Rapid evidence assessment: Current best evidence in the therapeutic treatment of children with problem or harmful sexual behaviours, and children who have sexually offended

Prepared for the Royal Commission into Institutional Responses to Child Sexual Abuse

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Project team

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Disclaimer

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Royal Commission
into Institutional Responses
to Child Sexual Abuse

Preface

On Friday 11 January 2013, the Governor-General appointed a six-member Royal Commission to inquire into how institutions with a responsibility for children have managed and responded to allegations and instances of child sexual abuse.

The Royal Commission is tasked with investigating where systems have failed to protect children, and making recommendations on how to improve laws, policies and practices to prevent and better respond to child sexual abuse in institutions.

The Royal Commission has developed a comprehensive research program to support its work and to inform its findings and recommendations. The program focuses on eight themes:

1. Why does child sexual abuse occur in institutions?
2. How can child sexual abuse in institutions be prevented?
3. How can child sexual abuse be better identified?
4. How should institutions respond where child sexual abuse has occurred?
5. How should government and statutory authorities respond?
6. What are the treatment and support needs of victims/survivors and their families?
7. What is the history of particular institutions of interest?
8. How do we ensure the Royal Commission has a positive impact?

This research report falls within theme two.

The research program means the Royal Commission can:

- obtain relevant background information
- fill key evidence gaps
- explore what is known and what works
- develop recommendations that are informed by evidence, can be implemented and respond to contemporary issues.

For more on this program, please visit www.childabuseroyalcommission.gov.au/research

Table of contents

List of tables

Executive summary

Background

Sexually harmful behaviour is not limited to the sexual abuse of children by adults. It includes sexually problematic and harmful behaviour by other children. While the prevalence of sexually harmful behaviour by children is difficult to establish, emerging and ongoing research indicates that it is a significant problem that represents a substantial proportion of sexual harm to children.

The Royal Commission into Institutional Responses to Child Sexual Abuse commissioned this evidence review to identify current best evidence about the effectiveness and content of programs and practices, in Australia and internationally, aimed at treating children with problem sexual behaviour (aged under 10), harmful sexual behaviour (aged 10–17), and children who have sexually offended (aged 10–17).

This report details the systematic methods used to locate and synthesise the evidence, the results of this process, and their implications for practice and policy in Australia.

Method

International review

The authors obtained current best evidence in the international literature by conducting a rapid evidence assessment, a method that incorporates as many of the fundamental techniques used in high-quality systematic reviews as time and resources will allow, to produce a pre-specified, transparent and replicable synthesis of the literature. For this review, we conducted an extensive international search to locate any study that tested – using a comparison or control group – a program, practice or approach for treating problem or harmful sexual behaviours. The search included nine relevant academic databases; the Peabody Research Institute at Vanderbilt University's meta-analytic database of interventions for treating juvenile delinquency; expert consultation; and published and grey literature found in included studies, other reviews, and a Google Scholar search of sources citing located studies. Where possible, data was quantitatively synthesised using meta-analysis and was otherwise narratively synthesised.

Results

A total of 2,259 citations were identified and screened for potential inclusion in the review – 27 studies met our inclusion criteria. Of these, 10 were randomised controlled trials (RCTs) and 17 used quasi-experimental design (QED). Most of the studies were from the

United States, though Australia, New Zealand, Canada and the United Kingdom were also represented.

We used an adaptation of the Maryland Scientific Methods Scale (Sherman et al., 1997) to rate the quality of each study. Despite including only experimental and non-experimental studies, many of these were judged to be low (n=14) or medium (n=9) quality, while only a few (n=4) were of high quality. The magnitude of effects (or lack of effects) was distributed fairly evenly with respect to quality. Among the lower-quality studies, four found improvements in harmful sexual behaviour (HSB) and four also found improvements in other areas; among the medium-quality studies, two found improvements in such behaviours and three found improvements in other areas; among the high-quality studies, three found improvements in HSB and one found improvements in other areas. When improvements were found, these tended to be medium or large in magnitude.

Programs for children aged 0–10 with problem sexual behaviour

Only two studies, both more than 15 years old, were located for this age group. Bonner (1999) tested the effectiveness of cognitive behaviour therapy (CBT) versus dynamic play therapy (DPT) for problem sexual behaviours (PSB). Pithers (1998) tested relapse prevention versus expressive therapy (ET). Neither study reached statistical significance for a treatment effect, though this may be a result of being underpowered (that is, having a small sample size) rather than a lack of effect.

Programs for children aged 10–17 with harmful sexual behaviour

There was only one study located for this age group (Laing, Tolliday, Kelk, and Law, 2014), which was based on an evaluation of program in New South Wales in Australia (the New Street Adolescent Service program). While the New Street program demonstrated several positive treatment effects for non-harmful sexual behaviour outcomes among those who completed treatment compared with their matched controls (including those facing a violent criminal charge, violent report, non-violent criminal charge or non-violent report), this effect did not extend to specific HSB outcomes. This finding may be due to the small sample size of the study, coupled with a low overall base rate of known repeat HSB in both the treatment and various comparison groups used in the study. Importantly, these findings indicate that there may be a substantial subgroup of children who withdraw from treatment, and they need to be better understood in terms of their issues and corresponding treatment needs. They may have more severe problems that require a different set of services to maintain them in treatment and show improvement in outcomes.

Programs for children aged 10–17 who have sexually offended and received treatment through a criminal justice intervention

Twenty-four studies were located representing a mix of quality and approaches. Three of these studies, all rated as high quality and combining to find a large, positive effect, tested Multisystemic Therapy (MST). This program uses an ecosystems orientation to bundle potentially effective approaches (including cognitive, behavioural and family therapies) delivered in close cooperation with family/caregivers, other important service providers (for example, education and health services), and members of the neighbourhood or community. We conducted a meta-analysis of the 22 studies of sexual offenders that measured impacts on sexual offences or sexual recidivism, and it revealed a modest

treatment effect using these other approaches. When MST was excluded and the approaches were tested with respect to whether they were family focused or individually focused[1], the direction of effect favoured the family focused approaches, but no statistical differences emerged (this may be due to the relatively small number of included studies that, themselves, have small sample sizes).

Implementation

Although data was sparse on the implementation – successful or otherwise – of individual programs, MST evaluations that assessed model fidelity (the extent to which a program was delivered as intended) as part of their delivery process had the largest treatment effects. Lower-quality measures of satisfaction in other studies appeared to have no relationship with actual client outcomes.

Published or publicly available Australian programs and services

There are few publicly available evaluations of Australian services, making it difficult to determine which programs might be effective for the various age groups. This applies to evaluations of any kind, not just those that meet the stringent inclusion criteria for this evidence review. Notable exceptions include New Street (included in the international review – see section above for HSB in ages 10–17). The dearth of high-quality evidence of effectiveness in existing Australian programs raises serious concerns, and indicates the need for better and more frequent evaluation.

Discussion

Overall, the review has found there are few rigorous high-quality studies, especially for children outside the youth justice system. After more than 40 years of specialist treatment internationally for children displaying these behaviours, it is surprising that most of the evidence does not meet the criteria applied in this study.[2] The reason for this is unknown, but may be connected to resource limitations, varying areas of priority, and the inherent ethical difficulties of carrying out research in this area. Research in this area is typically directed at whether the problem or harmful sexual behaviour is repeated. Change within clinical populations is reported in the broader literature, which also contains less rigorous qualitative reviews. Rarely do studies of these populations investigate whether treatment is effective in addressing any harm caused; nor do they tend to explore the underlying, contextual or related factors, such as past trauma (including domestic violence), poverty, stigma, the role of gender, co-occurring diagnoses (mental health problems, or developmental or learning difficulties), family disruption, or living in out-of-home care.

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1 MST is a family-focused therapy, so it could not be independently tested for the influence of focus.

2 A National Institute of Clinical Excellence (NICE) review (https://www.nice.org.uk/guidance/ng55/evidence/evidence-review-1-interventions-2660746285) was conducted in the United Kingdom at roughly the same time as this evidence review. The NICE review synthesised studies using less stringent criteria and included a separate qualitative synthesis of evidence. Findings were similar, both in terms of the lack of high-quality evidence and their conclusions about what is likely to be effective.

Studies also tend not to focus on the safety, wellbeing and development of children identified with PSB and HSB.

That said, a number of treatment approaches show promise. In particular, MST is one of the more promising models of treatment for children aged 10–17 who have sexually offended. However, it is not the only program or approach that has some measured and positive effect. This makes sense, given that MST is a needs-driven program that bundles a number of potentially effective approaches, and some of these (for example, CBT) are likely to account for part of the effect. What also makes MST unique and powerful is that it uses an ecological approach that stresses the importance of contextual factors that, for better or worse, are inextricably linked with, and supported by, the environment. In particular, MST is parent/caregiver mediated, recognising that individual treatment alone is unlikely to change the behaviour of children. In addition, the approach used in MST seems to support specialist rather than non-specialist services. While the programs tested in the studies included in this review involved testing a more general form of MST, recent iterations of the program have seen it split off into specialist versions, each designed to treat a specific problem or issue within a population. Qualified support for MST needs to take into account that findings have not been sufficiently replicated across contexts. In addition, inclusion criteria for participants limits what can be said about populations (particularly clinical samples) not included in the studies, and there have been insufficient studies conducted by independent evaluators. In other words, it will be some time before it can be claimed that MST is effective across locations for the diverse range of youths and families where problematic and harmful sexual behaviours are an issue. Nonetheless, its development is likely to be, at least partly, a response to feedback from the field – as well as observed outcome data from the program (which the developers follow closely) – that it shows promise, and the overall package of strategies it deploys has merit.

In essence, MST is a well-articulated consolidation of all the things that programs must do to be effective in this problem area. It is also a set of principles and processes designed to deliver them well. That said, MST is not necessarily the only program that might work. In addition, there may be good reasons that it cannot, or will not, be delivered to all children and families in need. Given that this therapy approach incorporates key features that, if delivered well, appear to be important for improving outcomes, the use of some or all of these key features are more likely than other approaches to yield positive outcomes. These key features include:

- using known effective behaviour change techniques. Problem or harmful sexual behaviour is still a behaviour. Modern, evidence-based strategies for changing behaviour usually involve behavioural and/or cognitive behavioural approaches
- avoiding group-based approaches in favour of individually delivered services to avoid peer contagion and to address the specific individual needs of children and families
- using interventions mediated by parents or caregivers to ensure the effective and timely reinforcement of positive behaviours, and the curbing or extinction of negative behaviours
- using a range of key service providers in treatment planning and delivery, based on need

- paying attention to the influence of contexts such as neighbourhood and community (for example, school and recreational organisations), which are crucial for both monitoring and managing behaviour
- using reliable and valid measurements of outcomes, and ensuring fidelity to the model being delivered.

Implications

Results from this rapid evidence assessment suggest there are potentially effective approaches to dealing with problem or harmful sexual behaviours. All children displaying these behaviours should have the opportunity to be assessed, and to receive an effective service to better help them avoid escalation and/or prevent them harming other children. The review suggests that services should be:

- based on specialised rather than non-specialised techniques. Problem or harmful sexual behaviours are complex and highly stigmatised, and effective treatment requires considerable expertise
- delivered early, and should be therapeutic rather than punitive. More coercive strategies may be required for more serious and/or repeat cases, or where engagement strategies fail, but effectively dealing with these behaviours early is the best form of prevention
- mediated by the parent or caregiver (that is, the parent or caregiver is actively involved and delivers the treatment)
- based on behavioural and/or cognitive techniques. The use of these techniques in the field and in training institutions may need to be encouraged
- delivered individually rather than in a group therapy format
- based on a holistic and ecosystemic approach, ensuring that the family, neighbourhood and community environment supports and maintains behavioural change
- driven by outcomes, and include reliable and valid wellbeing indicators that move beyond problematic/harmful behaviours. Children who fare well in terms of their personal safety and wellbeing are less likely repeat these behaviours. This is very important for children in out-of-home care, who are particularly vulnerable to poor outcomes, and who may not be living with their birth parents. Some jurisdictions, most notably New South Wales, are moving to an outcomes-based approach to providing out-of-home care services (Mildon, Shlonsky, Michaux, & Parolini, 2015). This approach would fit well with providing high-quality, specialist PSB/HSB services
- required to have minimal standards for treating PSB/HSB. Importantly, these should include the use of continuous quality improvement processes that are centred around three core practice principles: ‘systematic, data-guided activities’, ‘designing practices with local conditions in mind’, and ‘iterative development and testing’ of interventions (Rubenstein et al., 2014). Specifically, continuous quality improvement processes include:

    1. minimum or better competencies or the potential and motivation to meet these

2. training underpinned by high-quality supervision and coaching
3. the use of data to continuously evaluate both implementation success (for example, fidelity) and individual outcomes for clients
4. the use of a model (such as MST) that has been found to be effective with the same or similar populations. If this is not possible, then continuous improvement and building on effective practices must take place within existing programs, eventually building into a specialised service that can demonstrate its effectiveness.

Background and purpose of this review

The Royal Commission into Institutional Responses to Child Sexual Abuse (the Royal Commission) commissioned this evidence review to identify current best evidence about effective programs and practices – in Australia and internationally – for the therapeutic treatment of children with PSB or HSB, and children who have sexually offended.

