2028	50.6
	40–49	1092	27.2
	50–59	107	2.7
	60 and over	20	0.5
Education level	No schooling	6	0.1
	Primary school	131	3.3
	Junior high school	1241	30.9
	Senior high school	847	21.1
	Trade, technical certificate or diploma	973	24.3
	University or college degree	807	20.1
	Other	1	0.0
	No response	4	0.1
Ethnic background	Aboriginal/Torres Strait Islander/south sea islander	99	2.5
	Other	3911	97.5
Marital status	Married/de facto	3349	83.5
	Separated, widowed, divorced, never married	655	16.2
	Unwilling to answer	6	0.1
Employment status	Full-time	1320	32.9
	Part-time/casual	1152	28.7
	Home duties	1351	33.7
	Unemployed	57	1.4
	Full-time student	44	1.1
	Part-time student	34	0.8
	Retired	16	0.4
	Permanently ill/unable to work	34	0.8
	Do not know, unwilling to say	344	8.6
Annual household income	Less than \$25,000	829	20.7
	\$25 001–\$50 000	1507	37.6
	\$50 001–\$100 000	1114	27.8
	Over \$100 000	216	5.4
	Do not know, unwilling to say	344	8.6
Number of children under 18 years	One	1087	27.1
	Two	1697	42.3
	Three	882	22.0
	>Three	343	8.6
Place of residence (based on RaRA classifications)	Capital city, major urban Rural, remote	2619	65.3
		1391	34.7
Sex	Male	2054	51.2
	Female	1954	48.8
Position in family	Only child	1087	27.1
	Youngest	1690	42.2
	Middle	452	11.3
	Oldest	780	19.5
Age (years)	0–2	923	23.0
	3–5	802	20.0
	6–8	905	22.6
	9–12	1380	34.4

behavioural problems were less likely than parents who reported that their child did not have emotional or behavioural problems to say they were confident in their parenting roles or that parenting was rewarding. They were also more likely to say their parenting experience was stressful, demanding and depressing (see Table 2). There was no significant association

between parents' reports of whether their child had an emotional or behavioural problem and their reports of how fulfilling they perceived their parenting role.

When only socio-demographic variables were included in models, parents without a partner were twice as likely to report their child had emotional or behavioural problems. The

**Table 2.** Parents who reported their child exhibited an emotional or behavioural problem ( $n = 3388$ )

Predictor	OR†	95% CI
Experience of parenting in the last 6 months*		
Confidence in parenting	0.48†	0.40–0.57
Parenting is demanding	1.37†	1.17–1.60
Parenting is stressful	1.58†	1.32–1.88
Parenting is depressing	2.07†	1.26–3.40
Parenting is rewarding	0.60†	0.48–0.74
Parenting is fulfilling	0.83	0.66–1.07
Socio-demographic variables		
Sex of parent (base: male)	1.28‡	1.07–1.52
Sex of child (base: male)	0.83‡	0.72–0.96
Age of child (for every one year increase in age)	1.13†	1.11–1.16
Position in family (base: only child)		
Youngest	ns	
Middle	ns	
Eldest	1.48†	1.19–1.85
Parent has a partner (base: no)	0.46†	0.39–0.56

\*Predictor (base: not at all/slightly/moderately versus very/extremely).

†Ratios are significant,  $P < 0.001$ .

‡Ratios are significant,  $0.001 < P < 0.05$ .

CI, confidence interval; ns, not significant; OR, odds ratio.

probability of reporting child emotional or behavioural problems also increased with the age of the child. The oldest child in families of two or more children was about 50% more likely to have an emotional or behavioural problem. Mothers were more likely than fathers to say that their child had an emotional or behavioural problem, and boys were more likely than girls to be classed as having an emotional or behavioural problem (see Table 2).

In univariate analyses, respondents from families on low incomes were significantly more likely to report that their child had emotional or behavioural problems. However, income was strongly correlated with whether the respondent had a partner, with 87% of parents with a partner having family incomes over \$25 000 compared with only 28% of those without a partner. Consequently, income became non-significant after having a partner was included in logistic models.

Overall in the multivariate model, the variables most strongly associated with a parent reporting that their child had an emotional or behavioural problem were: how difficult the child's behaviour was; whether the parent had consulted a professional about their child's behaviour; and the number of conduct-related problems reported. Other terms which made up the best, most parsimonious model as detailed in Table 3 were: age of child; whether the parent had a partner; how stressed the parent felt in the 2 weeks prior to the survey; and levels of confidence in the parenting role. Specifically, the probability of a child

**Table 3.** Parents who reported their child exhibited an emotional or behavioural problem: best model ( $n = 3388$ )

Predictor	OR*	95% CI
Stressed in the last 2 weeks (base: not/slightly/moderately versus very/extremely)	1.57*	1.27–1.93
Confidence in parenting	0.61*	0.49–0.75
Parenting is depressing	2.02†	1.08–3.76
Age of child (for every 1 year increase in age)	1.10†	1.07–1.13
Parent has a partner (base: no)	0.62*	0.50–0.77
Difficulty of child's behaviour (for every increase of one level in degree of difficulty)	1.83*	1.63–2.04
Seen a professional about child's behaviour (base: no)	7.56*	5.25–10.68
Number of misbehaviours child is said to do often or very often (for every increase of one kind of misbehaviour)	1.23*	1.15–1.31

\*Ratios are significant,  $P < 0.001$ .

†Ratios are significant,  $0.001 < P < 0.05$ .

CI, confidence interval; OR, odds ratio.

having an emotional or behavioural problem increased as the child's age increased and as parents reported having no partner, having higher stress levels and lower confidence levels.

### Severity of child's behaviour difficulties

When asked to report on the level of difficulty of their child's behaviour, more than three-quarters of all parents reported that their child's behaviour was either not at all (41%) or only slightly difficult (35%). About one-fifth of parents said that their child's behaviour was moderately difficult (19%). The remaining 5% reported that their child's behaviour had been either very (3%) or extremely (2%) difficult over the last 6 months.

