doi:10.1111/j.1440-1754.2006.00804.x

ORIGINAL ARTICLE

# Mental health of children in foster and kinship care in New South Wales, Australia

Michael Tarren-Sweeney and Philip Hazell

Discipline of Psychiatry, School of Medical Practice and Population Health, University of Newcastle, Callaghan, New South Wales, Australia

**Objectives:** To report baseline mental health measures from the Children in Care study, a prospective epidemiological study of children in court-ordered foster and kinship care in New South Wales, Australia.

**Methods:** Mental health, socialization and self-esteem were assessed in 347 children in a statewide mail survey, using two carer-report checklists, the Child Behavior Checklist (CBCL) and the Assessment Checklist for Children (ACC).

**Results:** Children in the study had exceptionally poor mental health and socialization, both in absolute terms, and relative to normative and in-care samples. Levels and rates of disturbance for children in foster care exceeded all prior estimates. Rates of disturbance for children in kinship care were high, but within the range of prior estimates. Boys presented with higher scope and severity of mental health problems than girls on the CBCL, while gender-specific patterns of disturbance were shown on the ACC. A moderate age effect was accounted for by children's age at entry into care.

**Conclusions:** Children in care are at high risk of mental health problems. Psychological support for the children and their carers is an essential secondary prevention strategy. Implications for service delivery are discussed.

**Key words:** Child Behavior Checklist; developmental psychopathology; foster care; kinship care; psychiatric epidemiology.

Children residing in alternate (or 'out of home') care in Europe and North America manifest rates of psychiatric disturbance well in excess of that observed among children in general.[1–5] This is understandable, given their largely shared exposure to early maltreatment, emotional deprivation and disrupted attachments.[6] Australian children in care are exposed to similar adversity, and hence are likely to be similarly impaired. Yet, their mental health cannot be validly inferred from data collected elsewhere. This is because findings have been reported for quite diverse populations, whose experiences differ from that of Australian children. Prior study samples varied markedly in terms of age range, reasons for entry into care, exposure to maltreatment, type of care (i.e. kinship, foster and residential), age at entry into care, length of time in care, permanency planning (such as use of adoption), as well other developmentally significant factors.

There are also differences in alternate care practice and legislation among the Australian states, most particularly in terms of the distribution of types of care.[7] Relative to other states, the New South Wales (NSW) care system is characterized by high use of kinship care (i.e. care by relatives), and low use of residential care. Australian children in care are thus likely to have varied exposure to pre-care and in-care risk factors. To date, mental health data have been reported from one Australian study, namely a 3-year prospective study of 235 children entering care in South Australia,[8,9] while a separate survey of Adelaide children in foster care commenced recently (personal communication by Professor Michael Sawyer). Findings from these studies may not generalize to children in other states.

There were close to 9000 children in care in NSW in 2003, reflecting a 60% increase over the preceding 6 years.[7] Although temporary care arrangements and interim court orders account for most of the entries and departures from care in NSW, approximately 90% of NSW children in care at any given time have a court-determined care order.[7] Parental responsibility (guardianship and custody rights) for two-thirds of these children is retained by the Minister of the Department of Community Services (DOCS), and for most others (31%) by kinship carers. Although the majority of children in court-ordered care reside with relatives, most children under Departmental guardianship (formerly referred to as state wards) reside with foster parents.[10] Since the early 1990s, three major changes have occurred in the provision of non-temporary alternate care in NSW, namely an increased use of short-term orders, the rise of kinship care and a decline in the use of residential care.[10,11] These changes may have profoundly influenced the developmental pathways of children in care.

Population research with children in alternate care has focused on measurement of commonly-observed psychopathology,[1,2,12,13] using parent-report rating scales such as the Rutter scales,[14] and the Child Behavior Checklist (CBCL).[15] Because of their reliance on these standard survey instruments, researchers have failed to assess problems specifically manifested by children in care. Most important of these are attachment and peer relationship difficulties, anxiety and dissociative responses to trauma, sexual behaviour and self-injury.

The Children in Care Study (CICS) is an epidemiological study of the mental health of children in court-ordered foster and kinship care in NSW. It is being conducted with several purposes in

**Correspondence:** Michael Tarren-Sweeney, School of Education, University of Canterbury, Christchurch, New Zealand. email: michael.tarrensweeney@newcastle.edu.au

Accepted for publication 26 September 2005.

mind. First, the study seeks to obtain valid epidemiological estimates of the mental health of NSW children in court-ordered care. Second, it seeks to obtain more comprehensive estimates than that reported in prior population studies, including the measurement of problems not covered by standard survey instruments. Third, the study was designed to address questions pertaining to the development of siblings in care.[16] Finally, the study aims to examine retrospective and prospective relationships between a large number of risk and protective factors, and children's mental health, socialization and self-esteem. Development, pilot and baseline stages of the study are complete, while a follow-up survey is planned to commence in 2006. This paper reports a component of the study, namely baseline mental health estimates obtained between 2000 and 2003.

## Methods

### Sample

The sampling frame was defined as all 4- to 9-year-old children residing in foster or kinship care in NSW, Australia, under the guardianship of the Minister for DOCS, and for whom casework responsibility rested with DOCS. The age range was sufficiently contained to yield gender-specific aggregate estimates of mental health, but broad enough to allow for cross-sectional and prospective analyses of age effects and developmental course. The sampling frame was distinguished from children residing in temporary care without a court order, and from children with custody orders whose parents retained guardianship rights. The study was initially designed to include the latter group, which would have required the consent of their birth parents. This did not prove to be feasible, since birth parents could not be reliably located in the pilot study. The sampling frame excluded children in the care of fostering agencies, because it was not practical to enter into separate research agreements with each agency.

The study sought to enlist the carers of all eligible children, with one proviso: that their contact details could be confirmed through either the electoral roll or a telephone listing. The sampling frame, drawn in October 1999 and October 2001, consisted of 819 children. Contact details could not be confirmed for 198 children. Questionnaires were thus sent to the carers of 621 eligible children (the study sample), with 347 returns (56% response rate).

The study sample and non-contactable children had similar age and gender distributions. The representativeness of respondents was examined by comparing the characteristics of 184 participant and 50 non-participant children at a single point in time (January 2000). The groups did not differ in terms of the distribution of gender, age, regional location, ethnicity, care type (foster vs kinship care), or being previously restored to their birth parents. However, non-participant children entered care at a younger age, had less exposure to maltreatment, and were more likely to have spent the larger part of their life with their current carers. This bias resulted in a slight overestimation of psychopathology in the study population.