Based on the evidence review, the following research questions were to be answered:

1. What evidence is there in academic literature, grey literature and in practice-based knowledge to identify principles and approaches that represent current best evidence in the therapeutic treatment of children with PSB or HSB, and children who have sexually offended?
2. What services have been evaluated, what was the quality of the evaluations, and what were the key findings?
3. For interventions evaluated and found to be associated with positive outcomes, what elements of the service delivery models have been identified as being effective in reducing child sexual abuse or in improving outcomes for children?
4. How do these findings relate to publicly available evaluations of practice in Australia?

While the Royal Commission and the public have paid a great deal of attention to adult sexual abuse of children in institutional contexts, there is evidence to suggest that the incidence of children engaging in problematic sexual behaviour in institutional and non-institutional settings is increasingly recognised as a serious problem in Australia and internationally (O'Brien, 2008; South et al., 2015). However, previous Royal Commission reviews of the child sexual abuse prevention and treatment literature have found very few high-quality, rigorous effectiveness studies that explicitly focus on children in institutional settings. As such, we looked beyond abuse in institutional settings, focusing more broadly on the treatment literature to find programs, services and approaches that have been found to be effective at reducing PSB in all its forms.

Terminology

In line with the prevailing literature, the term '*problem sexual behaviour*' is used in this document to describe sexual behaviours that fall outside the normal range for children aged under 10. These behaviours may or may not involve harming another. Problematic sexual behaviours by a young child may also be an indicator of the child having been harmed and may place the child at risk of sexual exploitation. For these reasons the behaviours are 'problematic'. '*Harmful sexual behaviour*' is used to characterise problematic and harmful sexual behaviours among children aged 10–17, who received treatment voluntarily or in relation to child protection requirements or diversion from juvenile justice system; and '*sexual offenders*' is used to describe children aged 10–17 who, as a result of one or more criminal complaints involving sexual abuse, are receiving treatment through a juvenile justice intervention. However, the terminology applied in this field is far from consistent and

reflects a general lack of agreement among scientists and professionals about how to uniformly describe and name issues relating to PSB in children who are at different stages of development and may be held to different levels of culpability. Children aged 10–17 who have committed a sexual offence may not be criminally prosecuted for a range of reasons relating to capacity and/or evidence. There is a developmental test of capacity in Australian law. This is the rebuttable presumption of *doli incapax*, which applies to children aged 10–14 years. The prosecution must rebut this presumption by proving that the child understood, at the time of committing the act, that this was not only wrong but was legally wrong. The presumption is stronger for younger children in this age range. Where matters are not criminally prosecuted and are dealt with civilly, either formally (for example, by treatment order or under child protection legislation) or informally (relying on voluntary agreement), the definition used here is of harmful sexual behaviour.

Notwithstanding these inconsistencies in terminology, problem or harmful sexual behaviour – depending on the age of a child – typically includes concerning, coercive, violent and/or controlling behaviour patterns. For example, these may be reflected in excessive or public self-stimulation; peeping; unwanted kissing, touching or other sexual approaches to others; voyeurism; stalking; sadism; coercive sexual assault, sexual intercourse or oral sex (Boyd, & Bromfield, 2006; Evertsz, & Miller, 2012).

In the absence of a settled definition of PSB, Now I know it was wrong: Report of the parliamentary inquiry into support and sanctions for children who display harmful sexual behaviour (Ghani, 2016) suggests the following:

Harmful sexual behaviour is when children and young people (under 18) engage in sexual discussions or activities that are inappropriate for their age or stage of development, often with other individuals who they have power over by virtue of age, emotional maturity, gender, physical strength, or intellect and where the victim in this relationship has suffered a betrayal of trust. These activities can range from using sexually explicit words and phrases to full penetrative sex with other children or adults.

Prevalence

Establishing the prevalence of problem or harmful sexual behaviour across different age groups of children is challenging. Not only is there a lack of national data describing the extent of sexual assaults committed by teenagers, there is also a lack of studies – in particular, studies exploring PSB among children aged under 10 – dedicated to the topic, and there is reluctance among professionals and parents/caregivers to report incidences of PSB. Taken together, these dynamics make it difficult to clearly describe the scale of the problem in Australia, and existing figures may be underestimates (Boyd, & Bromfield, 2006).

However, there are some indicative figures. For example, the Australian Bureau of Statistics (ABS) calculated the offender rate for sexual offences for persons aged 10–19 as 69.3 per

100,000 people in the estimated resident population in 2014–15[3], which is higher than the rate in the general population. Based on ABS recorded crime data, children aged 10–17 were responsible for 1,617 of 7,525 (22 per cent) sexual offences committed in Australia in 2014–15.

Characteristics

Even though little epidemiological information is available for the population of children with PSB, the literature about individual characteristics of these youths has substantial variation in terms of their age, background experiences and motivations (Finkelhor et al., 2009). That said, Hackett et al. (2013) in a study of 700 children referred to service agencies in the United Kingdom for sexually harmful behaviours between 1992 and 2000 conclude that 97 per cent of the study population were male and 38 per cent identified as learning disabled. Based on data collected through the National Incident-Based Reporting System in the United States, Finkelhor et al. (2009) conclude that seven per cent of the perpetrators who committed sexual abuse in 2004 were females. Similar data for large samples of children with PSB is not available for Australian children but, given the general comparability between Australia and the United States and the United Kingdom, it is likely that males commit the bulk of child sexual abuse in Australia as well. Children and young people with HSB are a heterogeneous group, which means prevention and responses need to focus on the differences. Many factors have been identified, including exposure to sexually explicit material, relative ages, gender differences, abuse history, exposure to domestic violence, co-occurring diagnoses (mental health issues, or developmental or learning difficulties), experiences of living in out-of-home care and family disruptions. Perhaps most important among these is being sexually abused as a child, which has been strongly linked to children displaying sexually harmful behaviours, and to both juvenile and adult sexual offenders (Seto et al., 2010; Widom, & Ames, 1994; Forsman and Långström, 2012; Whittaker et al., 2008; Hanson and Morton-Bourgon, 2005).

Risk factors

The consequences of child sexual abuse, including child-to-child sexual abuse, can be serious and can have long-term negative impacts on the social and emotional health and wellbeing of survivors (Dube et al., 2005; Paras et al., 2009; Maniglio, 2009; Hillberg et al., 2011). At the same time, early sexually problematic and/or harmful sexual behaviour is one of several risk factors in a young person's life (for example, family instability, domestic violence, low income and low educational attainment) that threaten their developmental trajectory and increase the likelihood of enduring patterns of behaviour and conduct problems in later life (O'Brien, 2008).

3 Australian Bureau of Statistics, *Recorded Crime, Offenders, 2014–15,* cat no 4519.0, (Table 21), ABS, Canberra, 2015. Available at www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4519.02014-15?OpenDocument

This is particularly pertinent to populations of children living in out-of-home care and comparable institutional settings. In these settings, most of the children have complex social backgrounds and face a diverse range of life difficulties that may lead them to display challenging behaviours. Recent reports focusing on the quality of out-of-home care and incidences of child sexual abuse in these settings point to the need to systematically address PSB and child to child sexual abuse (see, for example, South et al., 2015; Commission for Children and Young People, 2015).

Structure of this report

This report includes a rapid evidence assessment of the extant literature, a description and assessment of Australian programs and services known to the Royal Commission and/or the authors, and a discussion of findings from both.

The review begins with a brief overview of the systematic methods used to obtain and synthesise the literature, followed by results for the three types of age and abuse-related groupings of children. These are:

1. studies of programs targeting young children aged 0–10 with PSB
2. studies of programs focusing on children aged 10–17 with HSB
3. studies of programs for children aged 10–17 who have sexually offended and received treatment through a criminal justice intervention.

Finally, the review contains a discussion of current best evidence for treating problem and abusive sexual behaviour, including evidence gaps, limitations, implications and how this information can be used in the future to treat the problem and harmful sexual behaviours of children in Australia.

Methodology

Eligibility criteria

The studies included in this review had to meet fairly stringent criteria to ensure that the available evidence supports statements made about the effectiveness of approaches or practices. Studies were included in this review if they described or evaluated a therapeutic treatment approach or practice involving children with PSB or HSB, or children who have sexually offended. Eligible studies are those that use a randomised or non-randomised design with a counterfactual or comparison condition. That is, studies were only included if their design supported a claim of effectiveness. Studies were restricted to those available in English and to those published after December 31, 1979. Peer-reviewed articles, theses, book chapters and grey literature were included to try to maximise the relevant evidence.

The full eligibility criteria for the review are as follows:

1. Does the study evaluate a therapeutic treatment approach or practice involving children with PSB or HSB, or children who have sexually offended?
    a. If the answer is 'no', is this a relevant review article, meta-analysis or systematic review?
2. Does the study involve children or youths in one or more of the following categories?
    a. Children aged 0–10 with PSB
    b. Children aged 10–17 with HSB
    c. Children aged 10–17 who have sexually offended and received treatment through a criminal justice intervention.
3. Does the study use a randomised or non-randomised controlled design; that is, does it have at least two groups?
    a. If the answer is 'yes', is it a randomised controlled trial (RCT)?
    b. If the answer is 'yes', is it a quasi-experimental design (QED)?

Search strategy

A multi-pronged search strategy was devised for the review to best capture research potentially relevant to the research questions. Two existing resources were mined: collected material of the project content expert (Dale Tolliday) and a large database of interventions collected at Vanderbilt University. In addition, a comprehensive search of relevant electronic databases was conducted, and studies located in systematic reviews and meta-analyses were examined.

Content expert solicitation

The content partner on the project, Dale Tolliday, has amassed a large library of literature on children with PSB or HSB, youth sex offenders and victims. This library includes research studies of relevant interventions, treatment manuals and other background information useful for the review. This library was mined for potentially relevant primary studies, systematic reviews and meta-analyses. In addition, a number of researchers and practitioners in the field were contacted to help locate potentially eligible studies.

Sexual offender meta-analysis database

Researchers at the Peabody Research Institute at Vanderbilt University have developed a large meta-analytic database of interventions for the treatment of juvenile delinquency. The database contains virtually every controlled study of delinquency interventions conducted in the past 40 years. The database was mined for studies of interventions for sexual offenders. Sixty-two eligible primary studies, systematic reviews, or meta-analyses of sex offender interventions were identified as potentially relevant for this review.

Database searches

The third element of the search strategy involved conducting a comprehensive search of nine electronic academic databases. Broad search terms (that is, titles and abstracts rather than subject headings and all derivations of keywords) associated with treatment for child PSB or HSB, and children who have sexually offended were used, plus terms to restrict the studies to those most likely to be relevant to the research questions. The full search strategy is included in Appendix A.

Additional search activities

The bibliographies of previous meta-analyses and literature reviews were reviewed for studies that met the eligibility criteria. In addition, the bibliographies of retrieved studies were examined for potentially eligible research reports. All included studies were entered into Google Scholar and any studies citing the target study were examined for potential eligibility.

Screening studies for eligibility

Two members of the research team at the Peabody Research Institute screened titles and abstracts from the electronic database search for relevance. Any title or abstract they deemed relevant or ambiguous was retrieved in full-text form and screened using the full set of eligibility criteria described above. A trained member of the research team at the Peabody Research Institute conducted an eligibility screening, and Dr Sandra Jo Wilson confirmed the results. A number of studies were reported in multiple journal articles or

reports. Reports that described the same evaluation study on the same sample were treated as a single study. Figure 1 below shows the number of reports and studies included in the review.

Coding and data extraction

All eligible studies were coded for the review using a standardised coding protocol. This protocol included text-based fields to describe the design, interventions, comparisons and samples in each eligible study. The study characteristics coding is reported fully for each eligible study in the results section. In addition to the study characteristics, all primary (decrease in problem or abusive sexual behaviour) and secondary outcomes (for example, a non-sexual offence) that were present were recorded if they had enough information to calculate effect sizes.

Quality assessment of studies

Once data was extracted, each study was assessed for quality using a loose interpretation of the Maryland Scientific Methods Scale (Sherman et al., 1997), a five-point scale that ranks designs (in ascending order) on their capacity to measure effectiveness. The five rankings are:

1. correlational study
2. pre- and post-test study
3. observational cohort with comparable group
4. quasi-experimental/controlled trial
5. randomised controlled trial.

Given the inclusion criteria ruled out rankings of 1 or 2, only rankings of 3, 4 and 5 were used and these were classified as low (3), medium (4) and high (5). Importantly, this measure is fundamentally unidimensional and does not assess whether the design was followed properly. The more detailed risk of bias tables (see, for example, Guyatt et al., 2011) were not completed for this review due to time and financial constraints and the fact that current versions suffer limitations with respect to assessing non-experimental studies. As a compromise, the Maryland scale was used to initially classify each study (as low, medium or high) and the score was lowered if there were substantial methodological problems such as high attrition rates or non-equivalence at baseline.

Understanding effect sizes

Effect sizes are standardised ways to measure the strength of findings that can be compared and quantitatively tested across studies. In other words, instead of relying simply on a measure of significance (that is, $p<.05$), which only measures whether an effect is present,

an effect size tells you whether the treatment effect (if significant) is small or large. There are different forms of effect sizes that correspond to different types of outcome measures.

For continuously measured outcomes (for example, rating scales), the standardised mean difference (SMD) effect size is used. Positive effect sizes indicate that the primary intervention group was more successful, negative effect sizes indicate that the counterfactual or control condition was more successful. Most of the effect sizes reported in this review of reviews refer to measures of SMD (including Cohen's d and Hedges's g). For these types of effect sizes, Cohen (1988) developed a rubric for quickly interpreting their size: small effect: 0.2–0.49; medium effect: 0.5–0.79; and large effect: 0.80+.