There were significant associations between parents' reports of the level of difficulty of their child's behaviour and parents' appraisal of their parenting experience. Based on a logistic regression analysis conducted with all parents, those who thought their child's behaviour was very or extremely difficult were significantly more likely to have a negative perception of the parenting experience (see Table 4). These parents were significantly less likely to feel confident about their parenting or find parenting rewarding, and they were significantly more likely to think that parenting was demanding, stressful and depressing than parents who thought their child's behaviour was not at all, slightly or moderately difficult. There was no significant association between the extent to which parents perceived parenting to be fulfilling and parents' reported difficulty of their child's behaviour.

When only socio-demographic variables were considered predictors, mothers were more likely than fathers to rate their

**Table 4.** Parents who thought their child's behaviour was very or extremely difficult

Predictor	OR	95% CI
Experience of parenting ( <i>n</i> = 4010)*		
Confidence about parenting	0.46†	0.32–0.65
Parenting is rewarding	0.46†	0.32–0.67
Parenting is demanding	3.53†	2.02–6.16
Parenting is stressful	4.40†	3.07–6.42
Parenting is depressing	2.82†	1.57–5.05
Parenting is fulfilling	ns	
Socio-demographic variables ( <i>n</i> = 3666)		
Sex of child (base: male)	0.62†	0.45–0.85
Sex of respondent (base: male)	1.79†	1.14–2.80
Position in family (base: only child)		
Youngest	0.97	0.64–1.49
Middle	2.25†	1.37–3.68
Eldest	1.78†	1.13–2.78
Parent had a partner (base: no partner)	0.55†	0.36–0.84
Family income (base: <\$25 000)	0.65‡	0.44–0.97

\*Predictor (base: not at all/slightly/moderately versus very/extremely).

†Ratios are significant,  $P < 0.001$ .

‡Ratios are significant,  $P < 0.05$ .

CI, confidence interval; ns, not significant; OR, odds ratio.

child's behaviour as very or extremely difficult, parents were more likely to rate a son's than a daughter's behaviour as very or extremely difficult and parents with a partner were less likely than parents without a partner to rate their child's behaviour as very or extremely difficult. Position of child in the family was also significant, with middle and eldest children more likely to be rated as being difficult than youngest or only children. Parents from families on low incomes were more likely to rate their child's behaviour as very or extremely difficult (see Table 4). Socio-demographic variables did not remain significant predictors of difficult child behaviour after the various dimensions of parents' appraisal of their parenting experience, and/or number of child problem behaviours were included in multivariate models.

When all variables significant at the univariate level were included in models, all socio-demographic variables listed in Table 4 ceased to be significant, as did parenting appraised as rewarding and confidence about parenting. In addition, after controlling for other predictors, participation in Triple P or any other parenting programme was not significantly associated with parents' reports of difficult child behaviour.

Reporting that their child had an emotional or behavioural problem, seeing a professional about their child's behaviour and giving a treat to reward good behaviour were all found to be independent, significant predictors of parents' reports of difficult child behaviour. The likelihood of describing a child's

**Table 5.** Parents who thought their child's behaviour was very or extremely difficult: best model (*n* = 3388)

Predictor	OR*	95% CI
Parenting is demanding	2.22*	2.02–6.16
Parenting is stressful	2.99*	3.07–6.42
Parenting is depressing	2.64*	1.57–5.05
Child has an emotional or behavioural problem (base: no)	2.04*	1.28–3.28
Have been to see a professional about child's behaviour (base: no)	4.32*	2.79–6.69
Number of misbehaviours child is said to do often or very often (for every increase of one kind of misbehaviour)	1.86*	1.68–2.05
Age of child (for any increase of 1 year of age)	0.92†	0.86–0.98

\*Ratios are significant,  $P < 0.001$ .

†Ratios are significant,  $0.001 < P < 0.05$ .

CI, confidence interval; OR, odds ratio.

behaviour as very or extremely difficult was found to decrease as the age of the child increased.

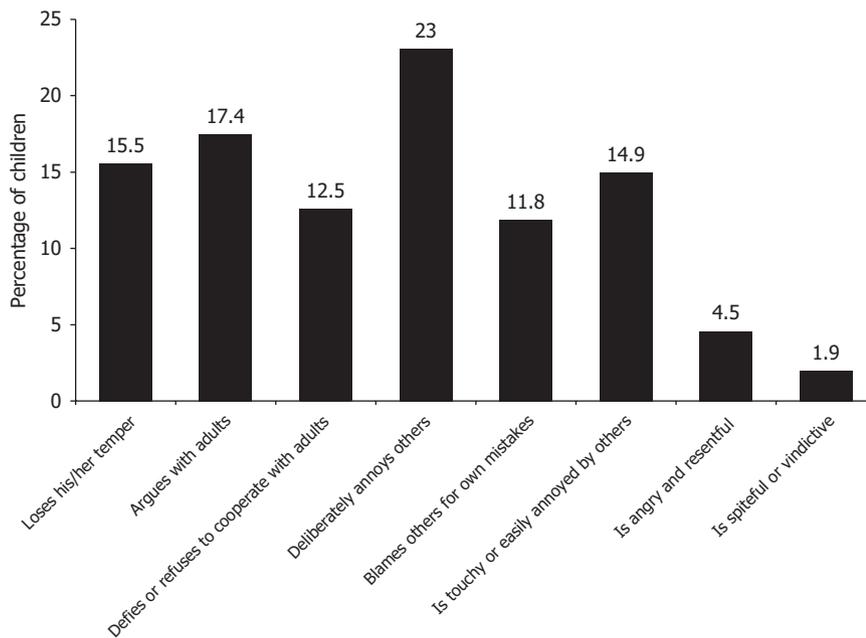
The most parsimonious model for predicting parents' reports of very or extremely difficult child behaviour is presented in Table 5. Models for whether parents rated their child's behaviour as moderately, very or extremely difficult were qualitatively similar to those where only very and extremely difficult were grouped.