### Measures

The mental health and socialization of index children were estimated using two carer-report checklists. The checklists were incorporated in a mail-out survey questionnaire, which also contained a consent form, and questions measuring a range of study factors.

The CBCL[15,17] was selected as the principal outcome measure because it is valid and reliable,[18] because of the availability of a large amount of comparative data for high-risk populations,[1,2] and because there are Australian norms.[19,20] The reliability of foster parent reports of children's problems remains somewhat uncertain, although there is evidence that in respect of children in *long-term* care, foster parents are at least as reliable as parents.[21] The CBCL includes empirically derived clinical subscales, and DSM-oriented scales that were constructed deductively. The CBCL also has two scales representing higher-order factors that approximate a spectrum of depressive/anxious symptoms (*internalizing*) and disruptive behavioural symptoms (*externalizing*). Although the *social*, *attention* and *thought* problem factors did not constitute a separate higher-order factor in the development of the CBCL, they diverge from the internalizing and externalizing factors,[22] and have particular relevance for this population. Hence, a nominal SAT (Social–Attention–Thought problems) scale was included in the study analysis. Scale scores were calculated for both the 1991 and 2001 versions of the CBCL. Since the present study used the 1991 checklist, scores for three of the 2001 subscales and three of the DSM-oriented scales were estimated using a prorating procedure (as advised in personal correspondence with the instrument's developer).

The Assessment Checklist for Children (ACC) was developed in the present study to measure a range of problems not adequately covered by standard survey instruments. The ACC is a 120-item carer-report psychiatric rating scale, measuring behaviours, emotional states, traits, and manners of relating to others, as manifested by children in care.[23] It contains 18 'self-esteem' items and 102 'clinical' items, with the latter contributing to 10 empirically-derived clinical scales, namely: (i) Sexual behaviour; (ii) Pseudomature interpersonal behaviour; (iii) Non-reciprocal interpersonal behaviour; (iv) Indiscriminate interpersonal behaviour; (v) Insecure interpersonal behaviour; (vi) Anxious–Distrustful; (vii) Abnormal pain response; (viii) Food maintenance; (ix) Self-injury; and (x) Suicide discourse. Total scores above 26 (excluding self-esteem items) constitute a clinical range that is highly predictive of psychiatric impairment, while scores in the range of 21–26 constitute a borderline clinical range, which is moderately predictive of impairment. These cut-points were identified from receiver operating characteristics (ROC) analyses of relationships between baseline survey ACC total score distributions and various indicators of psychiatric impairment, namely: clinically significant CBCL total problems scores; reported psychiatric diagnosis; received counselling or psychotherapy in the previous year; presently prescribed psychotropic medication; and carer receiving professional advice on managing child's behaviour or emotions.

Initial data indicate that the ACC has adequate validity and internal reliability.[23] Its content was comprehensively derived using a combination of inductive and deductive strategies, including the development of a conceptual framework. The validity of the content was reviewed by experienced clinicians and foster parents. The construct validity of the ACC is supported by estimates of factorial and concurrent validity, obtained in the pilot and baseline surveys of the CICS. The ACC also showed criterion-related validity, in that: (i) scores are highly sensitive to children's exposure to risk; (ii) scores are strongly differentiated by children's *age at entry into care*; and (iii) the ACC differentiates between referred and non-referred children in care. Internal consistency was high, with Cronbach's alpha ranging from

0.70 to 0.96 for the clinical scales and total clinical score. Normative reference data will be obtained in further validation studies, commencing in 2006.

## Results

The gender of participants was evenly distributed (276 boys, 271 girls). Although the sampling frame was defined as children aged 4–9 years, delays between drawing up the sampling frame and completion of survey materials saw some children recruited at ages 10 and 11. However, most children (>60%) were 6–8 years old, with the mean age being 7.8 years. The proportions of children residing in Sydney, other metropolitan NSW (Wollongong, Central Coast, Newcastle), and regional NSW were 35.5, 16.5 and 48%, respectively. Ethnicity was not reliably measured and hence is not reported. Numbers of children residing in foster and kinship care were 297 (86%) and 50 (14%), respectively. Less than 6% ($n = 20$) of children entered care without known exposure to maltreatment, with 80% experiencing one or more forms of abuse, and 78% experiencing neglect. The median number of confirmed notifications of maltreatment for the sample was 3, the mean time between the first confirmed notification and entry into care was 1.7 years, and the mean age at entry into care was 3.5 years.

Scores on most CBCL and ACC scales were normally distributed and skewed to the right. However, scores on some smaller scales were not normally distributed scores, with the highest frequency score being zero. This is typical of narrow-band checklist scales that have a small number of possible values, even among normative populations. Similarly, the distributions of standardized *T*-scores for these scales were not normal, with the minimum *T*-score ($T = 50$) being the most common score. In spite of these violations, means and standard deviations were reported for all of the checklist scales for the following reasons: It is standard practice for reporting population checklist data; it is inconvenient to describe the various scale distributions using different statistics; and given the large sample size, the consequences of violating the assumptions of normality are trivial.[24]

### CBCL scores

Mean sample CBCL raw scores are compared in Table 1 with equivalent scores for normative and clinic-referred reference groups.[15,17,25,26] Broadband and subscale scores (1991 version) for boys ($n = 176$) and girls ($n = 171$) greatly exceeded those reported for an Australian normative sample,[26] with estimates ranging from 0.3 to 1.9 standard deviations above the community means. All differences were significant at $P < 0.001$. The scope and severity of problems reported for index children closely resembled that of clinic samples. Index children had particularly high *social problems, thought problems, attention problems, rule-breaking/delinquent behaviour, and aggressive behaviour*, with mean scores approaching those of US clinic-referred groups.[15,17] Children were also reported as having lower (i.e. worse) scores than the clinic-referred sample on all measures of social competence, with the exception of *school* scale scores.

Mean *T*-scores, stratified by *gender* and *type of care*, are compared in Table 2 with reference data from the 1991 US normative and clinic-referred samples,[17] and estimates reported from four US studies of children in foster care.[1,27–29] The present sample of foster children was reported as having similar internalizing problems to the comparison foster care samples, but higher SAT and externalizing problems. Their social competence *T*-scores were within the range of prior estimates. Boys in the present study were reported as having moderately poorer mental health than girls, as indicated by significantly higher CBCL gender-standardized *T*-scores on the following scales: *internalizing problems* (boys = 55.7, girls = 52.8, $P = 0.03$); *externalizing problems* (boys = 60.2, girls = 57.6, $P = 0.03$); *total problems* (boys = 62.3, girls = 58.9, $P = 0.01$); and *thought problems* (boys = 59.0, girls = 57.0, $P = 0.03$). These differences are substantial (in the range of 2–3 points on the *T*-score distribution). There is also evidence of a small age effect, with older children having higher total problem raw scores than younger children ($r^2 = 0.02$, $P = 0.01$).

