

# **Preliminary Evaluation of Structured Professional Judgment to Assess Removal in Child Protection Practice**

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*This study is a pilot validation of a newly devised evidence-based clinical instrument that assists professional judgment for decisions relating to child removal. The Child Protection Removal Assessment (ChiPRA) instrument adopts a structured professional judgement (SPJ) approach to decision-making and was developed from a literature review of studies identifying factors associated with severe child abuse. A study comparing the predictive validity of ChiPRA and an actuarial instrument was conducted using court file data from 298 child protection cases. A logistic function from all ChiPRA items,  $\chi^2(11) = 147.546$ ,  $p < 0.000$ , correctly classified 86.3% of cases (Area Under the Curve [AUC] = 0.799,  $p < 0.000$ , 95% confidence interval: 0.738–0.859). The abuse subscale of the actuarial instrument yielded a modest but significant AUC (0.595, 95% CI: 0.530–0.660). Results indicate an increased reliance upon dynamic factors by magistrates when determining child removal. SPJ instruments warrant further research including prospective studies measuring reliability and validity studies.*

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Child abuse presents as a significant threat to childhood development and wellbeing. Overwhelming research identifies that children living in an abusive household are at increased risk of adverse educational, emotional/behavioural, and health outcomes (Cleaver, Unell, & Aldgate, 2011; Scannapieco & Connell-Carrick, 2005). Accordingly, the decision to place a child in out-of-home care is a crucial one and impacts upon some 5.5 and 6.3 children per 1,000 at any one time in Australia, the United States, England, or Norway (Munro & Manful, 2010). The Australian experience suggests children are spending longer periods in foster care compared with previous years even though the overall numbers of children in foster care are relatively stable (Delfabbro, Fernandez, McCormick & Kettler, 2013).

Generally, child removal occurs when a child is exposed to unacceptable risk of future harm or where neither parent is willing or able to have the child remain at home (Childrens' Court of Victoria, 2012). Often, decisions to remove a child from the family home are made in the context of incomplete, unclear, or conflicting information. In these contexts, practitioners tend to adopt an intuitive approach that often lacks transparency and relies upon heuristics to make decisions (Gambrell, 2005; Munro, 2008). Maintaining transparent and consistent decision-making is paramount in the child protection context, particularly given the documented variations in levels of practitioner expertise and education as well as the high staff turnover rate (Department of Human Services, 2011a). Practitioners with lower levels of experience typically dominate the workforce, most often dealing directly with children and parents (Department of Human Services, 2011b; Gillingham, 2009b).

To assist with decision-making, child welfare practitioners use instruments to guide their assessments. Consensus instruments are implemented in a number of Australian states. In the state of Victoria, the Victorian Risk Framework was developed from legal and social work experience and theory to assess risk, determine severity of harm, child vulnerability, family strengths, and protective factors and the likelihood of further harm (Department of Human Services, 2012). Consensus instruments rely entirely upon professional judgment and are associated with inconsistent and inaccurate assessments in a number of behavioral and health settings (Grove & Meehl, 1996). These instruments are prone to biased decision-making (Munro, 2008) and consequently, their validity and reliability tends to be problematic (Baird & Wagner, 2000; Baird, Wagner, Healy, & Johnson, 1999).

Over the past decade, concerns raised by public child protection inquiries have resulted in the implementation of alternative approaches to assessing risk in a number of Australian states (Bath, 2007; Hetherington, 1999; Wood, 2008). Most recently, the Protecting Victoria's Vulnerable Children's Inquiry (Cummins, Scott, & Scales, 2012) reported low workforce retention, high caseloads, inadequate professional development and inconsistent risk thresholds. Despite this, decision-aids and risk assessment in Victoria's child protection system, were not meaningfully explored.

Actuarial instruments adopt “an equation, a formula, a graph or an actuarial table to arrive at a probability, or expected value, or some outcome” (Grove & Meehl, 1996, p. 294), which makes them easy to interpret. These instruments were introduced to standardize risk assessment processes and apply a more consistent and transparent approach to decision-making. Actuarial instruments tend to focus upon predicting a particular outcome as they contain only empirically derived items identified from large data sets. The validity of actuarial instruments is pre-established as only items with a statistical association with certain child abuse outcomes (such as substantiation or injury) are incorporated into the instrument. As items are sample dependent (Douglas & Reeves, 2010, p. 153), their weightings are determined from the data set used to identify them.

Over the previous 15 years, there is an increasing trend to implement actuarial instruments in Australia, with four of the eight states/territories partially or wholly implementing the Structured Decision Making (SDM<sup>TM</sup>) model (Johnson & Scharenbroch, 2012; Johnson, Wagner, & Wiebush, 2000; Wagner, 1997). Developed in the United States by the Children’s Research Centre (Johnson & Scharenbroch, 2012), the SDM<sup>TM</sup> comprises eight separate instruments. The centerpiece of the system is a widely validated actuarial instrument, the FRE-SDM<sup>TM</sup>. It assesses the relative likelihood that a family will harm a child in the future (Johnson & Scharenbroch, 2012). Compared with consensus instruments, studies have identified the superior validity and reliability associated with actuarial instruments (Baird & Wagner, 2000; Baird et al., 1999).

A recent study conducted in Queensland validated the FRE-SDM<sup>TM</sup> in a child protection sample. Although validation results were reasonably good for three outcomes: new investigations and assessments, substantiations of harm, and subsequent child removals (Johnson & Scharenbroch, 2012), findings indicated the modification of items to improve validity. Other research in Queensland however, identified a low acceptability of FRE-SDM<sup>TM</sup> by professionals using the instrument. Their criticisms included overestimating risk, disproportionate focus upon static/historical factors, a lack of cultural factors, and little flexibility accorded to the practitioner in the decision-making process (Gillingham, 2009, Gillingham & Humphreys, 2010). Although transparent and easy to administer, senior practitioners were concerned with the increased dependency upon actuarial instruments by less experienced staff and the potential for professional de-skilling (Gillingham, 2011).

A third approach, structured professional judgment (SPJ) aims to avoid existing weaknesses associated with actuarial instruments such as an over-reliance on static factors and the minimized role of professional discretion. The SPJ approach has been successfully applied to the fields of violence and suicide prevention practice for at least three decades (Borum, Lodewijks, Bartel, & Forth, 2010; Douglas, Ogloff, & Hart, 2003). Meta-analyses indicate

the predictive validity of HCR-20 and the SAVRY, instruments used to assess risk of violence, is moderate to large magnitude and comparable with that of actuarial instruments (for HCR-20 review, see Douglas & Reeves, 2010; for SAVRY review, see Borum, Lodewijks, Bartel & Forth, 2010). Despite the positive results in forensic practice, SPJ has yet to be meaningfully explored in child protection practice.