### Prevalence of conduct-related problems

Parents of children aged 2 years or more were asked how often their child engaged in each of the eight specific types of conduct problems. Figure 1 shows the percentage of children who engaged in each behaviour often or very often as reported by their parents. Almost 9% of children exhibited clinically elevated levels of ODD, defined as the presence of four or more of the behaviours listed in Fig. 1.

### Parenting strategies for dealing with misbehaviour

The relationship between parents using various parenting strategies and the degree of emotional and behavioural problems they attributed to their child was modelled using logistic regression. Four measures of difficulty of the child's behaviour were considered: none/slightly/moderately versus very/extremely difficult; none/slightly versus moderately/very/extremely difficult; whether the child had an emotional or behavioural problem; and whether the child had ODD (four or more conduct-related problems). These dependent variables were regressed against the likelihood of parents using each of the eight parenting strategies for dealing with misbehaviour. The results are presented in Table 6.



**Figure 1.** Percentage of parents reporting various disruptive child behaviours.

**Table 6.** Odds ratios\* for logistic models fitted to different measures of behavioural problems: use of parenting strategies for dealing with misbehaviour ( $n = 3388$ )

Variable	Difficulty of child's behaviour (very/extremely)		Difficulty of child's behaviour (moderately/ very/extremely)		Emotional or behavioural problem		Oppositional defiant disorder	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Ignore the problem behaviour by not giving child any attention	1.61*	1.17–1.22	1.31†	1.10–1.56	1.00	0.85–1.18	1.83*	1.26–2.12
Tell child to stop misbehaving	0.62	0.32–1.21	1.25	0.82–1.91	0.99	0.70–1.40	1.29	0.64–2.63
Give child a single smack with hand	1.37	0.98–1.91	1.45*	1.22–1.71	0.95	0.81–1.11	1.09	0.84–1.41
Smack child more than once or with an object other than hand	2.28*	1.47–3.54	1.55*	1.17–2.04	1.37†	1.04–1.80	2.21*	1.53–3.19
Shout or become angry with child	1.87*	1.23–2.84	1.94*	1.58–2.37	1.68*	1.41–2.00	2.77*	1.91–4.02
Send child to quiet time or timeout	1.00	0.67–1.48	1.49*	1.20–1.85	1.26†	1.05–1.53	1.44†	1.01–2.05
Call a family meeting to work out a solution to problem	0.85	0.61–1.17	1.01	0.86–1.19	1.13	0.97–1.31	0.99	0.77–1.28
Hold, cuddle or otherwise use physical contact to settle or calm child	0.76	0.55–1.05	0.86	0.73–1.03	0.98	0.83–1.15	0.68*	0.53*–0.89*

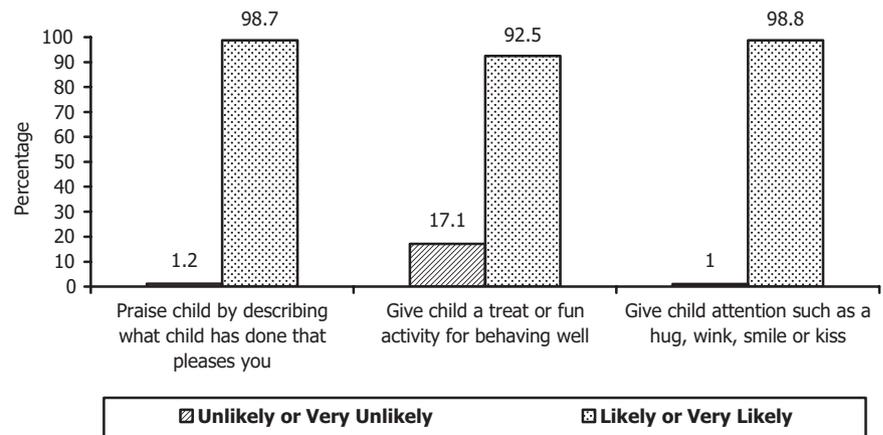
\*Ratios are significant,  $P < 0.001$ .

†Ratios are significant,  $0.001 < P < 0.05$ .

CI, confidence interval; OR, odds ratio.

When parenting strategies for dealing with misbehaviour were considered predictors of problem child behaviour, shouting or becoming angry with the child was significantly associated with each of the measures of child problem behaviour. Being likely to smack more than once or with an object other than the hand was also significantly associated with each dependent variable. Both giving the child a single smack with the hand and sending the child to quiet time or timeout were significant for moderately to extremely difficult child

behaviour but not for very or extremely difficult behaviour. Parents were over 50% more likely to report their child was very or extremely difficult or as having ODD if they reported they were likely to ignore problem behaviour. Calling a family meeting to work out a solution to a problem was not significantly associated with any measure of child difficulty or problem behaviour. Holding, cuddling or using other physical contact to settle or calm a child was significantly negatively associated with ODD.



**Figure 2.** Percentage of parents reporting use of strategies for encouraging desirable behaviour.

### Parents' use of strategies when children behave appropriately

Figure 2 shows the likelihood of parents' use of various positive reinforcement strategies when their child behaves appropriately. The majority of parents were likely or very likely to praise their child by describing what he or she has done that pleases them (98.7%); give them a treat, reward or fun activity for behaving well (82.5%); or give them attention such as a wink smile or kiss (98.8%).

There was no association between any of the three strategies and whether a child was reported to have an emotional or behavioural problem, the number of different misbehaviours, or whether the parent had participated in a parenting course.