### Rates of disorder

Fifty-three per cent of girls and 57% of boys had at least one CBCL scale score in the clinical range. Equivalent proportions of children with any score in the borderline plus clinical ranges were 65% (girls) and 74% (boys). Gender-stratified rates of disorder (defined as scores in the 1991 borderline plus clinical ranges) are compared with Australian normative rates in Table 3.[26] Children in care manifested significantly higher rates of disturbance than the community sample on every broadband and subscale, except for boys' somatic problems. These differences were also clinically meaningful, with relative risk exceeding 5 for both genders on each of the five SAT and externalizing subscales.

Sample rates of disorder, stratified by type of care, are compared in Table 4 with comparative data for children in foster care and kinship care.[1,2,5,27,28,30,31] This represents all previously published data for samples larger than 40 children.

### Characteristic and uncharacteristic problems

*Characteristic* problems were defined in the present study as CBCL items with a sample mean at least 20% higher than the mean for US clinic-referred children.[17] The number of characteristic problems identified for boys and girls were 26 and 20, respectively. Three clear categories of such problems were identified, namely elimination (toileting) problems, sexual problems, and conduct problems. By and large, boys and girls had the same characteristic problems. Conversely, several problems were less prominent in the present sample than among children at large. It is noted that perfectionist, shy and self-conscious behaviour is *uncharacteristic* of children in care.

### ACC scores

Mean ACC total clinical scores for boys and girls were 29.8 (SD = 22.4) and 29.9 (SD = 26.3). Older children had higher ACC total scores than younger children, although the effect size was fairly small ($r^2 = 0.03$, $P = 0.003$). Proportions of boys' and girls' ACC total scores in the clinical range were 46.6 and 42.7%, respectively, and in the borderline plus clinical ranges were 55.1 and 54.4%. Sample distributions of ACC clinical and low self-esteem scales are described in Table 5. Although no reference data have been obtained yet for the ACC, the present score distributions suggest the following: Approximately one-third of the sample was reported as manifesting at least some age-inappropriate sexual behaviour; index children have considerable problems with social behaviour, most notably in the form of

**Table 1** Mean CBCL raw scores (SD): Study and reference populations

| | Boys | | | | | Girls | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | CICS | (SD) | Norms† | *d*‡ | Clinic† | CICS | (SD) | Norms | *d* | Clinic |
| **1991 profile –** Ages 4–11 | | | *Australian norms* | | | | | *Australian norms* | | |
| Broadband scales | *n* = 176 | | *n* = 1551 | | *n* = 582 | *n* = 171 | | *n* = 1468 | | *n* = 619 |
| Internalising | 8.9 | (7.8) | 4.8 | 0.87 | 13.1 | 8.8 | (8.6) | 5.1 | 0.67 | 14.6 |
| Externalising | 18.8 | (11.1) | 8.1 | 1.51 | 20.9 | 14.8 | (11.4) | 6.6 | 1.34 | 17.5 |
| Total problems | 51.0 | (29.9) | 21.0 | 1.92 | 54.5 | 43.8 | (32.6) | 18.8 | 1.61 | 52.1 |
| Subscales | | | | | | | | | | |
| Withdrawn | 3.1 | (3.1) | 1.5 | 0.84 | 4.1 | 3.1 | (3.2) | 1.5 | 0.80 | 4.6 |
| Somatic | 1.4 | (1.9) | 1.0 | 0.31 | 1.7 | 1.8 | (2.9) | 1.2 | 0.38 | 2.3 |
| Anxious/depressed | 4.6 | (4.5) | 2.5 | 0.68 | 7.9 | 4.2 | (4.5) | 2.5 | 0.52 | 8.5 |
| Social problems | 4.3 | (3.2) | 1.6 | 1.42 | 4.7 | 3.9 | (3.2) | 1.4 | 1.47 | 4.9 |
| Thought problems | 1.7 | (2.0) | 0.4 | 1.44 | 1.9 | 1.3 | (2.1) | 0.3 | 1.00 | 1.8 |
| Attention problems | 7.9 | (4.9) | 3.0 | 1.75 | 8.2 | 6.4 | (4.8) | 2.1 | 1.72 | 7.3 |
| Delinquent behaviour | 4.0 | (3.0) | 1.6 | 1.41 | 4.3 | 3.1 | (2.7) | 1.1 | 1.43 | 3.3 |
| Aggressive behaviour | 14.7 | (8.6) | 6.6 | 1.40 | 16.6 | 11.8 | (9.2) | 5.4 | 1.23 | 14.2 |
| **2001 profile:** Ages 6–11 | | | *US norms* | | | | | *US norms* | | |
| Broadband scales | *n* = 146 | | *n* = 387 | | *n* = 400 | *n* = 151 | | *n* = 390 | | *n* = 400 |
| Internalising | 9.4 | (7.7) | 5.1 | 0.90 | 14.3 | 8.6 | (8.2) | 6.0 | 0.54 | 13.4 |
| Externalising | 19.7 | (13.5) | 6.6 | 2.18 | 23.8 | 14.9 | (12.7) | 6.1 | 1.57 | 19.8 |
| SAT§ | 18.9 | (12.1) | 8.0 | ≈1.36 | 23.2 | 15.8 | (12.3) | 7.5 | ≈1.11 | 19.0 |
| Subscales | | | | | | | | | | |
| Anxious/depressed | 4.8 | (4.3) | 2.8 | 0.74 | 7.4 | 3.9 | (4.1) | 3.2 | 0.24 | 6.8 |
| Withdrawn/depressed¶ | 2.5 | (2.7) | 1.1 | 0.88 | 4.1 | 2.3 | (2.7) | 1.4 | 0.53 | 3.9 |
| Somatic complaints | 2.1 | (2.3) | 1.1 | 0.59 | 2.9 | 2.4 | (3.1) | 1.3 | 0.65 | 2.8 |
| Social problems | 5.8 | (4.4) | 2.4 | 1.31 | 7.2 | 5.4 | (4.3) | 2.6 | 1.08 | 6.3 |
| Thought problems | 4.7 | (4.3) | 1.8 | 1.45 | 5.9 | 3.6 | (4.5) | 1.7 | 1.06 | 4.7 |
| Attention problems¶ | 8.6 | (5.3) | 3.8 | 1.41 | 10.1 | 6.7 | (5.0) | 3.2 | 1.13 | 8.0 |
| Rule-breaking behaviour¶ | 6.5 | (5.4) | 1.9 | 2.19 | 6.8 | 5.0 | (4.9) | 1.6 | 1.89 | 5.8 |
| Aggressive behaviour | 13.1 | (8.7) | 4.7 | 1.95 | 17.0 | 9.9 | (8.5) | 4.5 | 1.26 | 14.1 |
| DSM-oriented scales | | | | | | | | | | |
| Affective problems¶ | 3.3 | (3.5) | 1.4 | 1.00 | 5.7 | 2.9 | (3.5) | 1.4 | 0.79 | 5.1 |
| Anxiety problems | 2.8 | (2.5) | 1.4 | 0.93 | 3.8 | 2.5 | (2.4) | 1.7 | 0.50 | 3.6 |
| Somatic problems | 1.1 | (1.6) | 0.7 | 0.31 | 1.7 | 1.4 | (2.3) | 0.8 | 0.46 | 1.7 |
| ADH problems¶ | 7.6 | (4.2) | 3.7 | 1.34 | 8.4 | 5.4 | (4.3) | 3.0 | 0.89 | 6.9 |
| Oppositional/defiant | 5.2 | (3.2) | 2.4 | 1.40 | 6.3 | 4.2 | (3.1) | 2.2 | 1.05 | 5.3 |
| Conduct problems¶ | 8.4 | (7.1) | 1.9 | 2.60 | 9.6 | 5.3 | (6.0) | 1.4 | 2.05 | 7.6 |
| Social competence | | | | | | | | | | |
| Activities | 7.5 | (2.9) | 11.1 | −1.80 | 8.6 | 7.7 | (2.6) | 11.1 | −1.54 | 8.4 |
| Social | 4.7 | (2.4) | 8.5 | −1.52 | 5.1 | 5.0 | (2.2) | 8.6 | −1.38 | 5.5 |
| School | 4.4 | (1.2) | 5.0 | −0.67 | 3.2 | 4.2 | (1.2) | 5.1 | −1.00 | 3.8 |
| Total competence | 16.3 | (4.9) | 24.6 | −2.08 | 17.7 | 17.0 | (4.9) | 24.9 | −1.88 | 18.0 |