The odds ratio effect size is used for binary outcomes (for example, post-traumatic stress disorder is or is not present). Odds ratios are approximations of relative risk, which describe the relative likelihood that one group (for example, the group that received the treatment) will experience an outcome compared with another group (for example, the group that received services as usual). Odds ratios greater than 1 indicate more positive outcomes for the primary intervention group. Odds ratios less than 1 indicate that the counterfactual condition exhibited better outcomes. The larger the odds ratio for positive effects (that is, greater than 1), the greater the positive effect. The smaller the odds ratio for negative effects (that is, less than 1) the greater the negative or harmful effect.

Meta-analysis methods

For continuously measured outcomes, the SMD effect size was used. The odds ratio effect size was used for binary outcomes (for example, sexual offending did or did not occur). SMD effect sizes were corrected for small sample bias and, where possible, adjusted for baseline differences by subtracting the pre-test effect size from the post-test effect size. Sensitivity analyses were performed to determine whether this practice produced any bias in the results. SMD effect sizes were all coded so that positive effect sizes indicate that the primary intervention group was more successful; negative effect sizes indicate that the counterfactual or control condition was more successful.

Several studies reported more than one outcome in the same outcome domain (for example, two different measures of externalising behaviour). Because only a few studies reported multiples in any given analysis, the use of robust standard errors or multi-level meta-analysis was not possible. Therefore, the multiples were averaged within the study.

Results

The initial search generated 2,259 citations, and 210 of these met abstract screening criteria for potential inclusion. All but five of these studies were located and the full-text versions were screened for eligibility.

A total of 27 (n=27) controlled studies of relevant programs (contained in 41 reports) were eligible for review and coded using the data extraction scheme described above. In the results below, each study is identified by a 'first author and year' tag. The reference list (Appendix B) provides full bibliographic information for all studies included in the review as well as all excluded studies that were subjected to full-text screening (n=169). For studies that were reported in multiple articles or reports, all articles were reviewed together as a single study (author and year tags for multiple studies of the same population and intervention list a single author and year).

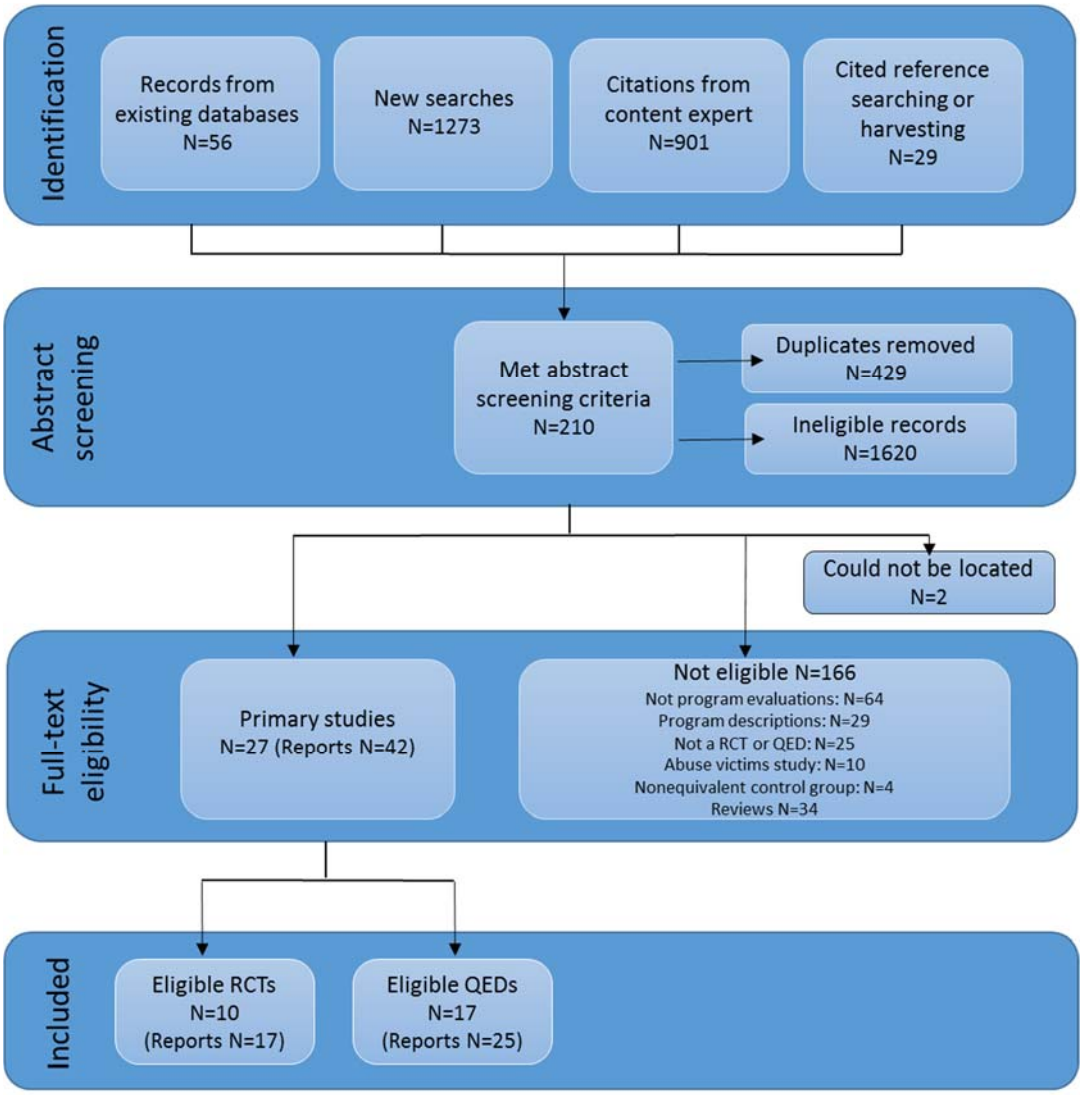

Figure 1. Flow of articles through the review

The 27 eligible studies of relevant programs have been separated into three groups to reflect the three populations of interest to the Royal Commission. These groups were: children aged 0–10 with PSB, children aged 10–17 with HSB, and children aged 10–17 who have sexually offended and received treatment through a criminal justice intervention. The results for each set of studies are reported separately below.

Programs for children aged 0–10 with problem sexual behaviour

Two studies of programs for children aged 0–10 with PSB were eligible for the review (Bonner, Walker, & Berliner, 1999; Pithers, Gray, Busconi, & Houchens, 1998). A follow-up to the Bonner et al. (1999) study was reported in Carpentier, Silovsky and Chaffin (2006). Information from both study reports is included in the tables below. Both studies were randomised controlled trials with children aged 6–12 who were exhibiting PSB. They are included in this age grouping since the mean age of children is less than 10 years. The Bonner et al. (1999) study compared CBT to DPT. The Pithers et al. (1998) study compared a relapse prevention program to an expressive therapy (ET) intervention. Table 1 shows the characteristics for these two studies.

Table 1. Studies of programs for children aged 0–10 with problem sexual behaviour

	Bonner (1999)	**Pithers (1998)**
Design	RCT	RCT
Contrast	Cognitive behaviour therapy (CBT, n=51) versus dynamic play treatment (DPT, n=59)	Relapse prevention (RP, n=64) versus expressive therapy (ET, n=63)
Location	US	Australia
Age	6–12 (mean=8.8)	6–12 (mean=8.8)
Sample characteristics	CBT group: 63% male, 84% white. DPT group: 60% male, 83% white Overall, about 59% of the children had experienced some form of abuse or neglect and 48% had been sexually abused	65% male. 86% of the sample had been sexually maltreated, 33% had been emotionally maltreated and 43% had been physically maltreated
Intervention	CBT for children involved 12 highly structured sessions using a treatment manual and focusing on acknowledging inappropriate sexual behaviour; defining and learning sexual behaviour rules; improving impulse control; abuse prevention; and sex education. Sessions used a teaching–learning format and handout materials. Caregivers also participated in CBT-based groups	A modified version of RP was implemented, with a primary goal of identifying and addressing precursors to acting out sexually. The program was highly structured and described as cognitively oriented. The treatment included a prevention team of individuals who were selected from the families' everyday lives to support adopting a lifestyle that prevents abuse
Format	Children attended 12 weekly one-hour group sessions; parents or caregivers attended 12 one-hour group sessions held separately from their children	Parents or caregivers and children attended treatment sessions in parallel groups in both types of treatment (RP and ET). Each consisted of 32 weeks of treatment, although outcomes reported in this

	Bonner (1999)	Pithers (1998)
		study were collected after only 16 weeks of treatment. No information was provided on length or frequency of sessions
Implementability	It was a highly structured, manualised program. Sessions were conducted at the local hospital by male/female dyads of doctoral psychology students or PhD-level psychologists. Therapists received weekly supervision. The researcher was the program developer	No information about therapists' background or training was provided. It was unclear whether either program was manualised. The first author appeared to be one of the developers of the RP
Implementation outcomes	Participants had to attend nine of the 12 sessions to undergo the final assessment; 63% met this criterion. (59% of the DPT group and 67% of the CBT group)	No information was provided
Comparison	DPT (manualised but less structured) involved 12 weekly hour-long group sessions. It used common play therapy techniques (for example, drawing) and discussion to address themes similar to those used in the CBT intervention (for example, boundaries, self-control and sex education). Sessions were conducted at the local hospital by male/female dyads who were doctoral psychology students or PhD-level psychologists. Caregivers also participated in DPT-based groups	The ET was developed by a panel of national experts to treat children with PSB in the early 1990s. ET has a less structured approach than RP and uses metaphor, symbols, and creative rituals and activities to indirectly introduce concepts. Rather than teaching coping strategies in a structured way, this approach facilitates the gradual development of coping strategies through input from clients
Internal validity	RCT. Medium quality. At baseline, the groups had similar demographics and pre-tests. However, the attrition rate was relatively high and only those who attended nine or more of the 12 sessions were included in impact analyses, which degrades the benefits of randomisation	RCT. Low quality. No information about baseline similarities between the groups was provided. They had a 75% retention rate at 16-week follow-up

Table 2 shows the focal outcomes and effect sizes for the two studies of programs for children with PSB. No outcomes reached statistical significance, though the sample sizes in both studies were relatively small and may have been underpowered to detect differences.

Table 2. Study findings: Programs for children aged 0–10 with problem sexual behaviour

Study	Final sample size and attrition (% loss)	Problem sexual behaviour outcomes	Effect sizes (confidence intervals)	Non-problem sexual behaviour outcomes	Effect sizes (confidence intervals)
Bonner (1999) CBT versus DPT	CBT n=25 (51%) DPT n=30 (49%)	• Sex offences (516 weeks) • Problem sexual behaviour	OR=6.89 [0.82, 57.63] SMD=-0.02 [-0.53, 0.50]	• Externalising • Problem behaviour • Internalising	SMD=-0.07 [-0.60, 0.46] SMD=0.04 [-0.49, 0.57] SMD=-0.02 [-0.56, 0.51]
Pithers (1998) RP versus ET	n=93 (27%)	• Problem sexual behaviour	SMD=0.31 [-0.10, 0.71]	• None	

Table notes: Follow-up period is immediately following treatment unless otherwise noted. CBT=cognitive behaviour therapy; DPT=dynamic play therapy; RP=relapse prevention; ET=expressive therapy; OR=odds ratio; SMD=standardised mean difference. Effect sizes that are statistically significant at the p<.05 level (if any) are noted with an asterisk *.

For SMD, Cohen (1988) developed a rubric for quickly interpreting size: small effect: 0.2–0.49; medium effect: 0.5–0.79; and large effect: 0.80+.

For OR, results greater than 1 indicate more positive outcomes and those less than 1 indicate negative outcomes. The further the result is from 1.0 (i.e., between 1 and ∞ if positive and between 0 and 1 if negative), the larger the effect.

Programs for children aged 10–17 with harmful sexual behaviour

Only one study for children aged 10–17 with HSB was eligible for the review (Laing et al., 2014 – related presentations Tolliday 2009; 2011; 2012). The information in the study allowed for the generation of outcomes and effect sizes for three major comparison/control conditions: (1) youths who were enrolled in the program but withdrew before completion (32 per cent of the treatment group and 16 per cent of the overall sample); (2) youths who completed the program (68 per cent of the treatment group and 34 per cent of the overall sample); and (3) youths who were referred to the program but could not join because it was full (50 per cent of the overall sample). The risk of bias for comparisons varies depending on which of the three conditions is used. Comparing withdrawers to completers poses a high risk of bias. Comparing completers to matched referrals[4] poses a medium risk of bias. Comparing all youths who received treatment (combination of completers and withdrawers)

4 All referrals to the program who did not receive treatment over the five-year study period were matched to a youth who received treatment on the following six criteria (Laing et al., 2014, p. 41): age of young person at referral; gender of young person; gender of the index victim; relationship between the young person and the index victim (sibling, other close relative, other); nature of index offence (penetration, no penetration); and living circumstances at referral (family/relative or non-family/relative care).

to the matched referral group poses a low risk of bias. Due to the limitations of available information, effect sizes could not be generated for all outcomes.

Table 3 shows the characteristics for the one study in this category and Table 4 shows the outcomes and effect sizes.