SPJ combines evidence-based research and professional judgment as its core components to assessing risk. Synthesized from the empirical research literature, supporting theories and professional opinion (Hart & Boer, 2010), SPJ items are an aides memoire for experienced practitioners who adjust the meaning of the risk level with sound professional judgement. SPJ provides structure in the form of manuals and worksheets to guide risk assessment and ultimately, the decision-making process. The structured approach assists to reduce the cognitive burden of practitioners and discourages reliance upon inappropriate heuristics (De Bortoli & Dolan, 2015).

SPJ aims to standardize decision-making by forcing practitioners to consider a list of factors. By emphasizing dynamic risk factors in decision-making, SPJ provides practitioners with a means of informing risk management practices (Douglas & Reeves, 2010). Transparency and consistency of decision-making is facilitated by structuring and guiding the decision-making process in which practitioners exercise professional judgment. This process provides practitioners with latitude to incorporate other factors that are regarded as important into the assessment as well as ethical or legal dimensions; the professional judgment component ultimately contributes to best practice (Hart & Boer, 2010).

## CHILD PROTECTION REMOVAL ASSESSMENT

Child Protection Removal Assessment (ChiPRA) is a newly developed instrument that adopts SPJ to assessing whether there is sufficiently high risk to warrant child removal. The full 22-item instrument was developed from a selective literature review of empirical studies identifying high-risk factors associated with serious abuse or child death. Studies focusing upon high-risk factors associated with, or predicting, child removal or child abuse-related fatalities were identified using the following criteria: (a) only studies published after 1996 and (b) where the child abuse perpetrators were identified as biological parents or adults in-loco parentis (such as defacto partners). Electronic databases searched included Sciverse Scopus, Web of Knowledge, Ovid MEDLINE, and Sage Journals. Search terms for child removal included [Remov\* OR placement OR custod\* OR out-of-home OR foster OR residential] and for child deaths [Homicide OR infanticide OR filicide OR neonaticide OR death OR fatalit\* OR murder OR manslaughter OR kill\*]. Both searches included the following search terms: [Predictor\* OR factor\* OR variables OR determinant\*

OR decision OR caus\* OR antecedent\*], [Child abuse OR child maltreatment OR child protect\* OR physical abuse OR neglect OR emotional abuse OR sexual abuse OR physical violence]. Additional articles were identified from email alerts from electronic databases (including Springer, Sage Journals, ScienceDirect, Oxford Journals, Blackwell Wiley Journals, and Ovid Technologies) and reference lists from the articles identified in the searches. Thirty-one and 57 articles fitted the search criteria for child removal and child abuse-related fatalities, respectively. A complete list of publications is listed in De Bortoli (2014).

The process of analysis involved tabulating, in the form of a matrix, study properties for each article (aim[s], data source, research design, sample size and characteristics, statistical methods and factors associated with child death/removal). From this process, a list of broad items was synthesized, having regard to supporting theories and prevailing professional opinion. In ChiPRA, items are organized into sub-scales to allow practitioners to group case information into manageable portions, a process that is useful for decision-making in child protection practice (Sidebotham, 2001).

The current study evaluates and compares the validity of ChiPRA and FRE-SDM<sup>TM</sup> items using child protection cases involving removal and non-removal identified from the Family Division of the Children's Court of Victoria (VCC). The analysis will identify ChiPRA items significantly discriminating between removal and nonremoval cases and whether the addition of "new items" (see below for definition) will improve the overall predictive validity of the "FRE-similar items" (see below for definition). The current study measures the validity of ChiPRA items however, it is outside the scope of the current study to assess the professional judgement component in decision-making.

## METHODS

The study was conducted in Victoria, Australia's second most densely inhabited jurisdiction with a population of 5.6 million (Australian Bureau of Statistics, 2013) inhabitants, 75% of which reside in major cities (Australian Bureau of Statistics, 2008). Monash University and Department of Justice Human Research Ethics Committees approved the study.

### The Children's Court of Victoria

The Family Division of the VCC hears applications relating to the protection and care of children and young people at risk. To the year ending June 2011, the court granted 46,844 protection orders with the most common orders being Supervision Orders (SO) and Custody to Secretary Orders (CSO). Although a SO does not require child removal, children are removed from the family home for a period of up to 12 months when a CSO is granted (Children's Court of Victoria, 2011).

## Criteria for Removal

Section 162 of the Children, Youth and Families Act 2005 deems a child as being in need of protection, if he or she has “suffered, or is likely to suffer, significant harm” and “the child’s parents have not protected, or are unlikely to protect, the child from harm.” A child who is in need of protection and requires a Protection Order involving removal indicates that, either, the risk of harm cannot be managed whilst the child resides within the family home, or, that neither parent is willing or able to have the child living at home.

## The Study

A retrospective cohort study examined 298 court cases where (a) a SO or CSO was granted, and (b) the child was living with at least one biological parent at the time a notification was made to child protection authorities. Data were obtained from court reports compiled by the Department of Human Services. These reports represent the blueprint for the practitioner’s evidence to the court, which provide information about factors that increase the risk of harm to the child. Magistrates assess whether there is sufficiently high risk to warrant child removal from the information contained in the structured court reports. Other sources of information contained in the court files include reports from Victorian Aboriginal Child Care Agency, Court Clinic, or assessment reports from medical doctors or parenting organizations.

Data were coded to reflect the situation at the time the court order was granted and scored using the FRE-SDM<sup>TM</sup> and ChiPRA instruments (described below). Types of court reports available in the court file included Application and Disposition reports (providing information to support a Protection Application), Addendum reports (providing additional information since the previous report), and applications supporting Vary/Revoke/Breach or Extend Protection Orders. Information presented in these reports was in the form of a narrative. As the quality and quantity of information contained in the reports varied, assumptions were needed to underpin the scoring process. Specifically, the presence/absence of risk factors was based wholly on the content of information contained in the court files and was assessed relative to previous reports. Risk factors not raised in initial reports were assumed to be absent. Risk factors raised in subsequent reports were assumed to persist until they were documented as being resolved. This approach was adopted because the contents of reports are regarded by Magistrates as *prima facie* accurate (personal communication with Judge Paul Grant, March 2010). Court reports were stored in a secure location on the premises of the VCC.