†Reference populations: (i) for 1991 profile scores, ages 4–11, Australian normative sample[25,26] and 1991 US clinic-referred sample;[17] and (ii) for 2001 profile scores, ages 6–11, 2001 US normative and clinic-referred samples;[15] ‡Standardised mean score difference, namely the difference in mean scores expressed as a proportion of the score standard deviation for the US normative sample (Australian data were published without standard deviations); §Social–Attention–Thought problems nominal scale; ¶Prorated score. CBCL, Child Behavior Checklist; CICS, Children in Care Study; SD, standard deviation.

non-reciprocal and indiscriminate interpersonal behaviour; most children have behaviours that are suggestive of insecure relationships (*insecure* scale); sizeable minorities of children are reported to manifest self-injury, abnormal responses to pain, and food maintenance behaviours; and very few children engage in suicidal talk or behaviour.

Girls were reported with more age-inappropriate sexual behaviour (boys mean = 0.9, girls mean = 1.6, $P = 0.01$) and pseudomature interpersonal behaviour (boys mean = 2.8, girls mean = 3.8, $P = 0.008$) than boys, whereas boys were reported with higher non-reciprocal interpersonal behaviour (boys mean = 5.2, girls mean = 3.8, $P = 0.005$), and more abnormal responses to pain (boys mean = 1.4, girls mean = 0.9, $P = 0.01$).

## Discussion

Children in the present study were reported as having exceptionally poor mental health and social competence, relative to normative and

**Table 2** Mean CBCL *T*-scores (SD) – 1991 profile: Study and reference populations

| | CICS | (SD) | Reference populations | | Foster versus kinship care | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Normative† | Prior estimates‡ | Foster | Kinship | *d*§ | *P*-value |
| Broadband scales | $n = 347$ | | $n = 1201$ | $n = 140–415$ | $n = 297$ | $n = 50$ | | |
| Internalising | 54.3 | (12.1) | 50.2 | 51.6–54.9 | 54.8 | 51.7 | 0.25 | |
| Externalising | 58.9 | (12.9) | 50.0 | 55.5–57.2 | 60.0 | 55.0 | 0.36 | * |
| Total problems | 60.6 | (13.4) | 50.1 | 54.5–58.0 | 61.4 | 56.2 | 0.39 | ** |
| Sub-scales | | | | | | | | |
| Withdrawn | 57.6 | (9.0) | 54.0 | 56.9–58.1 | 58.1 | 55.0 | 0.34 | * |
| Somatic | 56.5 | (8.1) | 53.9 | 55.0–56.5 | 56.6 | 55.7 | 0.11 | |
| Anxious/depressed | 56.3 | (8.3) | 54.0 | 56.1–56.8 | 56.5 | 55.5 | 0.12 | |
| Social problems | 61.5 | (10.8) | 54.0 | 58.1–59.4 | 62.0 | 58.5 | 0.32 | * |
| Thought problems | 58.0 | (9.5) | 53.3 | 57.1–58.9 | 58.6 | 54.6 | 0.42 | ** |
| Attention problems | 63.8 | (11.5) | 54.1 | 59.1–61.6 | 64.4 | 60.2 | 0.37 | * |
| Delinquent behaviour | 61.1 | (9.2) | 53.8 | 59.0–59.6 | 61.7 | 57.9 | 0.41 | ** |
| Aggressive behaviour | 61.1 | (11.4) | 54.0 | 58.0–59.1 | 61.6 | 58.1 | 0.31 | * |
| Social competence | $n = 296$ | | $n \approx 900$ | $n = 104–340$ | $n = 251$ | $n = 46$ | | |
| Activities | 43.3 | (8.8) | 47.9 | 41.1–47.8 | 42.9 | 45.3 | −0.27 | |
| Social | 40.1 | (9.4) | 48.1 | 37.8–41.8 | 39.7 | 42.7 | −0.32 | |
| School | 39.9 | (9.0) | 48.4 | 37.7–40.5 | 39.1 | 43.8 | −0.52 | ** |
| Total competence | 39.5 | (10.3) | 50.3 | 35.8–42.5 | 38.8 | 43.2 | −0.43 | ** |