Mothers were significantly more likely than fathers to use each of the three strategies listed in Fig. 2. As the child's perceived level of difficulty increased, parents were less likely to use praise or attention, but were more likely to give a treat, reward or fun activity when their child behaved well. After controlling for difficulty of behaviour and gender of parent, parents with partners were significantly less likely to report giving their child a treat, reward or fun activity for behaving well.

### Parents' use of strategies when children misbehave

Figure 3 shows parents' reports of the likelihood of their use of strategies for dealing with misbehaviour. Of the strategies that have been shown to be effective in managing misbehaviour, 94.9% of parents reported they were likely or very likely to tell the child to stop misbehaving, 78.5% were likely or very likely to send the child to quiet time or timeout and 42.2% were likely or very likely to call a family meeting to work out a solution to the problem. More than a quarter of parents (28.1%) were likely or very likely to ignore the problem behaviour by not giving him or her any attention.

When considering the parenting strategies that have been shown to be less effective in the management of child misbehaviour, most parents reported that they were likely or very likely to shout or become angry with their child (70.8%) and to hold, cuddle or otherwise use physical contact to settle and calm their child (68.5%) when their child really misbehaved. Just over 43% of parents reported they were likely or very likely to give their child a single smack with their hand (43.4%), while 7.7% reported they were likely or very likely to smack their child more than once or with an object other than their hand when their child really misbehaved.

### Parental self-efficacy

Parental self-efficacy is an important aspect of good parenting. The majority of parents (82%) reported that they were very or extremely confident in undertaking their responsibilities as a parent. About 16% of parents were moderately confident in their parenting role and only 2% were not at all or slightly confident. Factors found to be most strongly predictive of parental confidence were having a supportive partner and having a child with low levels of difficult behaviour. Logistic regression analysis indicated that parents were more likely to report that they were confident if their partner was supportive (for those who had partners). Confidence in parenting decreased as difficulty of the child's behaviour increased. Parents who reported their child had an emotional or behavioural problem were also significantly less likely to report being very or extremely confident. Fathers were significantly more likely than mothers to report that they were very or extremely confident in undertaking their responsibilities as a parent (see Table 7).

There was no evidence that parenting confidence was associated with a parent's age, parents' education level, family income,

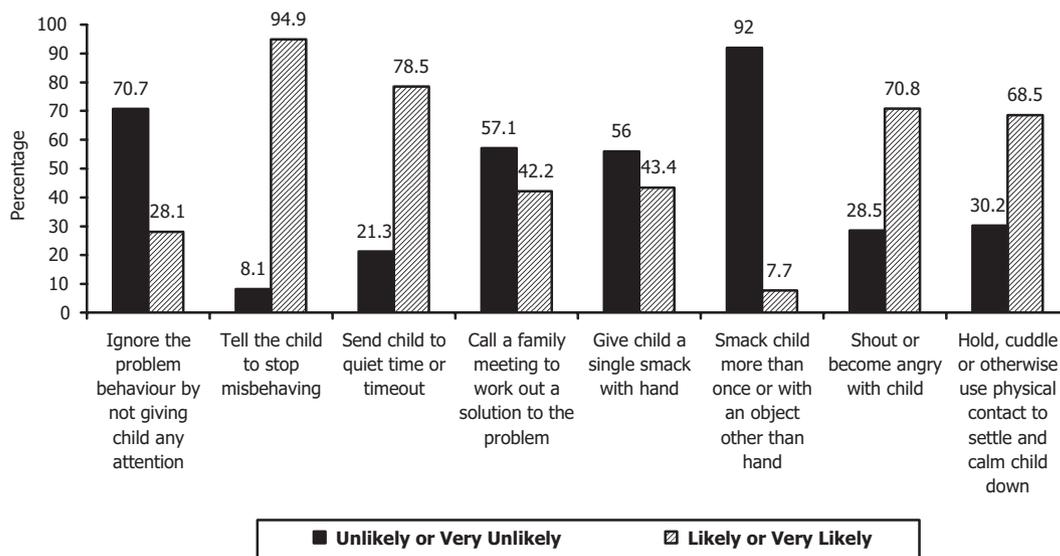


Figure 3. Strategies for dealing with misbehaviour.

Table 7. Predictors of confidence in parenting ( $n = 3349$ )

Predictor	OR*	95% CI
Child has an emotional or behavioural problem (base: no)	0.60*	0.49–0.75
Difficulty of child's behaviour (for every unit increase)	0.66*	0.60–0.74
Seen a professional about child (base: no)	0.84	0.60–1.17
Supportive partner (base: no)	2.49*	1.97–3.16
Sex of parent (base: male)	0.71*	0.55–0.90

\*Ratios are significant,  $P < 0.001$ .

CI, confidence interval; OR, odds ratio.

rurality, child's gender or child's age. Having a supportive partner was a significant predictor at the multivariate level. However, simply having a partner was only significant at the univariate level and, after adjusting for other strong predictors, was not a significant predictor of confidence in parenting in multivariate models.

### Parental adjustment

Focusing on depression and stress as measures of parental adjustment, the majority of respondents (81.1%) were not at all, slightly or moderately stressed in the 2 weeks prior to the survey. The remainder (18.9%) reported that they were very or extremely stressed. Similarly, 95.4% were not at all, slightly or moderately depressed, while 4.5% were very or extremely depressed in the 2 weeks prior to the survey.

### Parental social support

In the assessment of the availability of practical and emotional support for parents, 84% of the sample reported that they were living with a partner at the time of the survey. The majority reported that their partner was very or extremely supportive of them in their role as a parent (87%). Further, almost 90% reported that they and their partners usually or always agreed over methods of disciplining their child. More than half of the sample reported that their friends, family and neighbours were very or extremely supportive of them in their role as a parent (56%).