## Measures

### ChiPRA

Twenty-two ChiPRA items were organized into eight subscales and scored according to a preprepared guide to maximize consistency across cases. Each item was scored 0 (where the item was not mentioned in the court report or was indicated as absent) or 1 (where the court report indicated the item is present). The total score from 22 items determined the ChiPRA risk level based upon data from group research.

Of the 22 ChiPRA items, 14 were similar to those contained in the FRE-SDM<sup>TM</sup> (FRE-similar items) and eight were newly identified (new items; child vulnerability, concerning attitudes toward the child and investigation, cumulative family stresses, negative family relationships, family breakdown, economic deprivation, and parental compliance). Other differences between ChiPRA and FRE-SDM<sup>TM</sup> included scoring practices, balance of dynamic/static items, breadth of items, and family/child based approaches.

### FRE-SDM<sup>TM</sup>

FRE-SDM<sup>TM</sup> comprises an 11-item abuse and a 12-item neglect subscale. Items scoring was predetermined and varied between -1 and 3 depending on the weight allocated. For each subscale the scores were summed to determine the risk category (low/moderate/high/very high), the highest of which represented the family's overall risk (Children's Research Centre, 2008). The FRE-SDM<sup>TM</sup> (Version 3.1) used in the current study was obtained from Queensland's Department of Child Safety website (<http://www.communities.qld.gov.au/childsafety/child-safety-practice-manual/structured-decision-making/sdm-assessments>). Based upon a revalidation study, the version used in the current study has been superseded by an instrument that applies three risk classification levels (previously four), alters item weighting, and replaces items with more predictive ones (Johnson & Scharenbroch, 2012).

## Analyses

Of the 298 cases, a subset of 198 randomly selected cases (Random.Org, 1998–2012) represented the standardization sample and was used to establish the validity of ChiPRA. The remaining cases were allocated to a cross-validation sample. Analyses were carried out using the Statistical Package for Social Sciences (SPSS Version 20). Differences in mean continuous variables (ChiPRA and FRE-SDM<sup>TM</sup> subscales) for binary outcomes (SO and CSO) were examined using *t*-tests. Associations between categorical variables indicating overall risk for ChiPRA (low and high risk) and FRE-SDM<sup>TM</sup> (low, moderate, high, and very high risk) with child removal outcomes were examined with chi-squared analysis and reported using unadjusted odds ratio (OR)



and confidence intervals (CIs). A model of the minimum number of ChiPRA items was identified in a (backward) logistic regression analysis (LRA) of all ChiPRA items; items in the model were cross-validated. To assess the overall accuracy of child removal, a receiver operating characteristic (ROC) curve plotting the true positive rate against the false positive rate for all possible test results was produced. The area under the curve (AUC) statistic varies from 0 (perfect negative prediction) to 1 (perfect positive prediction) and the 0.50 diagonal represents chance prediction (Mossman, 1994). See Dolan and Doyle (2000) for a review. In addition, a (forward) LRA function and a ROC curve determining the predictive validity of the FRE-SDM<sup>TM</sup> subscales were produced. Finally, a (conditional) LRA determined the incremental validity contributed to by the new items by comparing the summed scores of (a) the FRE-similar items ( $n = 14$ ) and (b) the new items ( $n = 8$ ) using the -2 log-likelihood statistic.

## RESULTS

### Sample Characteristics

The sample consisted of 298 cases. Fifty-two percent of the children involved were male and 48% were female and comprised 51% ( $n = 152$ ) SOs and 49% ( $n = 146$ ) CSOs. Forty-five percent of the children were aged less than 5 years, 31% between 5 and 12 years, and 23% were aged over 13 years. Almost one in five children (19%) had a documented Aboriginal background. At the time of notification, 44% of children lived with a single biological parent, 37% lived with two biological parents, and 19% lived with a biological and nonbiological parent. The sample comprised applications brought before the VCC on the grounds of emotional abuse (98%) and/or physical abuse (85%), neglect (20%), sexual abuse (8%), death or incapacitation (13%), and/or abandonment (3%). Many applications involved multiple types of abuse.

### Differences Between ChiPRA Sub-scale Scores and Child Removal

Table 1 shows the comparison of mean scores for ChiPRA sub-scales and child removal outcome. Bonferroni-adjusted  $t$ -tests at  $p = 0.0625$  indicates differences for child characteristics, parental attitudes and behaviors, family functioning, economic-related factors, and risk management subscales.

### Relationships Between ChiPRA Items and Child Removal

Table 2 details the relationship between ChiPRA items and child removal. Bonferroni-adjusted chi-squared analysis at  $p = 0.002$ , detected differences between observed and expected rates for all variables in the parental attitudes and behavior subscale, negative family relationships, presence of domestic violence/interpersonal violence (DV/IPV), concerning housing/physical safety, and parental noncompliance. Borderline findings



**TABLE 1** Comparisons of Child Protection Removal Assessment Subscales and Child Removal Outcome ( $n = 198$ ,  $df = 167-196$ )

Subscales	Items in scale	SO ( <i>SD</i> )	CSO ( <i>SD</i> )	<i>t</i> tests
Child protection history	2	1.3 (0.80)	1.4 (0.78)	-1.371
Child characteristics	3	1.5 (0.90)	1.9 (0.99)	-3.202**
Parental characteristics	4	1.4 (1.00)	1.6 (1.08)	-1.972
Parental attitudes and behavior	5	2.0 (1.71)	4.2 (1.00)	-11.326***
Cumulative family stresses	2	1.4 (0.70)	1.6 (0.66)	-2.403
Family functioning	3	0.6 (0.72)	1.2 (0.76)	-6.323***
Economic-related factors	2	0.7 (0.71)	1.0 (0.87)	-2.875**
Risk management	1	0.4 (0.48)	0.8 (0.43)	-6.316**

*Note.* Full scoring criteria available from authors. SO = Supervision Orders; CSO = Custody to Secretary Orders.

\* $p \leq 0.00625$ . \*\* $p < 0.005$ . \*\*\* $p < 0.000$ .

( $p = 0.003$ ) were identified for evidence of abuse-related harm, parental substance misuse, and family stresses.