*$P \leq 0.05$; **$P \leq 0.01$. †1991 US normative sample, not gender stratified;[17] ‡Range of prior estimates reported for population samples of children in foster care;[1,27–29] §Standardized mean score difference (Cohen's *d*), namely the difference in mean scores expressed as a proportion of the score standard deviation for the aggregate sample. CBCL, Child Behavior Checklist; CICS, Children in Care Study; SD, standard deviation.

in-care samples. They resemble clinic-referred children in terms of the scope and severity of their problems. This is not surprising, given the sample's very high exposure to social and biological adversity. The mental health profiles reported for the present sample of children in foster care were exceptional for a non-clinical population. They represent the highest CBCL scores yet reported for children in foster care. The only non-clinical populations of children likely to have poorer relationship and behavioural functioning than the present sample are children residing in institutions, and late-adopted children raised from infancy in institutions. Rates of disturbance for children in kinship care were high, though unexceptional, and were within the range of estimates previously reported for this group.

**Table 3** Rates (%) of CBCL disorders† in the study sample versus Australian community sample

| | Boys | | | Girls | | |
|---|---|---|---|---|---|---|
| | CICS ($n = 176$) | Australian‡ ($n = 1551$) | Relative risk§ (95% CI) | CICS ($n = 171$) | Australian ($n = 1468$) | Relative risk (95% CI) |
| Broadband scales | | | | | | |
| Internalising | 34.1 | 15.0 | 2.3 (1.8–2.9) | 26.3 | 11.3 | 2.3 (1.7–3.1) |
| Externalising | 55.7 | 13.6 | 4.1 (3.4–4.9) | 44.4 | 12.2 | 3.6 (2.9–4.5) |
| Total problems | 59.7 | 15.0 | 4.0 (3.3–4.7) | 52.6 | 14.4 | 3.7 (3.0–4.4) |
| Subscales | | | | | | |
| Withdrawn | 21.0 | 5.4 | 4.2 (3.0–6.0) | 15.8 | 2.9 | 5.4 (3.4–8.5) |
| Somatic | 9.7 | 7.2 | 1.4 (0.8–2.2) | 14.0 | 5.6 | 2.5 (1.6–3.9) |
| Anxious/depressed | 13.1 | 4.1 | 3.2 (2.0–5.0) | 10.5 | 2.9 | 3.6 (2.1–6.1) |
| Social problems | 34.1 | 6.5 | 5.3 (4.0–7.0) | 28.1 | 3.9 | 7.2 (5.0–10.2) |
| Thought problems | 28.4 | 3.2 | 8.9 (6.1–12.9) | 18.7 | 2.7 | 6.9 (4.4–10.7) |
| Attention problems | 44.3 | 7.4 | 6.0.(4.7–7.7) | 39.2 | 6.2 | 6.3 (4.8–8.3) |
| Delinquent behaviour | 39.8 | 7.4 | 5.4 (4.2–7.0) | 39.2 | 7.8 | 5.0 (3.9–6.5) |
| Aggressive behaviour | 35.2 | 5.9 | 6.0 (4.5–8.0) | 29.8 | 5.2 | 5.7 (4.2–7.9) |

†Where caseness is defined by CBCL scores in the 1991 'borderline + clinical' range (namely $T > 59$ for broadband scales, and $T > 66$ for subscales); ‡Australian community sample, ages 4–12;[25,26] §Relative risk calculated for rates of disorder in aggregate CICS sample (boys $n = 176$; girls $n = 171$) versus rates in Australian community sample. CBCL, Child Behavior Checklist; CI, confidence interval; CICS, Children in Care Study.

**Table 4** Comparison of present and prior estimates of CBCL disorders for children in foster and kinship care

| | Clinical range (%)† | | | | Borderline plus clinical range (%)† | | | |
|---|---|---|---|---|---|---|---|---|
| | Foster care | | Kinship care | | Foster care | | Kinship care | |
| | CICS‡ ($n = 298$) | Prior estimates§ ($n = 105–372$) | CICS ($n = 49$) | Prior estimates ($n = 67–297$) | CICS ($n = 298$) | Prior estimates $n = 105–372$ | CICS ($n = 49$) | Prior estimates ($n = 67–297$) |
| Broadband scales | | | | | | | | |
| Internalising | 22 | 13–26 | 16 | 12–20 | 31 | 23–40 | 24 | 20–37 |
| Externalising | 43 | 20–37 | 30 | 16–28 | 52 | 31–50 | 40 | 25–46 |
| Total problems | 51 | 22–41 | 32 | 16–41 | 57 | 33–51 | 52 | 26–47 |
| Subscales | | | | | | | | |
| Withdrawn | 10 | 6–10 | | | 20 | 14–20 | | |
| Somatic | 6 | 3–5 | | | 12 | 7–12 | | |
| Anxious/depressed | 8 | 6–9 | | | 13 | 10–16 | | |
| Social problems | 22 | 9–11 | | | 33 | 19–31 | | |
| Thought problems | 11 | 5–14 | | | 26 | 15–26 | | |
| Attention problems | 27 | 10–16 | | | 44 | 22–41 | | |
| Delinquent behaviour | 20 | 13–20 | | | 41 | 25–33 | | |
| Aggressive behaviour | 23 | 11–21 | | | 35 | 20–29 | | |

†Where caseness is defined by CBCL scores in the 1991 *clinical* range (namely $T > 63$ for broadband scales, and $T > 70$ for subscales) or the *borderline + clinical* range (namely $T > 59$ for broadband scales, and $T > 66$ for subscales); ‡CICS, Children in Care Study (i.e. present study sample); §Range of prior estimates reported for population samples of children in foster care[1,2,27,28,30,31] and kinship care.[2,5,28,31] CBCL, Child Behavior Checklist.