Parents who reported that their child had an emotional or behavioural problem were less likely to say that they agreed with their partner about discipline strategies and less likely to indicate that their partner was supportive of them. Parents whose child was classed as having ODD were also less likely to agree with their partner over discipline strategies, and much less likely to say that their partner was supportive. The proportion of parents who agreed about discipline strategies and who said they had a supportive partner decreased as the perceived level of difficulty of their child increased (see Table 8).

### Consulting a professional

Regardless of whether a parent considered their child to have an emotional or behavioural problem, only 9% of parents had consulted a professional about their child's behaviour in the previous 12 months. However, one-quarter of parents (25.3%)

**Table 8.** Extent and predictors of parental support ( $n = 3349$ )

Predictor	Extent of agreement with partner over parenting issues			Extent of partner support		
	Usually/always	Not/rarely/somewhat	$\chi^2$	Very/extremely	Not/slightly/moderately	$\chi^2$
Difficulty of child's behaviour						
Not at all difficult	91.9	8.1		89.8	10.2	
Slightly difficult	89.9	10.1		86.4	13.6	
Moderately difficult	87.2	12.8		84.9	15.1	
Very difficult	81.3	18.7	25.2	72.5	27.5	49.5
Extremely difficult	78.0	22.0	4 d.f.	63.4	36.6	4 d.f.
Child has an emotional or behavioural problem						
No	92.3	7.7	54.8	89.3	10.7	45.7
Yes	83.2	16.5	1 d.f.	80.3	19.7	1 d.f.
Child has oppositional defiant disorder						
No	89.9	10.1	11.2	87.6	12.4	57.4
Yes	82.3	17.7	1 d.f.	68.8	31.2	1 d.f.

**Table 9.** Predictors of having seen a professional about a child's behaviour ( $n = 3388$ )

Predictor	OR*	95% CI
Child has an emotional or behavioural problem (base: no)	8.29*	5.89–11.67
Difficulty of child's behaviour (for every unit increase)	1.94*	1.65–2.27
Number of misbehaviours (for every increase of one)	1.11†	1.02–1.20
Sex of child (base: male)	0.49*	0.37–0.65
Parent has a partner (base: no)	0.60*	0.45–0.82
Number of children in the family (base: one)	0.70†	0.50–0.96
Sex of parent (base: male)	1.33	0.93–1.90
Age of child (for an increase of 1 year)	1.05	1.00–1.09

\*Ratios are significant,  $P < 0.001$ .

†Ratios are significant,  $0.001 < P < 0.05$ .

CI, confidence interval; OR, odds ratio.

who considered their child to have an emotional or behavioural problem in the past 6 months, had consulted a professional about their child's behaviour in the last 12 months. The most frequently consulted professionals included family doctors, paediatricians, psychologists and teachers.

Logistic regression models were fitted using socio-demographic variables and other variables associated with difficult child behaviour. The results (see Table 9) showed that parents were eight times more likely to consult a professional about their child's behaviour if they reported that their child had an emotional or behavioural problem. The likelihood increased with every unit increase in difficulty of the child's behaviour and number of reported conduct problem behaviours. Parents were twice as likely to consult a professional about a son than a daughter, and about an only child compared with one with siblings. After adjusting for other significant

predictors, parents with a partner were less likely to consult a professional about their child's behaviour.

#### *Participation in parent education programmes*

Almost one-quarter (22.6%) of the sample reported that they had participated in a parent education programme. Based on multivariate logistic regression analysis, parents who reported that they had participated in a parent education programme were more likely to have seen a professional about their child's behaviour in the last 12 months and were more likely to say that their child had an emotional or behavioural problem. The probability of participating in a parent education programme increased with increasing difficulty of the child's behaviour and increased as highest level of education achieved by the parent increased. Mothers were much more likely than fathers to have participated in a parent education programme (see Table 10).

There were no significant differences in help-seeking based on parents' appraisal of their parenting experience, level of parenting confidence, extent of partner support, or level of agreement between partners regarding parenting strategies, or other socio-demographic variables.

#### *Programme awareness of Triple P*

Forty-three per cent ( $n = 1723$ ) of the sample reported that they had heard of the Triple P – Positive Parenting Programme, with just over 6% having participated in Triple P. Of those who had heard of Triple P, parents had been mostly informed via pre/school newsletter (31.8%), word of mouth (28.4%), newspapers/magazines (16%) or television (7.8%).

**Table 10.** Predictors of participation in a parent education programme ( $n = 3388$ )

Predictor	OR*	95% CI
Child has an emotional or behavioural problem (base: no)	1.13	0.93–1.37
Difficulty of child's behaviour (for every unit increase)	1.18*	1.08–1.30
Seen a professional about child (base: no)	2.22*	1.71–2.89
Sex of child (base: male)	0.96*	0.82–1.13
Sex of parent (base: male)	2.23*	1.80–2.76
Age of child (for an increase of 1 year)	1.04*	1.01–1.06
Highest education level (base: junior high school)		
Primary school or less	0.73	0.42–1.25
Competed senior school	1.32†	1.04–1.67
University/college/trade	2.23*	1.84–2.70

\*Ratios are significant,  $P < 0.001$ .

†Ratios are significant,  $0.001 < P < 0.05$ .

CI, confidence interval; OR, odds ratio.

## Discussion

The first aim of the study was to examine the prevalence of child behavioural and emotional problems as reported by parents in the community. Almost one in three parents reported their child had a behavioural or emotional problem in the previous 6 months. Although approximately one in 10 parents reported their child displayed high levels of disruptive and oppositional behaviour (e.g. disobedience, temper outbursts, arguing), a smaller proportion of parents (5%) reported that their child's behaviour was very or extremely difficult to manage. The prevalence of oppositional defiant symptoms found in the present survey (9%) is slightly higher than that reported in the *National Mental Health Survey of Children and Adolescents*, where 6% of children aged between 3 and 16 years were found to exhibit ODD (Sawyer *et al.* 2000), but similar to the percentage rate reported by Campbell (1995). This relatively high prevalence of oppositional defiant behaviours is a concern, as this behaviour pattern is predictive of children being at increased risk in adolescence of adverse development outcomes (McMahon 1999).