Table 3. Studies of programs for children aged 10–17 with harmful sexual behaviour

	Laing et al. (2014)
Design	QED
Contrast(s)	1. New Street program completers versus withdrawals versus referrals who did not receive the service[5] 2. New Street program completers versus matched comparisons 3. New Street withdrawals versus matched comparisons
Location	Australia
Age	10–17
Sample characteristics	Sexually harmful, non-adjudicated adolescents: 90% male; most were aged 12–15. 75% lived with family; 25% lived in non-relative/non-family care. Most offences committed by these adolescents involved siblings or a close relative (n=60); For 52 offences, the victim was female, in 33 cases the victim was male; in 15 cases the youth had offended against both males and females. 60% of all offences involved penetration.
Intervention	The New Street Adolescent Service is a multi-agency, community-based program that provides age-appropriate treatment that is centred on individual, family and contextual frameworks. The program emphasises the importance of personal responsibility. It also focuses on reconciliation with the victim, family and community members. Individual, group and family therapy are used
Format	Therapy lasts around two years. The first year includes an assessment and intensive intervention phases
Implementability	Information about background and training of providers is not available. It is a routine practice program
Implementation outcomes	Implementation fidelity was not reported
Comparison(s)	Control 'referrals' represents to children and youth who were referred for treatment but could not attend due to limited space in the program. Members of the treatment group were retrospectively matched to these children and youth if they met the criteria (see prior footnote). 'Withdrawals' refers to those who were accepted into the program but withdrew before completing it
Internal validity	Retrospective QED

[5] Laing et al. (2014) conducted a three group analysis to determine group differences, noting that this comparison was not optimal (I.e., posed a high risk of bias) because it increased the risk of incorrectly identifying a positive effect. We used information contained in Laing et al.'s (2014) paper to compare differences for all New Street participants (completers + withdrawers; n=50) versus referrals (n=50). This comparison poses a lower risk of bias.

	Laing et al. (2014)
	Matched referral group – medium quality Withdrawal group – low quality

Table 4. Outcomes and effect sizes: Studies of programs for children aged 10–17 with harmful sexual behaviour

Study	Final sample size and attrition (% loss)	Problem sexual behaviour outcomes	Effect sizes (confidence intervals)	Non-problem sexual behaviour outcomes	Effect sizes (confidence intervals)
Laing et al. (2014) New Street versus matched comparisons	New Street n=50 (0%) Comparison n=50 (n.a.)	Sex offence charge Sex offence report	OR=0.78 [0.16, 3.67] OR=0.88 [0.29, 2.65]	Violent criminal charge Violent report Non-violent criminal charge Non-violent report	OR=1.94 [0.74, 5.08] OR=1.42 [0.63, 3.21] OR=1.34 [0.58, 3.12] OR=1.08 [0.49, 2.38]
Laing et al. (2014) New Street completers versus matched comparisons[a]	Completers n=34 (32%) Comparison n=34 (n.a.)	Sex offence charge Sex offence report	NR NS[†]	Violent criminal charge Violent report Non-violent criminal charge Non-violent report	OR=4.30* [1.10, 17.4] OR=3.90* [1.30, 11.2] OR=2.50* [0.80, 7.80] OR=2.10* [0.80, 5.50]
Laing et al. (2014) New Street withdrawals versus matched comparisons[a]	Withdrawals n=16 (n.a.) Comparison n=16 (n.a.)	Sex offence charge Sex offence report	NR OR=0.11* [0.01, 1.11][b]	Violent criminal charge Violent report Non-violent criminal charge Non-violent report	NS[†] NS[†] NS[†] NR

Table notes: Follow-up period for all effects reported in the table is around 260 weeks. Effect sizes that are statistically significant at the p<.05 level (if any) are noted with an asterisk (*).* Significance testing was done using chi-squared tests. However, the confidence intervals for three of the five measures of effect (OR) contain 1.0, meaning the measure of effect is not significant. While confusing, these are two different constructs (significance and effect size). In this instance, our interpretation is that the contrasts being tested are different from one another if p<0.05 (that is, the two groups are different) but the size of the effect (in this instance, OR) is not significant. It is likely that the analysis is substantially underpowered and there is a great deal of variability in outcomes, making the confidence intervals very wide and estimates of effect somewhat suspect.

OR: odds ratio
NR: not reported
NS: not statistically significant

Odds ratios less than 1 favour the comparison group; odds ratios greater than 1 favour the intervention group.
For OR, results greater than 1 indicate more positive outcomes, those less than 1 indicate negative outcomes. The further the result is from 1.0 (that is, between 1 and ∞ if positive and between 0 and 1 if negative), the larger the effect.

[a] The study report did not provide full contingency tables for any outcomes for the completers and their matched comparisons or the withdrawals and their matched comparisons. All odds ratios, confidence intervals and statistical significance indicators shown in the table for these contrasts were reported by the study authors and could not be confirmed by the review team.

[b] The odds ratio and confidence interval for this impact estimate were reported by the study authors as 9.0 [0.9, 86.5] but the authors note (p. 43) that the effect favoured the comparison group. Therefore, the odds ratio in the table above is inverted to reflect the fact that the comparison group experienced lower recidivism than the withdrawal group.

[†] Study authors reported that this result was not statistically significant; insufficient information was reported to compute the odds ratio and confidence interval.

Programs for children aged 10–17 who have sexually offended and received treatment through a criminal justice intervention

Twenty-four studies of programs for youth sex offenders were eligible for the review. The following tables show the study characteristics for these studies. Due to the large number of studies and amount of corresponding information, data is distributed across three tables:

- Tables 5 lists the key features of studies of programs for this target population.
- Table 6 summarises characteristics of study design and available implementation data for each study.
- Table 7 provides an overview of outcomes, sample and effect sizes for all studies.

Table 5. Key features: Studies of programs for children aged 10–17 who sexually offended and were treated using a criminal justice intervention

Study	Design/comparison	Location	Age range	Sample characteristics	Intervention	Comparison(s)
Apsche (2005)	Randomised controlled trial (RCT) Mode Deactivation Therapy (MDT) versus cognitive behaviour therapy (CBT) versus social skills training (SST)	US	MDT=16.5 CBT=16.5 SST=16.1	Males with documented incidents of physical and sexual aggression living in an inpatient treatment facility. All had been diagnosed with a conduct and/or personality disorder. Ethnicity: MDT: 15 black, 5 white, 1 Hispanic CBT: 14 black, 4 white, 1 Hispanic SST: 14 black, 4 white, 2 Hispanic	MDT aims to 'deactivate' (disrupt) automatic problem responses ('modes') to maladaptive situations (schemas). The main principle of MDT is validation and legitimisation of core beliefs, which are then 'balanced' through therapy to deactivate inappropriate sexual and aggressive responses. It combines adapted elements from CBT, dialectical behaviour therapy, and functional analytic therapy. Steps include assessment, case conceptualisation, deactivation, validation, mindfulness, completion of a conglomerate of beliefs and behaviours, family MDT and a final examination	CBT: A curriculum manual (*The Thought Change System* by Apsche) was used to modify CBT for youths with psychosexual and aggressive/violent problems. Treatment focused on redirecting negative and distorted thoughts; other components included sexual and aggressive patterns and beliefs, mental health, substance abuse, taking responsibility and victim empathy. Recording and evaluation techniques were used. SST emphasised appropriate behaviours and target skills through role-play, modelling, practice, and shaping and fading procedures. Training was taught and evaluated by trained staff members and therapists
Apsche (2008)	RCT MDT family therapy versus Treatment as usual (TAU)	US	Not reported	Child services or the courts mandated intervention group participants for treatment. No other demographic details were reported. The sample is not described specifically as a sexual offender sample, but sexually aggressive behaviours were	MDT was a manualised individual- and family-based program, which used a combination of techniques from other approaches, including behavioural, cognitive and dialectical approaches. Each participant's treatment plan was individualised after assessments and an 'exhaustive case conceptualisation' were conducted. Therapy focused on	This group was also mandated to receive treatment. Families in this condition received various forms of treatment/therapies provided by licensed psychologists in the area

Study	Design/comparison	Location	Age range	Sample characteristics	Intervention	Comparison(s)
				recorded pre- and post-intervention, suggesting that at least some of the sample were exhibiting PSB at the time of referral	validation of thoughts and beliefs, clarification of these beliefs and redirection of the belief system	
Borduin (1990)	RCT Multisystemic Therapy (MST) versus individual therapy	US	9–17.5 (mean=14.9)	Male sex offenders who had been sentenced to secure custody. Initial offences included rape, sexual assault, exhibitionism, molestation and sodomy	Treatment focused on all systems/ecologies linked to the youth's sexual behaviours, including family and peer relationships, and school. It also focused on the adolescent's own cognitive processes (denial, distortions and empathy). The treatment manual outlines 3 adaptations: addressing denial, creating a safety plan, and promoting appropriate peer interactions. Emphasis was also placed on the skills of caregivers	Control group participants received approx. 45 hours of individual counselling by masters-level mental health professionals. Topics of discussion included personal, family and academic issues
Borduin (2001)	RCT MST versus usual community services	US	14 (SD=1.9)	Youths arrested for a sexual offence who were at high risk of reoffending and the juvenile court referred them for treatment Total sample: 95.8% male; 72.9% white, 27.1% black; 31.3% lived with a single parent; 54.8% were low SES Youths had an average of 4.33 prior arrests (1.62	Treatment was manualised but individualised for each participant. MST addresses problem behaviours across multiple ecologies/systems relating to sexual behaviour. Parents/caregivers were taught how to reduce denial, increase effective parenting, and promote affection and communication. Teachers and family members participated by creating safety plans to prevent relapse. Parents/caregivers (supported by therapists) encouraged appropriate relationships with	Control group participants received non-manualised CBT and individual treatment sessions (usual services). Treatment focused on accepting responsibility, altering cognitions, learning social skills, developing victim empathy, and relapse prevention. Counsellors hired by the court conducted 90-minute group treatments twice weekly. A different therapist conducted individual 60- to 90-minute sessions weekly. Youths also kept journals to review during individual sessions and to

Study	Design/comparison	Location	Age range	Sample characteristics	Intervention	Comparison(s)
				sexual felonies, 2.71 non-sexual felonies)	peers and monitored/promoted improved school performance. Individual interventions targeted social skills, and perspectives, beliefs and attitudes to sexual offending	reinforce concepts learnt in group sessions. Most sessions were office-based, and there was more focus on the individual than any other ecology Mean length of services: 30.1 weeks (SD: 18; range: 17 to 89.9)
Boswell (2002)	Quasi-experimental design (QED) Former residents of McGregor Hall versus referrals only	UK	16–19 at time of admission	All male. Majority white (cannot tell breakdown between sex offenders versus non-sex offenders). In treatment: 4 reported history of physical abuse. 2 of these 4 also reported history of sexual abuse	McGregor Hall (pseudonym) is a residential 'community' that uses milieu therapy, ongoing assessment processes and individualised treatment plans. Treatment includes counselling, group sessions, education, work experience, community meetings, and creative and recreational activities. The program emphasises healthy relationships (family and otherwise), personal responsibility, understanding causes and risks of inappropriate sexual behaviours, independence, relapse prevention, and self-esteem. McGregor Hall was part of the Quaker community, though the program was mainly non-religious	Youths who had been referred for treatment but did not enter the program
Byrne (1999)	QED Healthy Lifestyles completers versus Healthy Lifestyles partial completers (education	Canada	9–17.5 (mean=14.9)	Male sex offenders who had been sentenced to secure custody. Treatment group had 1.6 sex charges, 1.8 victims, and 7.3 total prior	Healthy Lifestyles is a locally developed program delivered in a residential youth centre that employs cognitive behavioural principles and focuses on relapse prevention. An assessment is	1 control group completed the education component of the program only. This portion included 8 sessions on human anatomy, reproduction, contraception, STDs, AIDS,

Study	Design/comparison	Location	Age range	Sample characteristics	Intervention	Comparison(s)
	component only) versus no treatment			offences. Age at first offence: 14.9. Education-only group were aged 13–17.8 (mean: 15.8), had 2.7 sex charges, 2.7 victims and 4.9 total prior offences. Age at first offence: 15.8. No treatment group were aged 13–17.7 (mean: 14.9), had 1.6 sex charges, 1.1 victims and 6.3 total prior offences Age at first offence: 14.9	used to develop individualised treatment plans. The program includes an education component with 8 sessions on human anatomy, reproduction, contraception, STDs, AIDS, sexuality and love, sexual expression and relationships. 19 sessions followed and included lessons on coercion and consent, laws, setting goals, disclosure, victim empathy, preconditions for abuse, cycle of abuse and preventing further abuse. Treatment included 3 individual counselling sessions based on the personal needs of the adolescent	sexuality and love, sexual expression and relationships. The second control group was not offered the program but was serving time in the same custodial facility
Cooper (2000)	QED Thunder Bay Adolescent Sex Offender Program (TBASOP) completers versus non-completers versus assessment only	Canada	12–16 (mean=14.5)	Adolescent sex offenders the youth court mandated should go into treatment. Completers: 39 males, 2 females. 70.7% reported a history of abuse. Overall risk for recidivism: 3 high risk, 11 moderate risk and 10 low risk Non-completers: 23 males. 73.9% reported a history of abuse. Overall risk for recidivism: 1 very high	TBASOP, sponsored by the Children's Mental Health, Child Protective Services, probation agencies and an offender-specific treatment program, used mainly a CBT approach combined with supervision and support. Case conferences were held every 4 to 6 weeks to assess treatment plans and modify as needed. Group, individual and family therapy were conducted simultaneously throughout treatment	Non-completers were youths who began treatment but did not graduate or complete at least 10 months of the program due to suspension from treatment, completion of probation, moving or transfer to another program. They participated in treatment for an average of 6 months Only the second control group were assessed. They did not receive any treatment specific to sex offending, though they may or may not have received other forms of treatment. These youths did not enter treatment because they were assessed before