**Table 5** ACC scale score distributions ($n = 347$)

| ACC scales (maximum score) | | Mean | (SD) | Proportion (%) of scores in range | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | *Score range* | | | | | | |
| High prevalence scales | | | | 0 | 1–2 | 3–4 | 5–6 | 7–8 | 9–12 | 13+ |
| Pseudomature (16) | Boys | 2.8 | (2.9) | 24 | 33 | 19 | 13 | 5 | 5 | 1 |
| | Girls | 3.8 | (4.1) | 25 | 27 | 15 | 11 | 6 | 10 | 6 |
| Non-reciprocal (24) | Boys | 5.2 | (5.0) | 19 | 22 | 14 | 12 | 9 | 12 | 12 |
| | Girls | 3.8 | (4.2) | 24 | 29 | 14 | 12 | 6 | 12 | 3 |
| Indiscriminate (16) | Boys | 6.4 | (3.8) | 6 | 12 | 18 | 16 | 18 | 15 | 5 |
| | Girls | 6.4 | (4.5) | 6 | 19 | 18 | 15 | 9 | 20 | 13 |
| Insecure (28) | Boys | 4.9 | (4.9) | 19 | 19 | 18 | 17 | 8 | 12 | 7 |
| | Girls | 5.4 | (5.4) | 15 | 24 | 14 | 17 | 9 | 9 | 12 |
| Anxious/distrustful (20) | Boys | 2.1 | (2.8) | 37 | 32 | 15 | 9 | 3 | 1 | 2 |
| | Girls | 2.6 | (3.3) | 32 | 33 | 15 | 8 | 4 | 6 | 2 |
| Low prevalence scales | | | | 0 | 1–2 | 3–4 | 5–6 | 7+ | | |
| Sexual behaviour (22) | Boys | 0.9 | (2.1) | 70 | 18 | 5 | 3 | 4 | | |
| | Girls | 1.6 | (3.2) | 63 | 16 | 9 | 4 | 8 | | |
| Abnormal pain response (10) | Boys | 1.4 | (2.0) | 49 | 29 | 13 | 5 | 4 | | |
| | Girls | 0.9 | (1.7) | 63 | 25 | 5 | 4 | 3 | | |
| Food maintenance (8) | Boys | 1.2 | (1.9) | 58 | 24 | 9 | 6 | 3 | | |
| | Girls | 1.1 | (2.0) | 64 | 20 | 6 | 5 | 5 | | |
| Self-injury (28) | Boys | 1.4 | (2.6) | 57 | 25 | 10 | 4 | 4 | | |
| | Girls | 1.2 | (3.0) | 67 | 19 | 6 | 3 | 5 | | |
| Suicide discourse (14) | Boys | 0.3 | (1.1) | 88 | 6 | 4 | 1 | 1 | | |
| | Girls | 0.2 | (1.1) | 92 | 6 | 1 | 0 | 1 | | |
| Low self-esteem scales | | | | 0 | 1–2 | 3–4 | 5–6 | 7–8 | 9–12 | 13+ |
| Negative self-image (18) | Boys | 2.5 | (3.7) | 41 | 31 | 9 | 5 | 4 | 7 | 3 |
| | Girls | 2.2 | (3.3) | 46 | 24 | 12 | 7 | 5 | 4 | 2 |
| Low confidence (16) | Boys | 4.6 | (3.7) | 14 | 19 | 20 | 20 | 12 | 12 | 3 |
| | Girls | 3.8 | (3.8) | 23 | 27 | 13 | 14 | 9 | 12 | 2 |

ACC, Assessment Checklist for Children; SD, standard deviation.

A number of factors that differentiate the present sample from other populations of children in foster care may partially account for their relatively high levels of disturbance. The first point to consider is the level of adversity (particularly emotional deprivation and maltreatment) experienced by the children before entering care. Unfortunately, there is a dearth of information on the reasons that other study populations entered care. However, it is clear that the present sample experienced very high adversity before entering care. A second point to consider is sample bias. Mental health problems were slightly overestimated due to the underrepresentation of children placed at an early age in stable, long-term, 'adoptive-type' placements. Yet in the USA, where the comparison estimates were reported, permanency planning often leads to such children being adopted by their foster parents (and thus exiting care). One implication of this is that research conducted with children in NSW is less susceptible to the 'survival bias' evident in previous epidemiological studies. Conversely, however, a lack of permanency planning in NSW is likely to contribute to insecurity in children's relationships with their carers, and *vice versa*, with negative consequences for their mental health. The relatively common use of short-term orders for young children in NSW may also contribute to relationship insecurity.

The most important factor accounting for historically high numbers of disturbed children in foster care is the low use of residential care in NSW. Elsewhere, residential care is largely reserved for children with conduct and attachment disturbances, who are deemed too challenging for foster care. This was certainly the case in NSW, before the closure of the state's large residential facilities in the early 1990s. Presently, children with severe disruptive behaviour and attachment disorders who were previously thought to be *non-fosterable*, are largely in high-support foster placements. A major expansion in the use of kinship care in NSW has also skewed the behavioural profile of children in foster care. The proportion of children residing with relatives in NSW (>50%) is much higher than in other Australian states.[7,11] It is speculated that children who are less challenging and less impaired have a greater chance of gaining a kinship placement. By implication, fewer well-adjusted children may be entering foster care than in previous decades.

## Gender differences

What might account for the finding that boys had higher CBCL *T*-scores than girls? First, the sample appears to be equally representative of boys and girls in care in NSW (i.e. no gender-specific recruitment bias). Second, there is no evidence that the gender effect is due to confounding. With the exception of speech problems, no developmental or pre-care study factors were associated with gender. Boys and girls also had similar exposure to in-care risk factors such as placement changes and recent adverse events. We can conclude then, that boys in the present study manifested greater deviation from normative behaviour than girls, despite having similar exposure to developmental adversity. How does this compare with prior findings? Boys have presented with more problems than girls in studies of children in foster care,[30] residential care[32] and kinship care.[5] In another study, however, adolescent females in both residential and foster care had higher CBCL scores than equivalent males,[33] while two other studies reported no evidence of gender differences.[2,34]

Although boys' and girls' CBCL scores differed in magnitude, they manifested remarkably similar *patterns* of CBCL problem behaviour. This suggests that boys and girls develop similar complex psychopathology in response to exposure to multiple biological and social risk factors. Conversely, although boys and girls had similar total ACC scores, they presented with different patterns of disturbance in interpersonal behaviour. The data suggest that, given similar early adverse experiences, boys are more likely to develop emotionally withdrawn, inhibited attachment responses, as well as dissociative responses to pain, while girls are more likely to develop precocious, controlling, pseudomature attachment behaviour, and age-inappropriate sexual behaviour. Differences in sexual behaviour were not wholly accounted for by girls' higher exposure to sexual abuse. Rather, gender was an independent predictor after accounting for all other associated variables. It is possible that the sexual behaviour of 'at risk' girls is also linked to acculturation and attachment development in the face of severe deprivation and abuse.