#### RELATIONSHIP BETWEEN LOW AND HIGH CHIPRA SCORES WITH CHILD REMOVAL

Eleven-item model showed a significant association between low and high scores with child removal. Low values ( $\leq 5$ ) were significantly associated with non-removal in the 11-item model,  $\chi^2(1) = 34.878$ ,  $p < 0.000$  (OR: 7.081; 95% CI: 3.559–14.088).

#### CHIPRA ITEMS PREDICTING CHILD REMOVAL

A backward LRA of all ChiPRA items yielded a significant 11-item model predicting child removal,  $\chi^2(11) = 147.546$ ,  $p < 0.000$ . The model correctly classified 86.3% of cases (88.30% sensitivity; 95% CI: 80.02–94.00%; 84.47% specificity, 95% CI: 76.00–90.85%; and explained between 52.7% (Cox and Snell  $R^2$ ) and 70.3% (Nagelkerke  $R^2$ ) of the variance associated with child removal. Residual diagnostics were not significant ( $\chi^2(8) = 7.661$ ,  $p = ns$ ). See Table 3. Applying the 11-item model to the cross-validation sample ( $n = 100$ ), 79% of cases were correctly classified with acceptable shrinkages of 7.3%, respectively.

#### OVERALL PREDICTIVE VALIDITY

Summed scales for the model yielded a significant ROC curve (AUC = 0.799;  $SE = 0.031$ ;  $p < 0.001$ , 95% CI: 0.738–0.859], an area which corresponded to a large effect size ( $\geq 0.714$ ; Rice & Harris, 2005). See Figure 1.

#### INCREMENTAL VALIDITY

A forward-stepwise (conditional) LRA was used to investigate whether the summed scores of the new items increased the predictive validity of the

**TABLE 2** Associations of Child Protection Removal Assessment Variables With Child Removal (CSO) or Child Nonremoval (SO) Outcomes ( $N=198$ )

Present item	<i>n</i> (%)		Pearson's $\chi^2(2)$	OR (95% CI)
	SO ( <i>n</i> = 95)	CSO ( <i>n</i> = 103)		
Child protection history				
Prior CPS notification (child)	75 (73)	67 (71)	0.058	<i>ns</i>
Prior CPS notification (parent)	57 (55)	68 (72)	6.125	<i>ns</i>
Child characteristics				
Difficult child behaviour	33 (32)	45 (47)	4.864	<i>ns</i>
† Evidence of abuse-related harm	56 (54)	71 (75)	8.914	2.483 (1.358–4.541)
Evidence of child vulnerability	65 (63)	67 (71)	1.224	<i>ns</i>
Parental characteristics				
Negative parent childhood experiences	36 (35)	37 (39)	0.339	<i>ns</i>
† Parental substance misuse	61 (40)	58 (61)	8.924	2.370 (1.340–4.195)
Parental mental health difficulties	48 (47)	40 (42)	0.405	<i>ns</i>
Criminal justice involvement	14 (14)	21 (22)	2.461	<i>ns</i>
Parental attitudes and behaviour				
Concerning attitude towards harm/abuse	52 (51)	87 (92)	39.894***	10.666 (4.694–24.234)
Concerning attitude towards child	39 (38)	86 (91)	58.883***	15.681 (7.090–34.681)
Concerning attitude towards investigation	17 (17)	53 (56)	33.371***	6.384 (3.302–12.342)
Parenting capacity/willingness concerns	58 (56)	86 (91)	29.169***	7.414 (3.367–16.325)
Child needs unmet	42 (41)	92 (97)	71.012***	44.45 (13.213–150.14)
Cumulative family stresses				
Child related stresses	75 (73)	74 (78)	0.685	<i>ns</i>
† Family stresses	68 (66)	80 (84)	8.664	2.745 (1.383–5.450)
Family functioning				
Negative family relationships	26 (25)	59 (62)	27.409***	4.854 (2.643–8.913)
Presence of DV/IPV	16 (16)	39 (41)	16.041***	3.787 (1.934–7.414)
Evidence of family breakdown	16 (16)	19 (20)	0.677	<i>ns</i>
Economic-related factors				
Concerning housing/physical safety	15 (15)	45 (47)	25.182***	5.280 (2.676–10.419)
Severe economic deprivation	58 (56)	53 (56)	0.005	<i>ns</i>
Risk management				
Parental noncompliance	36 (35)	72 (76)	33.242***	5.826 (3.134–10.830)

Note. CPS = Child Protection Services; DV = dependent variable; IPV = independent variable; OR = odds ratio; CI = confidence interval.

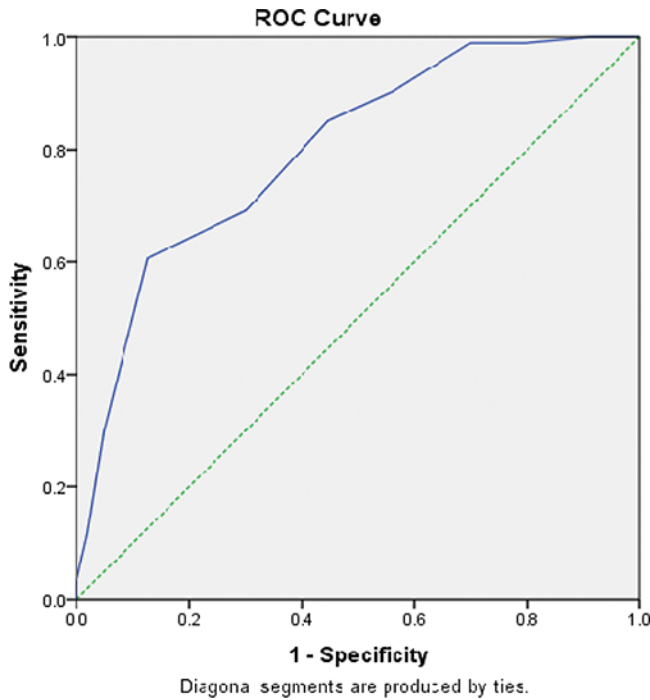
\*\* $p \leq 0.001$ . \*\*\* $p < 0.000$ . † $0.002 < p < 0.003$  (borderline significance).

summed scores of the FRE-similar items. Steps 1 and 2 functions were significant,  $\chi^2(1) = 59.478$ ,  $p < 0.000$ ;  $\chi^2(2) = 84.754$ ,  $p < 0.000$ ) and correctly classified 69.5% and 72.1% of decisions, respectively. Although the percentage of cases correctly classified was similar for both steps, explained variance in the