Study	Design/comparison	Location	Age range	Sample characteristics	Intervention	Comparison(s)
				risk, 4 high risk and 4 moderate risk Assessment only: 25 males		TBASOP was developed or because there were no programs in their area
Erickson (2008)	QED Assignment was based upon the state region where the youth resided Functional family therapy (FFT) versus Treatment as usual for juvenile sexual offenders (TAU-JSO)	US	12–18 (mean=15.3)	Adolescents sentenced for a felony sexual offence who were sent to a secure facility before receiving treatment during their 24-month parole period FFT: 29 white, 2 black, 3 Hispanic, 5 Asian/Pacific Islander, 1 Native American; 39 males, 1 female Victim ages: 33 children, 6 peers/adults, 1 unknown TAU-JSO: 32 white, 5 black, 1 Hispanic; 38 males, 0 females Victim ages: 29 children, 4 peers/adults, 5 unknown Full sample: age of first offence: 13 years (SD: 1.43)	FFT involves 3 phases. First: engagement, motivation, goal-building, alliance-building (between family members and with therapist), negativity and blame reduction, developing focus/hope/expectations, and reframing. Second: activities that foster behavioural change (individual and family), communication, problem-solving and conflict management, both in treatment and at home. Third: generalisation of changes to other realms of family functioning, relapse prevention and support through necessary community resources. Typical parole services (meeting with parole officer, lie detector testing, etc.) were also enforced	Traditional services (as standardised by state protocol) included psychoeducational and cognitive behavioural approaches. The process included assessment, treatment and transition. Curriculum focused on taking responsibility, victim empathy, sex education/positive sexuality, family education/support, social skills training, anger management and relapse prevention. Treatment may have included PTSD/past abuse counselling and/or an arousal component if needed. Weekly or biweekly individual (60 minutes) and group (90 minutes) therapies were typically provided in the therapists' offices. Treatment length was usually the entire parole period (2 years). Typical parole services were also enforced

Study	Design/comparison	Location	Age range	Sample characteristics	Intervention	Comparison(s)
				Criminal history: 67 had only sexual felony convictions; 11 had both sexual and non-sexual felony convictions		
Gillis (2010)	Matched group design, individual level, based on age of first arrest, severity of first offence, and race LEGACY versus youth development centers versus other specialised centres	US	12–16	Participants were male youths the Georgia Department of Juvenile Justice committed to the state for sexual offences Average age at first offence: 13.75 years (SD: 1.43); 33 were black and 62 were white in each of the groups	Project Adventure's LEGACY is a residential, adventure-based behaviour management program that combines adventure activities (e.g. ropes courses, camping and outdoor activities), counselling, classroom discussion and using workbooks. The programs goals include identifying and eliminating inappropriate thoughts and behaviours, fostering positive behaviours, promoting responsibility, developing appropriate relationships, developing self-control, and improving developmental, social and living skills. Placement in new environments reinforced cooperation, problem-solving and stress management. The use of consequences and rewards for behaviours were also emphasised. The program involved a 4-level system that required participants to develop a Full Value Contract and progress through each level to the end	2 other programs with similar populations were used as comparison groups Youth Development Centers: lock-up facilities operated by the Georgia Department of Juvenile Justice Other specialised Centres: these included hospitals and other residential treatment centres (Twin Cedars Bradfield Center, which works with severely disturbed youths; and the EXCEL program at Inner Harbour, for court-ordered youths) operated by trained/licensed counsellors or social workers

Study	Design/comparison	Location	Age range	Sample characteristics	Intervention	Comparison(s)
Graves (1992)	RCT Adolescent Social Skills Effectiveness Training (ASSET) program versus traditional therapy	US	12–19; ASSET group mean age=15.7; control group mean age=15.1	Adolescent males referred to the Intermountain Sexual Abuse Treatment (ISAT) Center for sexual offences, including rape, attempted assault and child molestation. The sample was Caucasian and Hispanic	The treatment group received ASSET, a pre-packaged social skills training program, as part of comprehensive outpatient treatment. The program uses modelling, rehearsal, encouragement and homework assignments to teach eight social skills (giving positive feedback, giving negative feedback, accepting negative feedback, resisting peer pressure, problem solving, negotiation, following instructions and conversations)	The control group received traditional group therapy as an outpatient at the ISAT centre
Guarino-Ghezzi (1998)	QED Assignment to the 2 groups was determined by the Department of Youth Services (DYS) Specialised sex offender treatment versus non-specialised treatment	US	Not provided	Male juvenile sex offenders committed to the Department of Youth Services: 53.3% white, 16% black, 17.3% Hispanic, 5.3% other, 8% unknown. 26.7% had a history of sex offending, 61.3% did not, 2.7% were suspected of offending and 9.3% were unknown. 43% reported being exposed to physical abuse and 31% reported being sexually abused Prior treatment: 18.7% had attended sex offender counselling, 34.7% had been placed on sex offender probation, 42.7% were	Individual treatments differed by adolescent; no single format was used for all. Groups focused on issues relating to sexual abuse such as denial, victim empathy, motives and antecedents, and on cognitive restructuring, interpersonal skills, stress management, relapse prevention, education, drug and alcohol treatment, and life skills. An example program, the Willow School, provided 6 to 7 hours of daily group therapy that focused on sexual abuse. Youths remained in this secure facility for a year or more	Mean length of non-specialised treatment: 7.1 months. Average of 4.41 group sessions throughout program placement. The Birch School was an example of a non-specialised secure facility program that focused on sex education, life skills and substance use, rather than the youth's offence. Birch School participants spent 2 hours in group therapy each day and remain in the facility for around 6–8 months

Study	Design/comparison	Location	Age range	Sample characteristics	Intervention	Comparison(s)
				involved with social services, and 14.7% had been involved with DYS		
Hains* (1986)	QED Psychoeducational program vs waitlist control	US	12–19 (mean=15.7)	Adolescent males referred to the Intermountain Sexual Abuse Treatment (ISAT) Center for sexual offences, including rape, attempted assault and child molestation. The sample was Caucasian and Hispanic	The psychoeducational program included teaching sexual knowledge, improving psychological attitudes, training in problem-solving and in moral judgment. Three sessions on sexual knowledge included instruction on anatomy and physiology, sexual intercourse, birth control and conception. Four sessions focused on improving psychological attitudes towards sex through group discussions centred on positive and adaptive attitudes. Problem-solving skills were taught during 2 sessions by presenting youth-oriented problem situations to the group and having the group generate multiple solutions. Lastly, 2 sessions focused on moral judgment through the presentation of moral dilemmas	The waiting list control group received the psychoeducational program after the treatment group had completed the program
Lab (1993)	QED Youths were assigned based on a risk assessment score, interviews with probation staff members and availability of space	US	Not provided (mean=14.2)	100% male; 67% white, 30% black, 2% Hispanic; mean number of prior court appearances for sex offences: 0.16. Participants with prior DYS stays: 70%. Average risk score (from 1 (low risk) to 3 (high risk)): 1.9	Established by the juvenile court system, the 'psycho-socio-educational' program involved 20 meetings (peer, family and individual) covering sex offender-targeted issues: sex education and attitudes, personal feelings, anger management, prevention plans,	Youths who participated in any other program available to juvenile sex offenders before the establishment of the Sexual Offender Treatment program, including Department of Youth Services commitments and community-based programs.

Study	Design/comparison	Location	Age range	Sample characteristics	Intervention	Comparison(s)
	Sexual offender treatment program versus other programs				coping skills and acceptance of consequences for one's actions. No further information about treatment contents or procedures was provided	These programs were not specific to sex offenders
Lambie (2007)	QED Treatment completers versus treatment dropouts versus no treatment	New Zealand	10–18 (mean=14.3)	Identified to be at medium to high risk of reoffending. 152 European, 42 Maori, 12 Pacific Islander, 11 other/unknown. Mean number of victims: 3.4	Three community programs were evaluated as 1 group. 2 of the programs (SAFE Youth Programme, STOP Adolescent Programme) used a psychoeducational and cognitive-behavioural approach that included individual, group and family therapy, and social work services. The third program, WellStop, used the Good Way model, which is 'a strengths-based model using a narrative approach'. Also included: creative and recreational activities, system reviews and multisystemic involvement. All 3 programs offered special services for females, children (aged 12 and younger) and youths with special needs who were sexually harmful. Culturally appropriate programs were also available for Maori children. SAFE and STOP offer wilderness and adventure therapy components. Issues addressed victim empathy, the offending cycle, relapse prevention, anger management,	Dropouts (began treatment but did not complete the program for reasons including family/client refusal/withdrawal; agency withdrew referral or funding; referred to other provider; moved; client imprisoned; termination due to behaviour/poor attendance/poor progress). Assessment/referral-only group never began treatment

Study	Design/comparison	Location	Age range	Sample characteristics	Intervention	Comparison(s)
					communication and social skills training	
Letourneau (2009)	RCT MST versus TAU	US	11–17 (mean=14.6)	Sex offending youths who were ordered to attend treatment: aggravated criminal sexual assault (31%), criminal sexual assault (18%), aggravated criminal sexual abuse (15%), criminal sexual abuse (24%) and other sexual offences (12%). 3 females. Ethnicity: black (54%) and white (44%). SES was relatively low	Principles used in traditional MST were adapted for juvenile sex offenders. Sessions focused on intrapersonal, familial and extrafamilial issues that are related to problem sexual behaviours. 3 additional adaptations were included in therapy sessions: (1) focus on attenuating denial about the offence; (2) creating a safety plan to prevent future offences; and (3) promoting strategies for positive peer interactions	Groups of 8 to 10 youths met weekly for an hour and received services the probation department commonly ordered for juvenile sex offenders. Sessions were typically based on cognitive-behavioural themes and focused on individual behavioural issues
Levit (2015)	QED Matched comparison group STRIVE Treatment Program completers versus non-completers/non-participants	US	Mean=15.9	Male sex offenders referred to treatment by the court. 40.7% black, 20.9% white, 27.9% Latino, 2.3% Asian, 4.7% biracial/multiracial and 3.5% other. Average age at time of offence: 14.9 years. Age at first arrest: 14.22 years. 16.3% reported having a history of sexual abuse; 9.3% reported a history of physical abuse; 38.4% reported 'other trauma'	STRIVE (originally the Adolescent Sex Offender Treatment Program: ASOTP) is a community-based public mental health treatment program that collaborates with the juvenile justice and behavioural healthcare systems to prevent recidivism. The treatment plan includes evaluation and risk assessment, psychological treatment, including CBT, and relapse prevention. Topics addressed include communication, emotions and feelings, sexuality, self-esteem, family, decision-making, socialisation, sexual abuse dynamics, coping skills, relapse prevention skills, responsibility	Group consisted of youths who either dropped out of the program before completion or who were recommended to the program but did not participate

Study	Design/comparison	Location	Age range	Sample characteristics	Intervention	Comparison(s)
					for behaviour, cognitive distortions, victim empathy and goal setting. Youths must earn points through participation and homework to graduate from treatment	
Mathe (2007)	RCT Sex offender program versus waitlist control	South Africa	Not available	Adolescent males who sexually offended a female older than 12 years. 90% had dropped out of school. 90% had little or no contact with their fathers	The program was based on a cognitive-behavioural perspective designed to influence positive change in the client's thinking, feelings, beliefs and knowledge. Session topics where broken into modules: Cognitive Restructuring and Re-education (casual factors, myths and stereotypes, beliefs and perceptions, victim empathy and thinking skills); Social & Life Skills (self-concept, assertiveness, problem solving, stress and anger management and communication); Relationships & Sexuality (human rights and values, relationships with women and searching for closeness, and sexuality and sex education); and Preparation for Release (substance abuse, peer pressure, employment and/or healthy social activities, cost of crime, support systems and after-care services). Treatment consisted of group discussions, homework, assignments, audio-visual materials and a presentation by each subject	Comparison subjects lived in the same secure facility as the treatment group but did not participate in any of the program components. It appears that these youths were placed on a waiting list to receive the treatment after the study was completed

Study	Design/comparison	Location	Age range	Sample characteristics	Intervention	Comparison(s)
Morton-Bourgon (2005)	QED Treatment with family involvement versus treatment without family involvement	Canada	15.4	126 males and 1 female. History of abuse: 33% sexual, 48% physical and 51% reported no history of abuse. 59% lived with their family, 20% lived in temporary placement and 21% were permanently separated from their family. 55% of youths' families were intact (dual parent)	Treatment was specific to sex offenders, involving the family of the offender. Specialised services for sexually harmful adolescents were provided by 15 agencies across Canada. The study compared youths who received specialised services with a family component to youths who received specialised services without a family component	Treatment specific to sex offenders, not involving the family of the offender
Piliero (1994)	RCT Cognitive restructuring (covert sensitisation, masturbatory satiation, and victim empathy training) versus sex education program	US	13–18 (mean=15.6)	Male adolescent sex offenders; 14 were court-ordered and 2 were voluntary (but admitted to criminal sexual behaviour). Crimes committed: criminal sexual contact, sexual assault, lewdness, endangering the welfare of a child and aggravated sexual assault. Treatment: 3 black, 5 white, 2 Puerto Rican. Control: 2 black, 3 white, 1 Puerto Rican.	The 12-week cognitive restructuring program included 3 components: Victim empathy training (5 sessions), covert sensitisation (3 sessions) and masturbatory satiation (4 sessions). The victim empathy portion used didactic instruction, videos of victims, group discussion and role play to address the physical, mental, sexual and emotional effects of their behaviour towards their victims. Participants wrote letters of apology to their victims. This portion also helped youths address their own histories of abuse. The covert sensitisation sessions emphasised cognitive restructuring; participants learnt how to identify their deviant fantasy, consider the consequences (an 'aversive	A sex education class offered purely clinical lessons on reproduction, sexual health, birth control, and sexual behaviours and the sexual response cycle. Homework was assigned regularly