## Age effect is illusory

Several studies have reported that older age is associated with poorer mental health among children in care, as indicated by differences in age-standardized CBCL scores.[1,2,5] This is partially supported in the present study, with findings of small age effects on global mental health estimates. However, older age failed to independently predict global mental health scores. Further analyses showed that the age effect was confounded by *age at entry into care*, since older children entered care at older ages. This provides the strongest evidence to date that the poorer mental health of older children in care is largely an artefact of later-placed children entering care with high levels of pre-existing disturbance. Exceptions to this were that older age independently predicted sexual behaviour, and younger age predicted inattention/hyperactivity.

## Foster versus kinship care

Differences in the mental health of children in foster versus kinship care appear to be clinically meaningful. Despite the small size of the kinship sample, there were also statistically significant *T*-score differences on all CBCL scales, except the somatic, anxious–depressed and internalizing scales. What then might account for the differences between these groups? The most obvious developmental contrast was the nature of their present placements. Growing up within one's extended biological family appears to be a protective experience, possibly for reasons to do with identity formation and familial bonding. Predictive modelling provides partial support for this hypothesis. Kinship care protected children from developing attachment problems ($P = 0.05$) and externalizing problems ($P = 0.06$), independent of their exposure to other pre-care and in-care risk factors.

## Implications for mental health service delivery

A reason for conducting epidemiological research is to estimate the need for assessment, preventative and treatment services. The scale and diversity of problems manifested by children in care in NSW are great. Although the present study is not directly concerned with mental health service use or with treatment effectiveness for children in care, its findings may be referred to in future calculations of service needs. However, there are unlikely to be simple links between the mental health status and treatment needs of these vulnerable children. First, children entering care share a number of uncommon events and experiences, which threaten their well-being and their

capacity to form and sustain meaningful relationships. It is appropriate then, that clinicians with relevant knowledge and skills (such as an understanding of infant attachment development) assist children and their carers using interventions designed to prevent the development of psychopathology. Second, clinical services such as psychotherapy are not necessarily provided in response to behavioural symptoms or level of impairment. Caregivers and case workers may seek a referral for a child, based on the perceived consequences of harm, or the child's subjective distress, or in response to a policy or agreed procedure. For example, there are specific clinical and counselling interventions designed for children exposed to sexual abuse, regardless of their psychological functioning. Similarly, not all counselling is designed to improve mental health. Children may benefit from counselling designed to strengthen their identity; they may wish to make better sense of their background; or they may seek advice about relationships, their education or how to make better friendships. Third, the most critical issue to flag in this discussion is the effectiveness of clinical interventions for these children. This is a poorly researched topic, and one that clinicians disagree about. Aside from some studies of 'treatment foster care', there are limited and inconclusive findings on the effectiveness of psychological and pharmacological treatments for this population.[35] Findings from treatment studies of children in the general community may not generalize to children in care, because their problems are different. For example, hyperactivity that is characteristic of children exposed to severe early deprivation may have different underlying mechanisms to the hyperactivity manifested by non-deprived children.[36]

Although the psychopathology of children in care is complex and poorly understood, its core features include disturbances in attachment behaviour. For many of these children, disturbances in self-concept and relationship capacity are intertwined with their experience of anxiety and depression, and with their defiant and aggressive behaviour. Yet treatment modalities are typically based around the construct of discrete disorders, rather than a complex biopsychological phenomenon. Hence, we see children in care in NSW referred to multiple clinical services, leading to multiple (and in some cases conflicting) diagnoses, and being offered treatments that address discrete sets of symptoms.

In regards to children who are removed from their parents' care, surrogate parenting by sensitive foster or kinship carers provides a second chance for a child to develop a coherent sense of self, and the capacity to love, particularly if this occurs in early childhood. To this end, clinicians working in this field have traditionally focused on supporting the children's carers, hoping to increase the viability of placements, and to strengthen carers' relationships with vulnerable and disturbed children. This is no easy task. Foster parents and relatives require a lot of assistance to bond unconditionally to a child who is detached, avoidant or indiscriminately affectionate.[37]

### Limitations

A weakness of the study was that the sample was somewhat unrepresentative of children in long-term care in NSW. Children residing in agency-supervised care, as well as those on custody orders, were excluded from the study. Other children residing in stable, 'adoptive-like' placements since infancy were underrepresented. In responding to the latter limitation, it should be noted that a strength of the study was its ability to characterize non-responders, and to calculate the likely effects of responder bias.

The study was also handicapped by the relatively small size of the kinship care sample. The high number of placements experienced by this group suggests it is dissimilar to kinship populations elsewhere in the world. This group is also unrepresentative of the larger population of children in kinship care in NSW, because it excludes those residing in kinship placements with custody orders.

## Conclusions

The present findings represent the most comprehensive mental health survey estimates yet reported for children in alternate care. Children in care in NSW present with exceptionally poor mental health, with more than half of boys and girls reported as having clinically significant psychiatric disturbances. The poorer mental health of older children in care is largely explained by older age at entry into care. Children manifest complex psychopathology, characterized by attachment difficulties, relationship insecurity, sexual behaviour, trauma-related anxiety, conduct problems and defiance, and inattention/hyperactivity, as well as uncommon problems such as self-injury and food maintenance behaviours. It is important that clinicians consider these problems in their entirety, rather than as discrete disorders. Although the effectiveness of treatments of these problems among children in care is largely unknown, psychological support for the children and their carers is an essential secondary prevention strategy.

## Acknowledgement

The Children in Care Study was funded and supported by the NSW Department of Community Services.

## References

1 Armsden G, Pecora PJ, Payne VH, Szatkiewicz JP. Children placed in long-term foster care: An intake profile using the child behavior checklist/4-18. *J. Emot. Behav. Dis.* 2000; **8** (1): 49–64.
2 Heflinger CA, Simpkins CG, Combs-Orme T. Using the CBCL to determine the clinical status of children in state custody. *Child. Youth Serv. Rev.* 2000; **22** (1): 55–73.
3 EUROARC – European Association for Research into Residential Childcare. *Care to Listen: A Report of Residential Child Care in Four European Countries*. EUROARC, Submitted to the European Union at Brussels, 1998.
4 St Claire L, Osborne A. The ability and behaviour of children who have been 'in-care' or separated from their parents. *Early Child Dev. Care* 1987; **28**: 187–354.
5 Dubowitz H, Zuravin S, Starr RH *et al*. Behavior problems of children in kinship care. *J. Dev. Behav. Pediatr.* 1993; **14** (6): 386–93.
6 Rutter M. Children in substitute care: Some conceptual considerations and research implications. *Child. Youth Serv. Rev.* 2000; **22** (9–10): 685–703.
7 Australian Institute of Health and Welfare. *Child Protection Australia 2002–2003*. Canberra: AIHW (Child Welfare Series No. 34), 2004.
8 Barber JG, Delfabbro PH, Cooper LL. The predictors of unsuccessful transition to foster care. *J. Child Psychol. Psychiatry* 2001; **42** (6): 785–90.
9 Delfabbro PH, Barber JG, Cooper L. Children entering out-of-home care in South Australia: Baseline analyses for a 3-year longitudinal study. *Child. Youth Serv. Rev.* 2002; **24** (12): 917–32.
10 Association of Children's Welfare Agencies. *Children Out of Home, Analysis of Substitute Care Data, 1991/92 to 1995/96*. Sydney: ACWA – Association of Children's Welfare Agencies, 1997.