Parents' overall appraisal of their parenting experience was related to how difficult their child was to manage, with parents of the most difficult children perceiving parenting as a negative experience. Those parents viewing parenting in negative light were more likely to be mothers, without a partner, and reported lower levels of confidence in their parenting roles. Parents reporting that their child had experienced a behavioural or emotional problem over the past 6 months were more likely to view the parenting role as demanding and stressful, and were more likely to have consulted a professional about their child's behaviour. Of course, while the associations among these vari-

ables were significant, cross-sectional survey data such as this precludes inference about causality.

The present findings have implications for planning services designed to reduce the prevalence rates of conduct problems. There were approximately 591 100 children in Queensland in the 2–12 years age group at the time of the survey (Australian Bureau of Statistics 2003). Using the prevalence rate of conduct problems obtained here means that approximately 53 199 (9%) would have an oppositional defiant pattern of behaviour. If an evidence-based parenting intervention were to be used as a public health strategy to reduce the number of children with oppositional behaviour problems by 5%, it would require approximately 29 555 children to move from the clinical to the non-clinical range on a standardized measure of disruptive behaviour such as the Eyberg Child Behaviour Checklist (Eyberg & Pincus 1999).

The human resources needed to achieve this level of outcome can also be estimated from trial data. Studies evaluating the impact of Triple P as a universal preventive intervention delivered in groups of 12 parents over an 8-week period (e.g. Sanders *et al.* 2005; Zubrick *et al.* 2005) showed that approximately 50% of parents participating in Triple P groups have children in the clinically elevated range for oppositional behaviour. To achieve a 5% reduction in clinically elevated oppositional defiant behaviour at a population level, approximately 2462 parenting groups would need to be run across the state involving 12 parents per group (assuming only one parent per family participates). To achieve this level, approximately 615 practitioners would be required to deliver four groups over a 12-month period. Clearly, there is a need to significantly increase parental participation in parenting programmes if improvement at an individual level is to translate in public health benefit.

A second aim was to determine the extent to which children were exposed to various potentially modifiable risk and protective factors in the family. Turning to the findings relating to parenting strategies, it was interesting to note that the majority of parents reported providing praise and encouragement when their children behaved appropriately. This active teaching of socially acceptable behaviour is viewed as one of the most important ways in which parents can socialize children to learn the skills and competencies they require to get on well with others and to succeed in life (Hart & Risley 1995). Fortunately, many parents appear to need little persuasion to encourage desirable behaviour in their children by being positive. However, no correlation was found between the use of these positive strategies and whether a child was reported to have an emotional or behavioural problem. This result is not surprising given that there was so little variability in parents' reported use

of positive strategies for good behaviour, indicating a possible ceiling effect in the measure perhaps contributed to by a social desirability response set.

Dealing with misbehaviour is a different story. The two most commonly reported strategies for dealing with misbehaviour were telling the child to stop their behaviour, and removing the child from a troublesome situation by sending them to timeout. Both of these strategies, namely using clear, firm instructions that are backed up with a consequence such as timeout, are effective methods for managing oppositional behaviours (e.g. Patterson 1982; Webster-Stratton 1998; Sanders 1999) and their judicious use is recommended in most evidence-based parenting programmes (Patterson 1982; Sanders 1999; Webster-Stratton 1998). However, withholding parental attention through ignoring misbehaviour, another method which has been shown to be effective with some minor misbehaviour appears not to be as popular with parents. This may be due to the temporary escalation in protesting behaviour that commonly occurs when planned ignoring is first used but may lead parents to believe the approach does not work and therefore abandon it prematurely. Alternatively, parents may believe that if the child is misbehaving, ignoring is not appropriate and other forms of discipline are required. In either case, parents appear to favour more active ways of responding to misbehaviour. This finding suggests that strong rationales are needed to convince parents that planned ignoring can be effective.

Many parenting programmes aim to reduce parental reliance on corporal punishment in raising children. The present survey sought to assess *how likely* parents were to use spanking as an approach to managing child behaviour problems. The majority (71%) of parents reported spanking their children at least occasionally. When assessed in terms of likelihood of use, just under half of the respondents reported that they were likely or very likely to give their child a single smack with the hand; and just under 10% of parents reported that they were likely or very likely to spank the child more than once with the hand or with an object other than the hand (e.g. wooden spoon, belt).

The present survey confirmed when parents viewed their child's behaviour as being more severe, they are more likely to use more coercive disciplinary tactics. Unfortunately, when parents escalate with negativity of their own to counter children's misbehaviour, children with more serious conduct problems are less likely to cooperate (Patterson 1982). Although a single spank with the hand was used in all socio-economic and educational levels, parents with lower levels of education were more likely to use it. This finding is consistent with US data showing an inverse relationship between socio-economic status and use of corporal punishment (Straus & Stewart 1999).

High levels of parental depression and stress are risk factors for the development of behavioural and emotional problems in children and are predictors of coercive parenting (Bor & Sanders 2004). Of the parents interviewed in this survey, about 20% reported some kind of personal adjustment problem, with approximately one in five parents reporting marked problems with stress, and about one in 20 reporting being very or extremely depressed over the preceding 2 weeks. Parents who reported they were very or extremely depressed or stressed were also more likely to report lower confidence in parenting and that their child was more difficult to manage. While parental distress can contribute to a child developing more serious behaviour difficulties, parental distress can also be a consequence of living with a child with difficult behaviour.