Study	Design/comparison	Location	Age range	Sample characteristics	Intervention	Comparison(s)
					thought'), then alter their thought to an appropriate thought (an 'escape thought') involving appropriate ages and interactions. During masturbatory satiation sessions, participants were instructed by audiotape to masturbate to appropriate sexual thoughts; after ejaculation, the participant was to continue masturbating while imagining the sexual assault to link healthy thoughts with pleasure and deviant thoughts with displeasure. Therapists also explained the male sexual response cycle during this section	
Seabloom (2003)	QED Personal/Social Awareness (P/SA) program completers versus withdrawn versus referred	US	Adolescents	122 males and their families. Described as a sex offender population, but only 55% were referred by courts. Treatment issues were described as perpetration – opposite- / same-sex; incest victim – opposite / same-sex; indecent exposure, medical issues, transvestism, obscene phone calls, prostitution, fixations, transgender issues, voyeurism, promiscuity, rape, bestiality and attempted	The faith-based P/SA used both individual and family therapy to address sexual behaviours (and the effects and consequences of those behaviours) and sexual health. The program included psychotherapy groups, individual sessions and family therapy following a family systems model, 'marathons', family educational and awareness seminars – named 'Family Journey'. Parents/caregivers also attended group therapy. The marathon sessions took place in a retreat setting and consisted of extended family therapy sessions with additional components. The	Youths who were referred to other treatment options and youths who withdrew from the program were used as comparisons. Referral cases attended an average of 0.92 years before being referred elsewhere and withdrawals attended 0.73 years before withdrawing

Study	Design/comparison	Location	Age range	Sample characteristics	Intervention	Comparison(s)
				rape. Total sample: 85.7% white, 4.3% black, 3.1% Native American, 1.8% Asian American	Family Journey included group sessions and used media (including explicit media when appropriate)	
Stein* (1988)	Random, matched by age extinction versus co-extinction versus deviant	US	13–18	Males aged 13–18 who had been charged with, convicted of, or admitted to committing a 'hands-on' sexual offence against a pre-pubescent girl Extinction group: 3 Hispanic, 4 black. Average age: 16.3. 5 reported a history of physical abuse and none reported sexual abuse Co-extinction group: 6 black, 1 white. Average age: 16.2. 5 reported a history of physical abuse and 3 reported sexual abuse Deviant group: 3 Hispanic, 4 black. Average age: 16.1. 5 reported being physically abused and 4 reported being sexually abused	No information was provided about other treatment youths may have received. Extinction: Youths were told they would be shown a picture repeatedly so that they would get bored with it. After a 3-minute adaptation period, a slide showing a young nude female was presented to each adolescent while the researcher measured erection response. After the erection response returned to baseline for 30 seconds, the same slide was shown again. The same image was shown and the process was repeated 12 times in a session; each session featured a different slide of a pre-pubescent nude female Co-extinction (classical-operant extinction): Youths were told that they would hear an audiotape repeatedly so that they would get bored with it. After a 3-minute adaptation period, a slide showing a young nude female was presented to each adolescent for 2 minutes	Co-extinction (classical-operant extinction): Youths were told that they would hear an audiotape repeatedly so that they would get bored with it. After a 3-minute adaptation period, a slide showing a young nude female was presented to each adolescent for 2 minutes while the researcher measured erection response. In addition to the slides, an audiotaped description of a non-coercive, neutral sexual interaction between a male adolescent and a young girl was played during the last 30 seconds of each slide presentation. The subject was asked to repeat the depiction verbatim. After 30 seconds, the process was repeated with the same slide but a different excerpt of the audiotape was played. Different slides and tapes were used for each session Deviant: The process was identical to that of co-extinction except the audiotapes depicted coercive sexual scenarios. Youths were told that they would hear an audiotape repeatedly so that they

Study	Design/comparison	Location	Age range	Sample characteristics	Intervention	Comparison(s)
					while the researcher measured erection response. In addition to the slides, an audiotaped description of a non-coercive, neutral sexual interaction between a male adolescent and a young girl was played during the last 30 seconds of each slide presentation. The subject was asked to repeat the depiction verbatim. After 30 seconds, the process was repeated with the same slide but a different excerpt of the audiotape was played. Different slides and tapes were used for each session	would get bored with it. After a 3-minute adaptation period, a slide showing a young nude female was presented to each adolescent for 2 minutes while the researcher measured erection response. In addition to the slides, an audiotaped description of a coercive sexual interaction between a male adolescent and a young girl was played during the last 30 seconds of each slide presentation. The subject was asked to repeat the depiction verbatim. After 30 seconds, the process was repeated with the same slide but a different excerpt of the audiotape was played. Different slides and tapes were used for each session
Weinrott* (1997)	Randomised waitlist control group design Vicarious sensitisation (VS) versus waitlisted youths	US	13–18 (mean=14.7)	Males were recruited from outpatient juvenile sex offender programs, probation officers, private practitioners, and a medium/maximum security institution. Youths had to have committed and admitted to a hands-on offence against a child at least 4 years younger. Total sample: mean age 14.7 (range 13–18). 94% white. 70% were in an outpatient setting, 30%	Youths participated in typical specialised sexual offender treatment and received VS. Youths first listened (on tape) to a fantasy/crime scenario that depicted in detail the offender's own offence and sexual fantasies for around 1.5 minutes. The same 2 fantasy scenarios were alternated throughout the full duration. After listening to the audio scenario (the 'arousing stimuli'), youths were shown videotaped, scripted vignettes (35 seconds to 3.5 minutes) of actors depicting consequences of	Youths in the comparison condition received typical specialised sexual offender treatment. In addition, after assessment, this group was placed on a waitlist for 3 months while the treatment group took part in the program versus comparison youths, who received VS treatment after both groups had completed the post-test

Study	Design/comparison	Location	Age range	Sample characteristics	Intervention	Comparison(s)
				were institutionalised. Age at first sex offence: 11.7 (range 4–17). Number of child victims: 2.9. Age of youngest victim: 4.9. Victim gender: 45% female only, 20% male only, 35% both. Relationship to victim: 30% household only, 42% acquaintance only, 28% mixed. 54% had been victimised sexually. Total hands-on offences: 135 (range, 1–2 to 191)	sexual offending (e.g., getting caught and future victim confrontation). Different versions of vignettes were chosen to correspond to the youth's own offence/fantasy (for example, male or female, incestuous or non-incestuous). Each session consisted of a pairing of the crime scene with a series of 11 to 15 rotating aversive vignettes. When a youth no longer showed arousal across 5 consecutive sessions, more sexual details were added to the youth's fantasy scenario. Youths were also provided with a card describing the consequences to use when experiencing sexual urges outside treatment	
Wieckowski (2004)	QED Most serious offenders were assigned to most intensive treatment Self-contained program versus prescriptive program	US	11–20	Male offenders who had been remanded by the state's Department of Juvenile Justice (either mandated or recommended to treatment). To enter the self-contained program, juveniles had to meet 3 or more qualifying behaviours: sexual assault with threat or force, or sadistic acts resulting in suffering or humiliation of the victim; repeated sexually deviant	The treatment program is operated by the Virginia Department of Juvenile Justice and aims to prevent reoffending and to introduce new life and social skills. The average time spent in treatment was 9-15 months. A week of treatment usually included 2 group psychotherapy sessions, 2 psychoeducational groups, an individual psychotherapy session, a counselling session and a community meeting. Family therapy was offered when appropriate. Individualised	Prescriptive services were provided to offenders of less serious crimes (those who did not meet eligibility criteria for the self-contained treatment) and to offenders on a waiting list for the self-contained program. Participants lived in an open population at the facility. Services included individual therapy, group therapy, psychoeducational groups and family therapy as determined by the treatment team; it did not follow a milieu therapy program. Goals of treatment were similar to those of

Study	Design/comparison	Location	Age range	Sample characteristics	Intervention	Comparison(s)
				contact; escalation of sexually deviant behaviours; repeated sexual offences; both male and female victims; offences against strangers Self-contained: 43.1% black, 48.6% white, 6.9% Hispanic, 1.4% other. 26.2% had a history of sexual abuse; 47.2% had 1 victim, 37.5% had 2 to 5 victims, 15.3% had 6+ victims. Type of sexual offence: 31.9% rape, 48.6% child molestation, 11.1% both and 8.3% neither. Age at first offence: 14.6; number of prior offences: 3; age at incarceration: 16.9 Prescriptive: 58.6% black, 36.9% white, 4.5% Hispanic; 11.8% had a history of sexual abuse; 58% had 1 victim, 37.5% had 2 to 5 victims, 4.5% had 6+ victims; type of sexual offence: 30.4% rape, 34.8% child molestation, 1.8% both and 33% neither; age at first offence: 14.2;	treatment plans based on offender's specific needs were developed to accomplish the 10 generalised goals plus goals identified by the treatment team for each offender. General goals focused on responsibility, reduction of criminal sexual thinking, understanding factors of offence, anger and emotion management, appropriate interactions, understanding the effects of the offence, understanding the effects of own victimisation, family relations, self-control and application. Individualised treatment activities (assigned as needed) included writing an autobiography, disclosure, understand cycles of offending, cognitive distortions, empathy, family relations, sexuality and arousal, and relapse prevention. To graduate from the program, the offender met with an exit panel who then decided whether or not the offender was ready for release	the self-contained program. Duration was generally 9 to 15 months.

Study	Design/comparison	Location	Age range	Sample characteristics	Intervention	Comparison(s)
				number of prior offences: 4.5; age at incarceration: 16.8		
Worling (1998)	QED Sexual Abuse, Family Education and Treatment (SAFE-T) program versus comparison (non-completers/non-participants)	Canada	Mean=15.43	Adolescents convicted of, or having acknowledged, a sexual offence. Treatment: 53 males; 34 living at home, 12 living in a group home and 12 in secure custody. Average offender age: 15.34. 5 had previous criminal charges. Number of past victims: 3.98. Victim characteristics: 44 were children (aged under 12, with the offender at least 4 years older); 28 were intrafamilial, and 25 were the same sex Control: 86 males; 49 living at home, 16 living in a group home and 25 living in secure custody. 16 had previous criminal charges. Average offender age: 15.56. Number of past victims: 3.84. Victim characteristics: 65 were children (aged under 12 with the offender at least 4 years older), 39 were	SAFE-T assesses and treats adolescent sexual abuse victims and juvenile sex offenders. The program consists of around 2 months of assessment, after which an individualised treatment plan is developed. Cognitive behavioural and relapse prevention strategies are used to address denial and responsibility; arousal; and sexual ideas, beliefs and attitudes; and to develop victim empathy. Other skills (e.g. self-image, social skills, anger management, etc.) are also addressed. Treatment plans are reviewed every 4 to 6 months and adjusted as needed	Consisted of offenders who completed assessment only (46), refused treatment (17) or dropped out before finishing 12 months of treatment (27)

Study	Design/comparison	Location	Age range	Sample characteristics	Intervention	Comparison(s)
				intrafamilial, and 32 were the same sex		
***** Three studies that met the criteria for inclusion (Hains, 1986; Stein, 1988; and Weinrott, 1997) are dated and the treatments described include strategies that do not meet current ethical standards for working with children. These are not included in the results table or subsequent analysis. Treatment effects for these studies tended to be small and non-significant.						