11 Spence N. Kinship care in Australia. *Child Abuse Rev.* 2004; **13**: 263–76.
12 Stein E, Rae-Grant N, Ackland S, Avison W. Psychiatric disorders of children "in care": Methodology and demographic correlates. *Can. J. Psychiatry* 1994; **39** (6): 341–47.
13 Mount J, Lister A, Bennun I. Identifying the Mental Health Needs of Looked after Young People. *Clin. Child Psychol. Psychiatry* 2004; **9**: 363–82.
14 Elander J, Rutter M. Use and development of the Rutter parents' and teachers' scales. *Int. J. Methods Psychiatr. Res.* 1996; **6** (2): 63–78.
15 Achenbach T, Rescorla L. *Manual for ASEBA School-age Forms and Profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, and Families, 2001.
16 Tarren-Sweeney M, Hazell P. The mental health and socialization of siblings in care. *Child. Youth Serv. Rev.* 2005; **27**: 821–43.
17 Achenbach T. *Manual for the Child Behavior Checklist / 4-18, and 1991 Profile*. Burlington, VT: University of Vermont, 1991.
18 Doll B. Test review of the Child Behavior Checklist. In: Impara J, Plake B, eds. *The Thirteenth Mental Measurements Yearbook*. Lincoln, NE: Buros Institute of Mental Measurements, 1998.
19 Sawyer MG, Kosky RJ, Graetz BW, Arney F, Zubrick SR, Baghurst P. The National Survey of Mental Health and Wellbeing: The child and adolescent component. *Aust. N. Z. J. Psychiatry* 2000; **34** (2): 214–20.
20 Hensley VR. Australian normative study of the Achenbach Child Behavior Checklist. *Aust. Psychol.* 1988; **23** (3): 371–82.
21 Tarren-Sweeney M, Hazell P, Carr V. Are foster parents reliable informants of children's behaviour problems? *Child. Care Health Dev.* 2004; **30** (2): 167–75.
22 Bor W, Najman JM, Andersen MJ, O'Callaghan M, Williams GM, Behrens BC. The relationship between low family income and psychological disturbance in young children: An Australian longitudinal study. *Aust. N. Z. J. Psychiatry* 1997; **31** (5): 664–75.
23 Tarren-Sweeney M, Hazell P. The development and factor structure of the Assessment Checklist for Children (ACC): A rating scale of psychiatric problems specific to children in foster care. In: Remschmidt H, Belfer M, eds. *16th World Congress of the International Association of Child and Adolescent Psychiatry and Allied Professions*. Berlin: Steinkopff Darmstadt, 2004.
24 Lumley T, Diehr P, Emerson S, Chen L. The importance of the normality assumption in large public health data sets. *Annu. Rev. Public Health* 2002; **23**: 151–69.
25 Sawyer MG, Arney F, Baghurst P *et al*. *Mental Health of Young People in Australia*. Canberra: Mental Health and Special Programs Branch, Commonwealth Department of Health and Aged Care, 2000.
26 Sawyer MG, Arney FM, Baghurst PA *et al*. The mental health of young people in Australia: Key findings from the Child and Adolescent Component of the National Survey of Mental Health and Well-Being. *Aust. N. Z. J. Psychiatry* 2001; **35** (6): 806–14.
27 Clausen JM, Landsverk J, Ganger W, Chadwick D, Litrownik A. Mental health problems of children in foster care. *J. Child Fam. Stud.* 1998; **7** (3): 283–96.
28 Keller TE, Wetherbee K, Le Prohn NS, Payne V, Sim K, Lamont ER. Competencies and problem behaviors of children in family foster care: Variations by kinship placement status and race. *Child. Youth Serv. Rev.* 2001; **23** (12): 915–40.
29 Newton RR, Litrownik AJ, Landsverk JA. Children and youth in foster care: Disentangling the relationship between problem behaviors and number of placements. *Child Abuse Negl.* 2000; **24** (10): 1363–74.
30 Hellinckx W, Grietens H. Prevalence of problem behaviour in foster children in Flanders. *Community Alternatives Int. J. Fam. Care* 1994; **6** (2): 27–46.
31 Landsverk J, Davis I, Ganger W, Newton R. Impact of child psychosocial functioning on reunification from out-of-home placement. *Child. Youth Serv. Rev.* 1996; **18** (4–5): 447–62.
32 Hukkanen R, Sourander A, Bergroth L, Piha J. Psychosocial factors and adequacy of services for children in children's homes. *Eur. Child Adolesc. Psychiatry* 1999a; **8**: 268–75.
33 Hornick J, Phillips D, Kerr N. Gender differences in behavioral problems of foster children: Implications for special foster care. *Community Alternatives Int. J. Fam. Care* 1989; **1** (1): 35–52.
34 McIntyre A, Keesler T. Psychological disorders among foster children. *J. Clin. Child Psychol.* 1986; **15** (4): 297–303.
35 Racusin R, Maerlender A, Sengupta A, Isquith P, Straus M. Psychosocial treatment of children in foster care: A review. *Community Ment. Health J.* 2005; **41** (2): 199–221.
36 Kreppner J, O'Connor TG, Rutter M, and the English and Romanian Adoptees Study Team. Can inattention/overactivity be an institutional deprivation syndrome? *J. Abnorm. Child Psychol.* 2001; **29** (6): 513–28.
37 Lieberman AF. The treatment of attachment disorder in infancy and early childhood: Reflections from clinical intervention with later-adopted foster care children. *Attach. Hum. Dev.* 2003; **5** (3): 279–82.