**TABLE 3** Model Comprising Child Protection Removal Assessment Items Significantly Predicting Child Removal (*n* = 198)

	B	SE	Wald	df	Sig	OR	95% CI for OR	
							Lower	Upper
Prior CPS notification (child)	-2.096	0.745	7.914	1	.005	.123	.029	.530
Prior CPS involvement (parent)	1.934	0.613	7.997	1	.005	5.664	1.703	18.842
Parental mental illness	-0.921	0.498	3.425	1	.064	.398	.150	1.056
Concerning attitude toward harm/abuse	1.322	0.671	3.881	1	.049	3.749	1.007	13.965
Concerning attitude toward the child	1.959	0.633	9.575	1	.002	7.095	2.051	24.544
Child needs unmet	4.01	0.911	19.293	1	.000	54.679	9.170	326.039
Cumulative family stresses	-1.569	0.738	4.516	1	.034	.208	.049	.885
Evidence of family breakdown	1.934	0.777	6.204	1	.013	6.920	1.510	31.709
Concerning housing/physical safety	2.092	0.658	10.102	1	.001	8.098	2.230	29.413
Severe economic deprivation	-1.867	0.716	6.793	1	.009	.155	.038	.629
Parental noncompliance	1.780	0.612	8.455	1	.004	5.931	1.787	19.691
Constant	-4.529	1.047	18.722	1	.000	.011		

Note. CPS = Child Protection Services; OR = odds ratio; CI = confidence interval.



**FIGURE 1** Receiver operating characteristic (ROC) curve for summed Child Protection Removal Assessment score: 11-items.

Step 2 model was greater (34.1% [Cox and Snell  $R^2$ ] and 45.4% [Nagelkerke  $R^2$ ]) compared with the Step 1 model (26.1% [Cox and Snell  $R^2$ ] and 34.8% [Nagelkerke  $R^2$ ]). This resulted in a significant contribution ( $-2LL = 106.746$ ,  $\chi(1)^2 = 25.612$ ,  $p < 0.000$ ) to the predictive validity by the new items.

## Relationship Between FRE-SDM<sup>TM</sup> Scores and Child Removal

### RELATIONSHIP BETWEEN RISK LEVELS AND CHILD REMOVAL

There was no association between maximum risk level (low, moderate, high, and very high) and child removal outcome,  $\chi^2(2) = 2.419$ ,  $p = 0.298$ .

### PREDICTIVE VALIDITY

A (Forward-Enter) LRA found abuse and neglect sub-scales significantly contributed to the model predicting child removal  $\chi^2(2) = 12.514$ ,  $p = 0.002$ . The model was statistically significant and explained between 4.1% (Cox and Snell  $R^2$ ) and 5.5% (Nagelkerke  $R^2$ ) of the unexplained variance of child removal outcome, correctly classifying 60.9% of cases. ROC analysis for the neglect sub-scale was not significantly different from chance (AUC = 0.520 [ $SE = 0.034$ ],  $p = 0.553$ , 95% CI: 0.545–0.586) however, the abuse subscale yielded a significant curve (AUC = 0.595 [ $SE = 0.033$ ],  $p = 0.005$ , 95% CI: 0.530–0.660).

## DISCUSSION

The aim of ChiPRA is to assist practitioners identify children at sufficiently high risk of future harm to warrant child removal. Our study compared the predictive validity of ChiPRA, a newly devised SPJ instrument with FRE-SDM<sup>TM</sup>, an actuarial comparison instrument. Our analysis identified an 11-item model correctly classifying 78–80% of child removal cases whereas, in comparison, FRE-SDM<sup>TM</sup> correctly classified 60.9% of cases. Analyses indicated that the incremental validity was likely to be gained from the increased focus placed upon dynamic factors in SPJ as well as the new items identified from the literature.

Although a model comprising 11 items that are most predictive of removal was identified, the ChiPRA instrument comprises all 22 items. The following discussion relates to the 11-item model, which informs us about the factors most likely to predict removal in the court setting.

### LOW EMPHASIS PLACED UPON STATIC FACTORS

The 11-item model includes only two historical items: prior CPS notification of the child and prior CPS involvement by the parent. Interestingly,

a negative relationship was identified between prior child protection notification and removal. This finding may be the result of the presence of a group of children in the court system whose risk is not sufficiently high to trigger removal but not sufficiently low to discharge from the supervision of CPS. These children are the subjects of the “revolving door syndrome” as they live in families requiring long-term support, frequently returning to the courts or authorities with unresolved issues (NSPCC, 2012). Other items negatively associated with child removal, parental mental illness, family stress, and economic deprivation, indicated that cases with these factors, tended to be met with leniency by the court. This finding may reflect the court’s approach not to further marginalize already disadvantaged families by exploring alternative options that keep children within the family unit.

Static risk factors determine an individual’s risk status, or their propensity to become abusive over time and assessments focusing upon historical factors provide little opportunity for managing risk and change (Douglas & Skeem, 2005). In contrast, child protection practice and judicial decision-making appears to emphasize the here and now, an approach that has previously been described in child death reviews (Victorian Child Death Review Committee, 2011, p. 48). The increased reliance placed upon dynamic factors may be a coping strategy of practitioners faced with complex and high-risk families (Brandon et al., 2008); in the child death literature, this has also been described as the “start again syndrome” (Brandon et al, 2008, p. 1).

#### FACTORS INCREASING THE RISK OF REMOVAL

The 11-item model indicates parents demonstrating a concerning attitude toward the harm/abuse or were noncompliant had an increased risk of child removal. Our findings confirmed existing research identifying child protection practitioners perceiving these factors as important in determining child removal (DeRoma, Kessler, McDaniel, & Soto, 2006). Acknowledging the abuse-related harm indicates the abusive parent feels remorse about their behavior, is willing to alter their behavior if faced with a similar situation, and/or is willing to take responsibility for the abuse without indicating the child is to blame for the abuse (Dietrich, Berkowitz, Kadushin, & McGlogin, 1990). Parents with concerning attitudes towards the child, may indicate, amongst other things, a parent’s inability to empathise with the child; a quality that enables the parent to understand and prioritize the child’s needs (Donald & Jureidini, 2004).