Table 6. Design and implementation: Studies of programs for children aged 10–17 who sexually offended and were treated using a criminal justice intervention

Study	Design/comparison	Dosage and format	Implementability	Implementation outcomes	Internal validity*
Apsche (2005)	Randomised controlled trial (RCT) Mode Deactivation Therapy (MDT) versus cognitive behaviour therapy (CBT) versus social skills training (SST)	Duration and format of program was not described, though it is likely that they were individual sessions. Average length of residential treatment across all 3 conditions was 11 months	A manual and workbook are used to guide sessions and evaluate progress. Therapists' education or background is not reported; therapists were trained in only 1 of the 3 interventions. Researcher was program developer	Information on implementation fidelity was not reported	RCT. Medium quality. Mechanism of randomisation ('based on clinician availability') was vague. Groups were similar at baseline for demographics and prior offence history. Attrition was not reported
Apsche (2008)	RCT MDT family therapy versus Treatment as usual (TAU)	Individual, group and family sessions were led weekly by psychologists in an outpatient setting. Duration was generally 8 to 12 months, depending on the clients' needs and progress	Psychologists delivered MDT. A clinician manual and family workbook were used throughout treatment. Training for psychologists was not reported. Researcher was program developer	Information on implementation fidelity was not reported	RCT. Medium quality. Groups were similar at baseline for prior behavioural problems. Attrition was not reported
Borduin (1990)	RCT Multisystemic Therapy (MST) versus individual therapy	Youths and families received around 37 hours of treatment (range: 21–49 hours) led by 2 female and 2 male doctoral clinical psychology students. MST was typically delivered in settings convenient for families (e.g., home or school). Therapists participated in 2.5-hour weekly supervision sessions with the first author	Treatment was conducted by 2 female and 2 male doctoral psychology students. They had weekly 2.5-hour supervision groups conducted by Borduin to discuss goals, videotaped therapy sessions and progress reporting. Researcher was program developer	Information on implementation fidelity was not reported	RCT. High quality. Groups were similar at baseline. There was no attrition, although sample size was small
Borduin (2001)	RCT MST versus usual community services	Mean length of services: 30.8 weeks (SD: 12.3; range: 14.3–63.7 weeks). Participants received approximately 3 total	Manualised program. Therapists were 2 female and 4 male graduate students in clinical psychology. Therapists	Therapists' summaries of cases revealed that all MST cases received therapy in three or more systems,	RCT. High quality. Groups similar at baseline for demographics and

Study	Design/comparison	Dosage and format	Implementability	Implementation outcomes	Internal validity*
		hours of services per week. Sessions were provided in locations convenient to the family (e.g. home, school, community)	received training in MST and weekly supervision. Researcher developed the program	including individual, martial, family, peer and school systems	arrest histories. Low attrition
Boswell (2002)	QED McGregor Hall ex-residents versus referrals only	Residential. Duration was around 2 years. Individual, group and family formats were used	A director (under guidance from trustees), therapists and community staff members (making a total of 32) managed the program. Four external consultants were available to offer expertise and advice. Routine practice program	Extensive qualitative information on ex-residents' satisfaction with the program was included. Most participants reported feeling positively about their time there	QED. Low quality. Very small sample. Groups not similar at baseline for prior history or motivation. There was evidence that not all records were available
Byrne (1999)	Quasi-experimental design (QED) Healthy Lifestyles completers versus Healthy Lifestyles partial completers (education component only) versus no treatment	Most components (8 education sessions and 19 group sessions) used a group format, but participants had 3 individual counselling sessions. Treatment typically lasted 16 weeks. Sessions were typically 1 to 2 hours each, as needed	Facility therapists lead treatment. No information about a manual or other implementability material was provided. Routine practice program; researcher was not program developer	The treatment group consisted of 14 youths who had completed the program. The education-only group presumably attended 8 sessions (but did not complete due to funding problems and/or individual issues)	Retrospective QED. Low quality. Groups were different at baseline for prior offending behaviour. In addition, non-completer group had closer release dates, lower cognitive ability and lower motivation
Cooper (2000)	QED Thunder Bay Adolescent Sex Offender Program (TBASOP) completers versus non-completers versus assessment only	Community-based. Treatment completers participated in the program for an average of 17 months	A treatment team that included psychologists, social workers and psychiatrists led treatment. No information about a manual was provided. It was a routine practice program	None reported	QED. Low quality. Non-completer comparison group was problematic. Initial demographic information and risk assessment was not available for the assessment-only group, as they did not enter treatment

Study	Design/comparison	Dosage and format	Implementability	Implementation outcomes	Internal validity*
Erickson (2008)	QED Assignment was based on the state region in which the youth reside. Functional family therapy (FFT) versus Treatment as usual for juvenile sexual offenders (TAU-JSO)	Therapy duration: usually 12 to 16 weekly sessions, 60 minutes each, over 3 to 4 months. Duration of each phase depended on the needs of the individual family. Therapy was conducted in the families' homes. Unlimited booster sessions (most ranged from 1 to 20 sessions) were provided as needed during the youth's parole period	Therapists were certified juvenile sex offender treatment providers with training in FFT. Researcher was not the program developer	Average number of sessions attended: FFT: 12.15 (range: 1–21); 3.6 family booster sessions (range: 5–35). Total: 15.75 sessions (range: 5–35) TAU-JSO: 35.4 individual sessions (range: 0–94); 23.55 group therapy (range: 0–93); 2.16 family therapy (range: 0–50). Total: 61.11 (range: 17–105)	QED. Medium quality. Groups were similar at baseline
Gillis (2010)	Matched group design, individual level, based on age of first arrest, severity of first offence and race. LEGACY versus youth development centers versus other specialised centerss	Average length of stay was 1 year. Youths lived in the treatment facility full time. Adventure activities were often executed in small groups of 8 to 15	Trained staff members conducted activities, while licensed master's-level counsellors or social workers provided therapy. Researcher was program developer	No implementation outcomes were reported	QED. Medium quality. Matching process produced groups with similar offence histories and race
Graves (1992)	RCT The Adolescent Social Skills Effectiveness Training (ASSET) program versus traditional therapy	9 weekly group sessions were delivered. 1 social skills session was taught each week and the ninth session was a review session	Manualised program. Program developer was not affiliated with the study. There was no information about therapist background or training	18 of 20 treatment group participants attended at least 7 of 9 treatment sessions	RCT. Low quality. Only included completers (7 of 9 sessions) in analysis, which violates the benefits of randomisation
Guarino-Ghezzi (1998)	QED Assignment to groups was determined by	Because program was decentralised, details were unavailable. Group treatment was most common format. Mean length of specialised	No information was provided	No information was provided	QED. Medium quality. Groups were similar at baseline for prior history of offending

Study	Design/comparison	Dosage and format	Implementability	Implementation outcomes	Internal validity*
	the Department of Youth Services Specialised sex offender treatment versus non-specialised treatment	programs: 15.7 months. Average of 9.5 group sessions throughout program placement			and victimisation. Moderate attrition
Hains* (1986)	QED Psychoeducational program versus waiting-list control group	Group sessions occurred twice weekly for 7 weeks and lasted 50 minutes	A psychologist and a social worker led sessions, except for sessions on sexual knowledge, which were led by the youth centre nurse. It appears that the authors developed the program by combining components from other treatments (no manual was cited, but content was clearly described)	No information was provided	QED. Low quality. Groups were similar at baseline but samples were very small. There were no reports on reoffence or PSB outcomes
Lab (1993)	QED Youths were assigned based on a risk assessment score, interviews with probation staff members and availability of space. Sexual offender treatment program versus other programs	20 sessions. Group sessions were 2.5–3 hours, and there were additional family and individual counselling sessions. The frequency or number of sessions in each format was unclear	Routine practice program that appears to have been run by the local juvenile probation department and the courts. There was no information on treatment provider training or a manual	No information was provided	QED. Low quality. Youths were assigned based on risk scores, indicating they were higher risk
Lambie (2007)	QED Specialised community	Average time in treatment: 17 months. Because there were 3 separate programs and treatment was individualised,	Leadership at the WellStop program developed the Good Way model. Therapists, staff members, social workers and	Cost effectiveness: The average cost of treatment per client was $5,651 across the 3 treatment centres	QED. Low quality. Non-completer comparison group was problematic. It is likely

Study	Design/comparison	Dosage and format	Implementability	Implementation outcomes	Internal validity*
	treatment completers versus treatment dropouts versus referral/assessment only	frequency and format cannot be determined (though individual, group and family therapy were used)	clinicians worked together in all 3 programs. Routine practice programs		the referral comparison group members did not have similar risk histories. Survival times were measured, but cannot be coded with the information provided. The Millon Adolescent Clinical Inventory, Child Behaviour Checklist and Youth Self-Report were conducted at 2 locations, but only for a limited time; results for the separate groups were not available
Letourneau (2009)	RCT MST versus TAU	MST was delivered primarily in the home and community to suit family schedules. Average duration was 7.1 months and clinicians were available for emergencies 24 hours a day	MST was provided in the home or community by clinicians (1 pre-doctoral, 3 master's-level and 1 bachelor's-level) at a local provider agency. All therapists completed the standard 5-day MST training, 1.5 days training for working with sex offenders and quarterly booster sessions. Clinicians served caseloads of 4–6 families each and received weekly supervision. Researcher was program developer	A quality assurance protocol was completed monthly to ensure proper use of the 9 MST principles. There was a 91% completion rate, which met or exceeded program standards	RCT with stratification by victim age. High quality. Groups were similar at baseline for demographics and prior offending behaviour. Attrition was low
Levit (2015)	QED Matched comparison group	Therapy was provided in individual, group and family formats. Group duration: 1.5 hours per week. Individual and	Groups facilitated by a male and a female clinician (when possible). The program was staffed by a licensed clinical	No information was provided	QED. Low quality. Non-completer comparison group was problematic

Study	Design/comparison	Dosage and format	Implementability	Implementation outcomes	Internal validity*
	STRIVE Treatment Program completers versus non-completers/non-participants	family therapy was provided as needed. Average treatment duration: 18 months (range: 14 months to 2 years or longer)	social worker and 2 clinical psychologists, who were assisted by student trainees. All core staff members had specialty training and experience with adolescent sex offenders. Routine practice program		
Mathe (2007)	RCT Sex offender program versus waitlist control	23 weekly group sessions, around 2 hours each. Individual therapy was also used throughout the program	Program was developed and implemented by the author, who worked as a social worker in a maximum-security facility for juveniles	No information was provided	RCT. Medium quality. Groups apparently similar at baseline but study had a very small sample size
Morton-Bourgon (2005)	Quasi-experimental treatment with family involvement versus treatment without family involvement	Average length of treatment: 18 months	No information was provided	No information was provided	QED. Low quality. Youth in family-involved services were younger, lower risk, and generally less problematic
Piliero (1994)	RCT Cognitive restructuring (covert sensitisation, masturbatory satiation and victim empathy training) versus sex education program	Both the treatment program and the control program lasted 12 weeks; each met once a week for 2 hours	Both groups were instructed by the author (female) and her academic advisor (male). The male therapist was a licensed social worker and the program director; the female therapist was a doctoral student	Evaluation rating scale: 90% of treatment participants felt training was very effective; 100% felt the trainers were very knowledgeable and interested. 100% of control participants felt the education training was effective and that the trainers were knowledgeable; 83.3% felt trainers were very interested	RCT. Low quality. Groups were not similar at baseline. Low reporting quality (only a small portion of outcomes could be coded)
Seabloom (2003)	QED Personal/Social Awareness (P/SA) program completers	Weekly psychotherapy groups for youths lasted 3 hours. Biweekly individual sessions lasted 1 hour; and biweekly family therapy lasted 2 hours.	Treatment team included master's-level social workers, psychologists, county social workers and probation officers, all of whom received human	Participation/adoption: Youths were considered 'completers' if they attended the program for more than 1 month. Among all 3 levels of	QED. Low quality. Program withdrawals and those referred elsewhere (for more serious issues) used as

Study	Design/comparison	Dosage and format	Implementability	Implementation outcomes	Internal validity*
	versus withdrawn versus referred	Treatment included bimonthly 27-hour marathons and twice a year, the families attended the 'Family Journey' seminars for 2 days. Parents/caregivers also participated in weekly 2-hour group therapy sessions. Mean length of treatment for completers: 1.26 years	sexuality training. Family Journey was adopted from a model developed by the National Sex Forum, Institute for Advanced Study of Human Sexuality, and the University of Minnesota's human sexuality program. Researcher was likely to have been the program developer	participants, 116 attended group therapy, 106 attended the marathon, 97 participated in family therapy, 62 attended the Family Journey and 33 received individual therapy. 97 received 3 or more different components; 24 received 1–2	comparison group. No baseline equivalence information was reported
Stein* (1988)	Random, matched by age extinction versus co-extinction versus deviant	Sessions took place at the Sexual Behaviour Clinic at the New York State Psychiatric Institute. Treatment included 3 brief sessions, which participants went through once per week for 12 weeks.	Lab-based program; requires equipment. Program developer unknown	None reported	RCT with matching. High quality. Groups similar at baseline for demographics and offence histories
Weinrott* (1997)	Randomised waitlist control group design Vicarious sensitisation (VS) versus waitlisted youths	Over a 3-month period, youths received 25 sessions (twice per week). Sessions were conducted individually in mobile or institute labs	VS program was delivered individually in lab settings. Equipment was required. Researcher was program developer	Parent ratings: 75% of parents/caregivers would definitely recommend VS to other parents/caregivers, 7% would 'with reservations' and 15% did not respond. 87% felt that VS was worth the time, effort and inconvenience. 62% of parents/caregivers thought VS was 'extremely helpful' and 33% thought it was somewhat helpful in preventing further offending	RCT. Medium quality. Groups were similar at baseline for demographics and offence histories. There was a large number of non-completers
Wieckowski (2004)	QED Most serious offenders were	The treatment program took place in a juvenile correctional setting. There were separate units for younger juveniles, older juveniles and cognitively	The treatment team included a psychologist, counsellor, social worker, correctional officers, medical staff members, psychiatrist, teachers,	Cost information: 2 years of the self-contained treatment program cost around $160,000 per offender	QED. Low quality. Groups were not equivalent at baseline

Study	Design/comparison	Dosage and format	Implementability	Implementation outcomes	Internal validity*
	assigned to most intensive treatment Self-contained program versus prescriptive program	impaired juveniles. Average length of stay in the self-contained unit was 18–24 months	recreational staff members, volunteers and university employees		
Worling (1998)	QED Sexual Abuse, Family Education and Treatment (SAFE-T) program versus comparison (non-completers/non-participants)	The program was a community-based, outpatient clinic. Treatment involved weekly group and individual therapy, and biweekly family therapy. Treatment was tailored to individual participants' needs. Average length of stay was 24.43 months (concurrent group therapy: 13.51 months (SD=5.43); concurrent family treatment: 16.02 months (SD=9.28). All treatment participants received individual therapy; 71% also received group and family therapy	Program was individualised. There was no information about therapist background or training. Researcher was program developer	Participants were required to attend for 12 months (2 months assessment and 10 months therapy) to be included in the treatment group. 27 offenders dropped out before completing treatment and were instead included in the comparison group. 18 of the 58 treatment group participants dropped out before completing treatment but still completed 12 months' participation	QED. Low quality. Three comparison groups (assessment only, refusers, non-completers). All groups similar at baseline; no controls for selection in analyses. One-third of the treatment group dropped out before completion
***** Three studies that met the criteria for inclusion (Hains, 1986; Stein, 1988; and Weinrott, 1997) are dated and the treatments described include strategies that do not meet current ethical standards for working with children. These are not included in the results table or subsequent analysis. Treatment effects for these studies tended to be small and non-significant.					