The third aim of the study was to establish the prevalence of modifiable protective factors. Given the theoretical importance of parental self-efficacy in improving parenting practices highlighted in most parenting models including Triple P (see Sanders 1999), it is encouraging to note that in an overall sense the majority of parents were confident in their role as a parent and viewed parenting as a positive experience (i.e. rewarding and fulfilling). Parents of children with behaviour problems typically report lower levels of self-efficacy in carrying out daily parenting tasks (Sanders & Woolley 2005), but low self-efficacy ratings often change with intervention (e.g. Sanders 1999). The main vehicle to improve the self-efficacy of parents experiencing problems with their children is to help them master simple practical strategies to improve their relationship with their child and change conduct problems.

Another protective factor that can be a target of intervention is appropriate help-seeking by parents. One-quarter of parents, who considered their child to have an emotional or behavioural problem in the previous 6 months, had consulted a professional, most commonly a family general practitioner, paediatrician, or teacher, about their child's behaviour. The majority of parents of children with behavioural or emotional problems do not receive professional help (Zubrick *et al.* 1995) and only a small minority consults with a mental health professional about their child's behaviour problems. This situation may change if more primary healthcare providers receive appropriate training in use of brief evidence-based parenting interventions (Sanders *et al.* 2003). Parents were more likely to have consulted a professional if their child was a boy. This gender difference may be due to the increased prevalence rate of behaviour difficulties in pre-adolescent boys.

Another type of help-seeking is for a parent to participate in a parenting programmes run by a professional. Only about one in four parents reported having participated in such

programmes, with parents experiencing behaviour difficulties with their children being more likely to have attended than other parents. Information on the type of parenting education programmes parents had attended was not collected in this study, so the percentage of parents who participated in an evidence-based programme (apart from Triple P) is unknown. However, as with other health education services, better educated parents were more likely to have participated than less well-educated parents. This finding highlights the importance of continuing efforts to increase the engagement of more disadvantaged parents in parenting programmes. It is particularly important that parents without partners and less well-educated parents engage in parenting programmes. Research has consistently shown that these parents report the occurrence of more coercive parenting practices and a higher prevalence of child behaviour difficulties than other parents. Importantly, clinical trial data show that low-income families also benefit greatly from parenting programmes if they complete them (e.g. Leung *et al.* 2003; Zubrick *et al.* 2005). Although only a minority of parents had completed a Triple P intervention, nearly half of all parents had heard of the programme. The most likely way parents had heard about the programme was through word-of-mouth from other parents or via school or pre-school newsletters. This finding highlights the importance of informal social networks in encouraging parents to participate in parenting programmes.

As relationship conflict has been shown to be an important predictor of behaviour problems in children (Cummings *et al.* 2001), it is encouraging to note that most parents with a partner consider their partner to be supportive of them in their parenting role. As relationship partners provide an important source of both practical and emotional support, high levels of partner support may decrease the likelihood that children are exposed to damaging inter-parental conflict (Emery 1989; Fincham 1998). Most parents also reported that they and their partner agreed on what methods of discipline to use with their children. This type of parental agreement means it is easier for parents to be consistent in their parenting practices as conflict over parenting issues is minimized.

Several limitations need to be kept in mind in interpreting the present findings. First, we had to rely on parental reports only. Although parents are in the best position to report on their own parenting experiences, and also on low base rate behaviours in the home that cannot be easily captured through independent observation, the absence of teacher or other informants reports is a limitation. Second, although most households with children have a telephone and we achieved a high participation rate once the household was determined

to be within scope for the survey, there was an under-representation of indigenous parents.

The present survey serves as a benchmark exercise against which population-level changes in the parenting experience can be gauged. Periodic surveys every 2 years would provide a useful evidence base for determining the reach and impact of parenting interventions. The present data have provided a basis for establishing specific goals and targets for participation in parenting programmes and for tracking outcomes over time.

## References

- American Psychiatric Association (APA) (1994) *Diagnostic and Statistical Manual of Mental Disorders*, 4th Edn. American Psychiatric Association, Washington, DC.
- Australian Bureau of Statistics (2003) *Population Projections, Australia*. ABS, Canberra, Australia (Catalogue No. 3222.0).
- Bandura, A. (1977) *Social Learning Theory*. Prentice Hall, Oxford, UK.
- Bandura, A. (1995) *Self Efficacy in Changing Societies*. Cambridge University Press, New York, NY, USA.
- Bor, W. & Sanders, M. R. (2004) Correlates of self-reported coercive parenting of preschool-aged children at high risk for the development of conduct problems. *Australian and New Zealand Journal of Psychiatry*, **38**, 738–745.
- Campbell, S. B. (1995) Behavior problems in preschool children: a review of recent research. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, **36**, 113–149.
- Cummings, E. M., Goeke-Morey, M. C. & Papp, L. M. (2001) Couple conflict, children, and families: it's not just you and me, babe. In: *Couples in Conflict* (eds A. Booth, A. Crouter & M. Clements), pp. 117–148. Lawrence Erlbaum, Mahwah, NJ, USA.
- Cunningham, C. E., Bremner, R. & Boyle, M. (1995) Large group community-based parenting programs for families of preschoolers at risk for disruptive behaviour disorders: utilization, cost effectiveness, and outcome. *Journal of Child Psychology and Psychiatry*, **36**, 1141–1159.
- Dadds, M. R., Schwartz, S. & Sanders, M. R. (1987) Marital discord and treatment outcome in behavioural treatment of conduct disorders. *Journal of Consulting and Clinical Psychology*, **55**, 396–403.
- Emery, R. E. (1989) Family violence. *American Psychologist*, **44**, 321–328.
- Eyberg, S. M. & Pincus, D. (1999) *Child Behaviour Inventory and Sutter-Eyberg Behaviour Inventory Revised Professional Manual*. Psychological Assessment Resources, Odessa, FL, USA.
- Fincham, F. D. (1998) Child development and marital relations. *Child Development*, **69**, 543–574.
- Hart, B. M. & Risley, T. R. (1995) *Meaningful Differences in the Everyday Experience of Young American Children*. Paul H. Brooks, Sydney, Australia.
- Heinrichs, N., Bertram, H., Kuschel, A. & Hahlweg, K. (2005) Parent recruitment and retention in a universal prevention program for