#### EMPHASIS UPON DYNAMIC FACTORS

Our findings indicate the increased focus placed upon dynamic factors by decision-makers, where nine of the 11-item model comprised dynamic

items. Although the predictive value of historical items is well accepted, many studies now establish the predictive value of dynamic factors (Beech, Friendship, Erikson & Hanson, 2002; Douglas & Skeem, 2005; Wong, Olver, & Stockdale, 2009). Specifically, dynamic items found to feature prominently in the decision to remove a child from the family home included concerning attitudes towards the harm/abuse or the child, an inability to meet the child's needs, evidence of family breakdown, safety concerns and parental non-compliance. In contrast, parental factors such as substance abuse and domestic violence, were not strong independent predictors of removal, a finding that is consistent in the research (Bhatti-Sinclair & Sutcliffe, 2012).

Where historical factors provide indications of longer-term risk (Monahan, 1995), dynamic factors assist in determining the risk state (Douglas & Skeem, 2005). In the context of child abuse, the risk state represents the propensity of an abusive situation arising, given the biological, psychological, and social variables affecting the parent(s). This includes the consideration of stable and acute dynamic factors (Douglas & Skeem, 2005) where stable factors are those factors unlikely to alter over short periods of time (e.g., substance abuse) and acute factors (e.g., crying baby), that may elicit an abusive response from a caregiver with little warning. Our findings indicated that items contributing to child removal tend to focus upon stable dynamic risk factors, with little consideration given to the temporary situational factors.

#### CHILD VULNERABILITY

Our findings indicate that the decision-making process is, in many respects, child-focussed. Specifically, the items identifying concerning attitudes towards the harm/abuse or the child, contributed to the removal decision, although, most importantly was the determination of whether the needs of the child were being met by the parents.

However, given the increased risk of abuse, serious injury and death associated with young and vulnerable children (Australian Institute of Health and Welfare, 2013; Victorian Child Death Review Committee, 2011), it was expected that child vulnerability would play an important role in child removal. Our findings identified less emphasis being placed upon child vulnerability items such as the child's age or whether the child had a disability. Although the univariate analyses indicated that evidence of prior harm was found to be of borderline significance, multivariate analysis determined that these findings were not significant when placed in the context of other factors. Together, these findings appear to indicate that the child's personal qualities play a passive role and that the parental attitudes and behaviors are more important in determining child removal.

Some researchers suggest that these findings reflect limited knowledge of child development amongst child protection professionals (Brandon, Side-

botham, Ellis, Baily, & Belderson, 2011) or magistrates at the Children's Court (Sheehan, 2001). However, it is also possible that given the longer-term objective of CSOs is one of re-unification, the reluctance of magistrates to remove young children from the care of their parents may be related to the negative impact it may have upon attachment and future relationships.

#### COMPARISON OF INSTRUMENTS

In the context of the study findings, the emphasis placed upon dynamic factors by magistrates when deciding to remove a child effectively limits the usefulness of actuarial instruments in determining child removal. These findings, amongst other things, indicated the importance of addressing parental attitudes and behavior as well as the physical, social, and emotional needs of the child. In addition, courts appear to be less likely to focus upon parental risk factors (such as substance misuse, domestic violence, and mental illness) and more likely to focus upon behaviors associated with them. In the light of this, the limited predictive validity of FRE-SDM™ is not surprising.

#### SPJ INSTRUMENTS

The remainder of the discussion will now turn to the theoretical and practical utility of the full 22-item ChiPRA model as an example of a SPJ instrument that assists practitioners determine cases necessitating child removal.

Although not all SPJ items are highly predictive of a particular outcome (Coid et al., 2011) instruments comprise items that are important in the assessment process that contribute to prevention of an outcome (Hart & Boer, 2010). Other items (such as substance abuse or domestic violence) are included as a result of supporting theories and prevailing professional opinion. SPJ instruments force practitioners to adopt a systematic approach by scoring individual items. The items represent an aides memoire for practitioners, resulting in a transparent and consistent approach to decision-making.

In our study, the ChiPRA score represents one part of the overall assessment and its weight is determined by professional judgement, a process that relies upon practitioners' highly developed experience, knowledge of theory, and ability to recognize and manage high-risk cases. SPJ's focus upon dynamic items permits practitioners to formulate risk management strategies in a comprehensive and transparent judgment that considers interactions between risk and protective factors; a process that allows risk to be monitored and managed over time.

Accordingly, practitioners using SPJ instruments must be highly trained in risk assessments and child protection practice as well as possessing knowledge of legal and ethical practices impacting upon decisions. Initially, forensic mental practitioners were required a Master's qualification to use SPJ. Nowadays, this is no longer required with SPJ training being offered



to undergraduate and graduate level practitioners. Although the introduction of SPJ approaches involve resource intensive processes such as recording risk and protective factors and demand the implementation of an increasingly specialized workforce, SPJ provides a clearer framework for all professionals working with high-risk cases.

Furthermore, it is well documented that the practice of communicating risk across the welfare-legal divide is most challenging as well as between various departments and multidisciplinary staff employed by child welfare organizations (Sheehan, 2001). The importance of producing reports that contain clear information and transparent reasoning cannot be underestimated in the development of common risk thresholds, risk monitoring and ultimately best practice. SPJ provides a means of contributing to a greater understanding of risk in child protection practice.

#### STUDY LIMITATIONS

A number of practical limitations apply to the current study. The quality of information contained in court files is known to vary (Forrester & Harwin, 2006) and was noted by the researcher at the time of data collection. Accordingly, coding ChiPRA items occasionally involved a subjective process, particularly for items in the parental attitudes and behaviors subscale. This process was largely reliant upon the practitioner's ability to document and clearly communicate the facts and whilst this was not always the case, the lack of clarity may have similarly impacted upon magistrates' and the researcher's interpretation. In addition, the researcher was not trained or accredited in scoring the FRE-SDM™ and the procedures/policy manual for Queensland FRE-SDM™ was not accessible at the time of the scoring. These limitations were partially overcome by adapting the scoring procedures from the Californian SDM™ manual (Children's Research Centre, 2008) to the Queensland instrument. As data was coded by a single researcher, reliability studies were not conducted. This is a limitation of the current study, and plans for future studies will incorporate interrater reliability analyses.

Practitioners' recommendations were not always agreed to by the magistrates. This indicates that whilst the contents of the court report are likely to present the case facts in a manner to support the practitioner's perspective, they inform the magistrates' decision but do not guarantee a particular outcome. In this respect, the differentiation between magistrates and practitioners assessments adds to the strength of the study. However, ChiPRA was developed and validated based on decisions by magistrates and there is no indication that the outcome was the best one for the child. Given that prediction is an "inexact science" (Dolan & Doyle, 2000:303), and, that an instrument which predicts every single case of child removal will never be developed, it is paramount that efforts are focused upon preventing further harm and abuse, and, that transparent decisions foster a greater consistency

of decision-making and approach to risk management (Heilbrun, Yasuhara & Shah, 2010). Unlike actuarial instruments that are primarily concerned with predicting outcomes, SPJ focuses upon preventing outcomes whilst incorporating evidence-based research in the overall assessment. Although prospective studies form part of an overall validation strategy, the aim of our current study was to introduce an SPJ instrument as a means of approaching research-informed decision-making.

Although item validity has been assessed, professional judgement has not. The current study is the first step and is nonetheless important given the different items and the balance of static/dynamic variables between actuarial and SPJ instruments. The professional judgement component would require a prospective study for its proper validation.

## CONCLUSION

Decision-aids play a vital role in child protection practice by providing a systematic approach to risk assessment (Barber, Trocme, Goodman, Shlonsky, Black & Leslie, 2007); however, there are many limitations associated with the instruments currently used in child protection practice in Australia. SPJ provides an alternative to existing approaches used in Victoria where decisions made by magistrates relating to child removal emphasize dynamic factors rather than static factors. Our findings indicate that SPJ could provide a preferred framework for decision-making in child protection as it determines risk, emphasizes risk management, and focuses upon preventing abuse. Our study results suggest SPJ instruments warrant further research including prospective studies measuring reliability and validity studies in other settings.

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## REFERENCES

- Australian Bureau of Statistics. (2008). *4102.0: Australian Social Trends, 2008*. Retrieved from <http://www.abs.gov.au/ausstats/abs@.nsf/mf/3101.0>
- Australian Bureau of Statistics. (2013). *3101.0: Australian Demographic Statistics, September 2012*. Retrieved from <http://www.abs.gov.au/ausstats/abs@.nsf/mf/3101.0>
- Australian Institute of Health and Welfare. (2013). *Child protection Australia 2011–12 (Child Welfare series)*. Canberra, Australia: Author.

- Baird, C., & Wagner, D. (2000). The relative validity of actuarial- and consensus-based risk assessment systems. *Children and Youth Services Review, 22*, 839–871.
- Baird, C., Wagner, D., Healy, T., & Johnson, K. (1999). Risk assessment in child protective services: consensus and actuarial model reliability. *Child Welfare, 78*, 723–748.
- Barber, J., Trocme, N., Goodman, D., Shlonsky, A., Black, T., & Leslie, B. (2007). *The reliability and predictive validity of consensus-based risk assessment*. Montreal, Quebec, Canada: Centres of Excellence for Children's Well-Being.
- Bath, H. (2007). *Northern Territory Community Services High Risk Audit*. Darwin, Australia: The Thomas Wright Institute.
- Beech, A., Friendship, C., Erikson, M., & Hanson, R. (2002). The relationship between static and dynamic risk factors and conviction in a sample of UK child abusers. *Sexual abuse: A Journal of Research and Treatment, 14*, 155–167.
- Bhatti-Sinclair, K., & Sutcliffe, C. (2012). What determines the out-of-home placement of children in the USA? *Children and Youth Services Review, 34*, 1749–1755.
- Borum, R., Lodewijks, H., Bartel, P., & Forth, A. (2010). Structured Assessment of Violence Risk In Youth (SAVRY). In R. Otto, & K. S. Douglas (Eds.), *Handbook of violence risk assessment* (pp. 63–79). New York, NY: Routledge.
- Brandon, M., Belderson, P., Warren, C., Howe, D., Gardner, R., Dodsworth, J., & Black, J. (2008). *Analysing child deaths and serious injury through abuse and neglect: what can we learn? A biennial analysis of serious case reviews 2003–2005*. Nottingham, UK: Department for Children, Schools and Families.
- Brandon, M., Sidebotham, P., Ellis, C., Baily, S., & Belderson, P. (2011). *Child and family practitioners' understanding of child development: lessons learnt from a small sample of serious care reviews*. London, UK: University of East Anglia.
- Children's Court of Victoria. (2011). *Annual report 2010–2011*. Melbourne, Australia: Children's Court of Victoria.
- Children's Court of Victoria. (2012). Family division—child protection. In P. Power (Ed.), *Research materials*. Retrieved from [http://www.childrenscourt.vic.gov.au/sites/default/files/Research\\_Materials\\_5\\_FD\\_Child\\_Protection\\_0.pdf](http://www.childrenscourt.vic.gov.au/sites/default/files/Research_Materials_5_FD_Child_Protection_0.pdf)
- Cleaver, H., Unell, I., & Aldgate, J. (2011). *Children's needs—parenting capacity. Child abuse: Parental mental illness, learning disability, substance misuse, and domestic violence*. London, UK: The Stationery Office.
- Coid, J. W., Yang, M., Ulrich, S., Zhang, T., Sizmur, S., Farrington, D., & Rogers, R. (2011). Most items in structured risk assessment instruments do not predict violence. *The Journal of Forensic Psychiatry and Psychology, 22*, 3–21.
- Cummins, P., Scott, D., & Scales, B. (2012). *Protecting Victoria's vulnerable children inquiry*. Victoria, Australia: Department of Premier and Cabinet.
- Davidson-Arad, B. (2001). Predicted changes in children's quality of life in decisions regarding the removal of children at risk from their homes. *Children and Youth Services Review, 23*, 127–143.
- De Bortoli, L. (2014). *Child removal in child protection practice: comparing structured professional judgement and actuarial risk assessment instruments* (PhD thesis, Monash University, Melbourne, Australia) Retrieved from <http://arrow.monash.edu.au/vital/access/manager/Repository/monash:128561>.
- De Bortoli, L., & Dolan, M. (2015). Decision making in social work with families and children: developing decision-aids compatible with cognition. *British Journal of Social Work, 45*, 2142–2160.