- child behavior and emotional problems: barriers to research and program participation. *Prevention Science*, 6, 275–286.
- Institute of Medicine (1994) *Reducing Risks for Mental Disorders*. National Academy Press, Washington, DC, USA.
- Kotler, J. S. & McMahon, R. J. (2004) Compliance and noncompliance in anxious, aggressive, and socially competent children: the impact of the child's game on child and maternal behavior. *Behavior Therapy*, 35, 495–512.
- Lazarus, R. S. & Folkman, S. (1984) *Stress, Appraisal, and Coping*. Springer, New York, NY, USA.
- Leung, C., Sanders, M. R., Leung, S., Mak, R. & Lau, J. (2003) An outcome evaluation of the implementation of the Triple P – Positive Parenting Program in Hong Kong. *Family Process*, 42, 95–108.
- McMahon, R. J. (1999) Parent training. In: *Handbook of Psychotherapies with Children and Families* (eds S. W. Russ & T. Ollendick), pp. 153–180. Kluwer Academic/Plenum Press, New York, NY, USA.
- Mrazek, P., Biglan, A. & Hawkins, J. D. (2004) *Community Monitoring Systems: Tracking and Improving the Well Being of America's Children and Adolescents*. Society for Prevention Research, Falls Church, VA, USA.
- Patterson, G. R. (1982) *Coercive Family Process*. Castalia, Eugene, OR, USA.
- Prinz, R. J. & Dumas, J. E. (2004) Prevention of oppositional-defiant disorder and conduct disorder in children and adolescents. In: *Handbook of Interventions That Work with Children and Adolescents: From Prevention to Treatment* (eds P. Barrett & T. H. Ollendick), pp. 475–488. Wiley, Chichester, UK.
- Prinz, R. J. & Jones, T. L. (2003) Family-based interventions. In: *Conduct and Oppositional Defiant Disorders: Epidemiology, Risk Factors, and Treatment* (ed. C. A. Essau), pp. 279–298. Lawrence Erlbaum Associates, Mahwah, NJ, USA.
- Sanders, M. R. (1999) Triple P – Positive Parenting Program: toward an empirically validated multilevel parenting and family support strategy for the prevention of behavior and emotional problems in children. *Clinical Child and Family Psychology Review*, 2, 71–90.
- Sanders, M. R. & McFarland, M. (2000) Treatment of depressed mothers with disruptive children: a controlled evaluation of cognitive behavioral family intervention. *Behavior Therapy*, 31, 89–112.
- Sanders, M. R. & Woolley, M. L. (2005) The relationship between global, domain and task-specific self-efficacy and parenting practices: implications for parent training. *Child: Care, Health and Development*, 31, 65–73.
- Sanders, M. R., Murphy-Brennan, M. & McAuliffe, C. (2003) The development, evaluation and dissemination of a training program for general practitioners in evidence-based parent consultation skills. *International Journal of Mental Health Promotion*, 5, 13–20.
- Sanders, M. R., Ralph, A., Thompson, R., Sofronoff, K., Gardiner, P., Bidwell, K. & Dwyer, S. (2005) *Every Family: A Public Health Approach to Promoting Children's Well Being: Technical Report*. The University of Queensland, Brisbane, Australia.
- Sawyer, M. G., Arney, F. M., Baghurst, P. A., Clark, J. J., Graetz, B. W., Kosky, R. J., Nurcombe, B., Patton, G. C., Prior, M. R., Raphael, B., Rey, J., Whaites, L. C. & Zubrick, S. R. (2000) *The Mental Health of Young People in Australia: Child and Adolescent Component of the National Survey of Mental Health and Well-Being*. Mental Health and Special Programs Branch, Commonwealth Department of Health and Aged Care, Canberra, Australia.
- Serketich, W. J. & Dumas, J. E. (1996) The effectiveness of behavioral parent training to modify antisocial behavior in children: a meta-analysis. *Behavior Therapy*, 27, 171–186.
- Spoth, R. & Redmond, C. (2000) Research on family engagement in preventive interventions: toward improved use of scientific findings in primary prevention practice. *Journal of Primary Prevention*, 21, 267–284.
- Straus, M. A. & Stewart, J. H. (1999) Corporal punishment by American parents: national data on prevalence, chronicity, severity, and duration, in relation to child and family characteristics. *Clinical Child and Family Psychology Review*, 2, 55–70.
- Taylor, T. K. & Biglan, A. (1998) Behavioural family interventions for improving child-rearing: a review of the literature for clinicians and policy-makers. *Clinical Child and Family Psychology Review*, 1, 41–60.
- Webster-Stratton, C. (1998) Parent training with low-income families: promoting parental engagement through a collaborative approach. In: *Handbook of Child Abuse Research and Treatment: Issues in Clinical Psychology* (ed. J. R. Lutzker), pp. 183–210. Plenum, New York, NY, USA.
- Zubrick, S. R., Silburn, S. R., Garton, A., Burton, P., Dalby, R., Carlton, J., Shephard, C. & Lawrence, D. (1995) *Western Australia Child Health Survey: Developing Health and Well-Being in the Nineties*. Australian Bureau of Statistics and the Institute for Child Health Research, Perth, Australia.
- Zubrick, S. R., Ward, K. A., Silburn, S. R., Lawrence, D., Williams, A. A., Blair, E., Robertson, D. & Sanders, M. (2005) Prevention of child behavior problems through universal implementation of a group behavioral family intervention. *Prevention Science*, 6, 287–304.

This document is a scanned copy of a printed document. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material.