- Delfabbro, P., Fernandez, E., McCormick, J., & Kettler, L. (2013). Reunification in a complete entry cohort: A longitudinal study of children entering out-of-home care in Tasmania, Australia. *Children and Youth Services Review*, *35*, 1592–1600.
- Department of Human Services. (2011a). *Protecting children, changing lives. Supporting the child protection workforce*. Melbourne, Australia: Victorian Government Department of Human Services.
- Department of Human Services. (2011b). *Child protection workforce. The case for change*. Melbourne, Australia: State of Victoria.
- Department of Human Services. (2012). *Best interests case practice model: Summary Guide*. Melbourne, Australia: State Government of Victoria.
- DeRoma, V. M., Kessler, M. L., McDaniel, R., & Soto, C. M. (2006). Important risk factors in home-removal decisions: Social caseworker perceptions. *Child and Adolescent Social Work Journal*, *23*, 263–277.
- Dietrich, D., Berkowitz, L., Kadushin, A., & McGloin, J. (1990). Some factors influencing abusers' justification of their child abuse. *Child Abuse and Neglect*, *14*, 337–345.
- Dolan, M., & Doyle, M. (2000). Violence risk prediction: Clinical and actuarial measures and the role of the Psychopathy Checklist. *The British Journal of Psychiatry*, *177*, 303–311.
- Donald, T., & Jureidini, J. (2004). Parenting capacity. *Child Abuse Review*, *13*, 5–17. doi:10.1002/car.827
- Douglas, K. S., Ogloff, J. R. P., & Hart, S. D. (2003). Evaluation of a model of violence risk assessment among forensic psychiatric patients. *Psychiatric Services*, *54*, 1372–1379.
- Douglas, K., & Reeves, K. (2010). Historical-Clinical-Risk-Management-20 (HCR-20) violence risk assessment scheme. Rational, application and empirical overview. In R. Otto, & K. Douglas (Eds.), *Handbook of violence risk assessment* (pp. 147–185). New York, NY: Routledge.
- Douglas, K., & Skeem, J. (2005). Violence risk assessment: Getting specific about being dynamic. *Psychology, Public Policy, & Law*, *11*, 347–383. doi:10.1037/1076-8971.11.3.347
- Forrester, D., & Harwin, J. (2006). Parental substance misuse and child care social work: findings from the first stage of a study of 100 families. *Child & Family Social Work*, *11*, 325–335.
- Gambrill, E. (2005). *Critical thinking in clinical practice: improving the quality of judgments and decisions*. Hoboken, NJ: John Wiley & Sons.
- Gillingham, P. (2009). Practitioner perspectives on the Family Risk Evaluation Tool: An aide to decision making or “just another form to fill in”? *Developing Practice*, *23*, 47–54.
- Gillingham, P. (2011). Decision-making tools and the development of expertise in child protection practitioners: are we ‘just breeding workers who are good at ticking boxes’? *Child & Family Social Work*, *16*, 412–421.
- Gillingham, P., & Humphreys, C. (2010). Child protection practitioners and decision-making tools: Observations and reflections from the front line. *British Journal of Social Work*, *40*, 2598–2616.
- Grove, W., & Meehl, P. (1996). Comparative efficiency of informal (subjective, impressionistic) and formal (mechanical, algorithmic) prediction procedures: The clinical-statistical controversy. *Psychology, Public Policy and Law*, *2*, 292–323.

- Hart, S., & Boer, D. (2010). Structured professional judgement guidelines for sexual violence risk assessment: The Sexual Violence Risk-20 (SVR-20) and Risk for Sexual Violence Protocol (RSVP). In R. Otto, & K. Douglas (Eds.), *Handbook of violence risk assessment* (pp. 269–294). New York, NY: Routledge.
- Heilbrun, K., Yasuhara, K., & Shah, S. (2010). Violence risk assessment tools: Overview and critical analysis. In R. Otto, & K. Douglas (Eds.), *Handbook of violence risk assessment* (pp. 1–18). New York, NY: Routledge.
- Hetherington, T. (1999). Child protection: A new approach in South Australia. *Child Abuse Review*, 8, 120–132.
- Johnson, K., & Scharenbroch, C. (2012). *Family risk evaluation validation: A prospective study*. Prepared for Queensland Department of Communities, Child Safety Services. Madison, WI: Children's Research Centre.
- Johnson, K., Wagner, D., & Wiebush, R. (2000). *South Australia Department of Family and Community Services: Risk assessment revalidation study*. Madison, WI: Children's Research Center.
- Monahan, J. (1995). *The clinical prediction of violent behavior*. Northvale, NJ: John Aronsin Inc.
- Mossman, D. (1994). Assessing predictions of violence: being accurate about accuracy. *Journal of Consulting and Clinical Psychology*, 62, 783.
- Munro, E. (2008). *Effective child protection*. (2nd ed.): London, UK.
- Munro, E., & Manful, E. (2010). *Safeguarding children: a comparison of England's data with that of Australia, Norway and the United States*. *Childhood Wellbeing Research Centre*. London, UK: Department of Education.
- NSPCC. (2012). *NSPCC policy on child neglect*. Retrieved from [https://www.nspcc.org.uk/Inform/resourcesforprofessionals/neglect/policy\\_wda92078.html](https://www.nspcc.org.uk/Inform/resourcesforprofessionals/neglect/policy_wda92078.html)
- Random.Org. (1998–2012). Random.Org. Retrieved from <http://www.random.org/>
- Rice, M., & Harris, G. (2005). Comparing effect sizes in follow-up studies: ROC area, Cohen's d, and r. *Law and Human Behavior*, 29, 615–619.
- Scannapieco, M., & Connell-Carrick, K. (2005). *Understanding child maltreatment. An ecological and developmental perspective*. New York, NY: Oxford University Press.
- Sheehan, R. (2001). *Magistrates' decision-making in child protection cases*. Aldershot, UK: Ashgate Publishing Company.
- Sidebotham, P. (2001). An ecological approach to child abuse: a creative use of scientific models in research and practice. *Child Abuse Review*, 10, 97–112.
- Victorian Child Death Review Committee. (2011). *Annual report of inquiries into the deaths of children known to Child Protection 2011*. Melbourne, Australia: Author.
- Wagner, D. (1997). *South Australia Department of Family and Community Services: Risk Assessment Validation Study*. Madison, WI: Children's Research Center.
- Wong, S., Olver, M., & Stockdale, K. (2009). The utility of dynamic and static factors in risk assessment, prediction, and treatment. In J. Andrade (Ed.), *Handbook of violence risk assessment and treatment: New approaches for mental health professionals* (pp. 83–120). New York, NY: Springer Publishing Company.
- Wood, J. (2008). *Report of the Special Commission of Inquiry Into Child Protection Services in New South Wales*. Sydney, Australia: State of NSW through the Special Commission of Inquiry Into Child Protection Services in NSW.