*Table 7. Outcomes, sample sizes and study findings: Studies of programs for children aged 10–17 who have sexually offended and received treatment through a criminal justice intervention**

Study	Sample size & Attrition (% loss)	Sexual Harmful Behaviour Outcomes (follow-up time)	Effect Sizes (Confidence interval)	Other Non-HSB Outcomes	Effect Sizes (Confidence Interval)
Apsche (2005) MDT versus SST	MDT n=20 (na) SST n=20 (na)	Sexual aggression	SMD=.51 [-.12, 1.14]	Violence/physical aggression Externalising Problem behaviour Internalising	SMD=.40 [-.23, 1.02] SMD=1.73* [1.00, 2.46] SMD=2.46* [1.63, 3.29] SMD=1.94* [1.17, 2.70]
Apsche (2005) MDT versus CBT	MDT n=20 (na) CBT n=19 (na)	Sexual aggression	SMD=.45 [-.19,1.09]	Violence/physical aggression Externalising Problem behaviour Internalising	SMD=.24 [-.39, .87] SMD=2.01* [1.24, 2.79] SMD=1.68* [.95, 2.41] SMD=1.51* [.79, 2.23]
Apsche (2005) CBT versus SST	CBT n=19 (na) SST n=20 (na)	Sexual aggression	SMD=.06 [-.57,.60]	Violence/physical aggression Externalising Problem behaviour Internalising	SMD=.15 [-.48, .78] SMD=.14 [-.49, .77] SMD=.75* [.10, 1.40] SMD=.44 [-.20, 1.07]
Apsche (2008) MDT versus TAU	MDT n=20 (na) TAU n=20 (na)	None		Externalising Problem behaviour Internalising	SMD=1.50* [.80, 2.20] SMD=1.53* [.83, 2.24] SMD=.53 [-.10, 1.16]
Borduin (1990) MST versus IT	MST n=8 (0%) IT n=8 (0%)	Sex offences (159 weeks)	OR=21* [1.50, 293.25]	Non-violent Recidivism	OR=3.00 [.36, 24.92]
Borduin (2001) MST versus TAU	MST n=24 (0%) TAU n=24 (0%)	Sex offences (immediate)	OR=4.83* [1.65, 14.11]	Violence/physical aggression Externalising Problem behaviour Recidivism (binary) Recidivism (continuous)	SMD=.96* [.37, 1.56] SMD=1.18* [.56, 1.79] SMD=.67* [.09, 1.25] OR=4.98* [1.44, 17.15] SMD=.65* [.06, 1.23]
Boswell (2002)	McGregor Hall n=7 (na) Referrals n=3 (na)	Sex offences (182 weeks)	OR=.31 [.01, 9.55]	None	
Byrne, 1999	Healthy Lifestyles n=14 (0%) Education only n=10 (0%)	Sex offences (834 weeks)	OR=1.38 [.03, 75.63]	None	
Byrne, 1999	Healthy Lifestyles n=14 (0%) No Treatment: n=8 (0%)	Sex offences (834 weeks)	OR=5.80 [.17, 194.76]	None	

Study	Sample size & Attrition (% loss)	Sexual Harmful Behaviour Outcomes (follow-up time)	Effect Sizes (Confidence interval)	Other Non-HSB Outcomes	Effect Sizes (Confidence Interval)
Cooper (2000)	Thunder Bay n=41 (36%) Non-completers n=23 (na)	Sex offences (213 weeks)	OR=8.42 [.88, 80.56]	Recidivism	OR=2.40 [.66, 8.76]
Cooper (2000)	Thunder Bay n=41 (36%) Assessment only n=25 (0%)	Sex offences (213 weeks)	OR=1.82 [.11, 30.51]	Recidivism	OR=2.76 [.80, 9.56]
Erickson (2008)	FFT n=40 (2%) TAU n=38 (3%)	Sex offences (44 weeks)	OR=1.00 [.02, 51.68]	Recidivism	OR=.49 [.09, 2.70]
Gillis (2010)	Legacy n=95 (na) YDC n=95 (na)	Sex offences (continuous) (156 weeks) Sex offences (binary)	SMD=.29* [.00, .57] OR=1.51 [.55, 4.17]	Recidivism	OR=2.64* [1.27, 5.48]
Gillis (2010)	Legacy n=95 (na) OSC n=95 (na)	Sex offences (continuous) (156 weeks) Sex offences (binary)	SMD=.36* [.07, .65] OR=1.85 [.72, 4.76]	Recidivism	OR=2.01 [.95, 4.27]
Graves (1992)	ASSET n=18 (10%) TAU n=12 (25%)	(immediate)		Externalising Problem behaviour Internalising	SMD=.72 [-.04, 1.47] SMD=.68 [-.07, 1.43] SMD=.69 [-.06, 1.44]
Guarino-Ghezzi (1998)	Spec n=33 (25%) TAU n=25 (19%)	Sex offences (52 weeks) Distored sexual cognitions	OR=4.10 [.13, 127.32] SMD=.63 [-.30, 1.55]	Recidivism	OR=3.10 [.45, 21.14]
Lab (1993)	Spec n=46 (0%) TAU n=109 (0%)	Sex offences (66 weeks)	OR =1.71 [.19, 15.77]	Recidivism	OR=.63 [.27, 1.47]
Lambie (2007) Spec versus Ref	Spec n=217 (43%) Ref n=300 (0%)	Sex offences (161 weeks)	OR=1.68 [.30, 9.41]	Recidivism	OR=2.19 [1.13, 4.25]
Lambie (2007) Spec versus nonC	Spec n=217 (43%) nonC n=165 (na)	Sex offences (161 weeks)	OR=2.58 [.50, 13.40]	Recidivism	OR=2.24 [1.01, 4.98]
Letourneau (2009)	MST n=67 (1%) TAU n=60 (5%)	Problem sexual behaviour (31 wks) Problem sexual behaviour (73 wks)	SMD=.20 [-.28, .68] OR=1.49 [.74, 3.01]	Externalising Internalising	SMD=.34 [-.01, .69] SMD=.27 [-.08, .62]
Levit (2015)	STRIVE n=86 (36%) nonC n=49 (na)	Sex offences (364 weeks)	OR=.87 [.15, 4.94]	Recidivism	OR=2.09 [.98, 4.48]
Mathe (2007)	Program n=9 (0%) Waitlist n=9 (0%)	Distorted sexual cognitions (immediate)	SMD=.84 [-.13, 1.80]	None	

Study	Sample size & Attrition (% loss)	Sexual Harmful Behaviour Outcomes (follow-up time)	Effect Sizes (Confidence interval)	Other Non-HSB Outcomes	Effect Sizes (Confidence Interval)
Morton-Bourgon (2005)	Family n=89 (0%) No family n=38 (0%)	None (immediate)		None	
Piliero (1998)	Cog Restructuring n=10 (0%) Ed only n=6 (40%)	Problem sexual behaviour (immediate) Distored sexual cognitions	SMD=.11 [-.95, 1.17] SMD=.59 [-.48, 1.65]		
Seabloom (2003)	P/SA n=52 (50%) Referrals n=18 (0%)	Sex offences (954 weeks)	OR=2.95 [.07, 119.94]	Recidivism	OR=5.43 [.72, 40.84]
Seabloom (2003)	P/SA n=52 (50%) Withdrawals n=52 (na)	Sex offences (954 weeks)	OR=10.66 [.56, 203.92]	Recidivism	OR=2.37 [.37, 15.00]
Wieckowski (2004)	Milieu n=142 (47%) TAU n=111 (47%)	Sex offences (215 weeks) Sex offences (266 weeks)	OR=.91 [.35, 2.40] OR=.91 [.28, 2.96]	Violence/physical aggression Recidivism (binary) Recidivism (continuous)	OR=1.52 [.90, 2.55] OR=1.43 [.81, 2.52] SMD=.01 [-.24, .26]
Worling (1998)	SAFE-T n=58 (43%) non-completers/non-participants n=90	Sex offences (cont.) (219 weeks) Sex offences (binary) (219 weeks) Sex offences (binary) (739 weeks)	SMD=-.39 [-1.39, .61] OR=3.96* [1.10, 14.28] OR=2.84* [1.00, 8.09]	Violence/physical aggression Violence/physical aggression	SMD=.15 [-.49, .78] OR=2.03 [.92, 4.48]

***** Three studies that met the criteria for inclusion (Hains, 1986; Stein, 1988; Weinrott, 1997) are dated and the treatments described include strategies that do not meet current ethical standards for working with children. These are not included in the results table or subsequent analysis. Treatment effects for these studies tended to be small and non-significant.

For SMD, Cohen (1988) developed a rubric for quickly interpreting their size: small effect=0.2-0.49; medium effect=0.5-0.79; large effect=0.80+.

For OR, results greater than 1 indicate more positive outcomes, those less than 1 indicate negative. The further the result is from 1.0 (i.e., between 1 and ∞ if positive and between 0 and 1 if negative), the larger the effect.

Meta-analysis – Moderator analysis

Across the 19 studies of sex offender programs that reported impacts on sexual offences or sexual recidivism, two studies were RCTs and the remaining 17 were QEDs. Table 8 below shows the fixed-effect mean odds ratios and confidence intervals. Caution should be used when interpreting these effect sizes because of the variability in intervention types and comparison group types across studies. The treatment contrast (that is, the difference in services received by the intervention and comparison groups) varied considerably; some studies involved a specialised treatment program compared to usual services, while other studies used non-completer comparison groups. The nature of this contrast can affect the size of the impact estimates in unexpected ways. In addition, some of the included studies used dated behavioural techniques that are unlikely to be acceptable today. The mean odds ratios for the RCTs and QEDs were both positive and statistically significant, indicating that the programs for youth sexual offenders included in this review led to lower sexual recidivism in intervention groups after treatment.

We further separated the quasi-experimental studies into those with a family focus and those without a clear family focus. The fixed-effect mean odds ratios for these subgroups of programs are shown in the last two rows of the table. Neither of the mean effects are statistically significant. There are few studies in these estimates, and many of them have small sample sizes. It is not surprising, then, that neither estimate achieved statistical significance.

Table 8. Mean effect sizes by research design and (for QEDs) by family focus

	Mean OR	**95% LCI**	**95% UCI**	**N studies**
RCTs	5.95*	2.20	16.06	2
QEDs	1.61*	1.08	2.40	17
Family focused	2.03	0.99	4.17	10
Not family focused	1.45	0.90	2.34	7

* p<.05

Table 9 shows the family focus categorisation by study.

Table 9. Studies categorised by family focus

Not Family	**Family**
Byrne (1999)	Apsche (2005)
Gillis (2010)	Apsche (2008)
Graves (1992)	Borduin (1990)
Guarino-Ghezzi (1998)	Borduin (2001)
Hains (1986)	Boswell (2002)
Levit (2015)	Cooper (2000)
Mathe (2007)	Erickson (2008)
Piliero (1994)	Lab (1993)
Stein (1988)	Lambie (2007)
Weinrott (1997)	Letourneau (2009)

Wieckowski (2003)	Morton-Bourgon (2005)
	Seabloom (2003)
	Worling (1998)

Summary of the evidence

The 27 eligible RCTs and QEDs that met our inclusion criteria were separated into three groups to reflect the different populations of children who have problem or harmful sexual behaviour: children aged 0–10 with PSB (two studies), children aged 10–17 with HSB (one study) and children aged 10–17 (24 studies) who have sexually offended and were treated through a criminal justice intervention. Overall, the research was somewhat dated, studies generally had small sample sizes, most were conducted in the United States, most had low to medium ratings of quality, and a substantial proportion used behavioural and/or cognitive behavioural approaches.

Of the two studies looking at decreasing PSB for children age 0–10 (Pithers et al., 1998; Bonner et al., 1999). Neither study had a significant effect but this may be due to their small sample sizes (that is, there may be an effect, but the size of the sample used for the studies may have been too small to detect statistically significant differences). Only one study looked at HSBs for children age 10–17. Of particular note, this was an Australian study (New Street, Laing et al., 2014) that found a large treatment effect (decreased likelihood of a sexual offence charge) when comparing treatment completers to those who withdrew from the study prior to completion of treatment (a biased comparison). However, there was no statistically significant effect when comparing these same completers to a matched group of children who were referred to services at New Street but could not attend due to space limitations (a less biased comparison). Although it can be argued that such a finding means that getting more children to complete the program would improve outcomes for more children, it is also possible that those who withdrew had a higher risk of reoffending and may represent a very different population that requires a different set of services.

Methods comment: Attrition and the effect of program completion

Attrition from studies is a complex issue that is often left unaddressed in studies that do not adhere to reporting standards such as those articulated in the CONSORT Statement (www.consort.org). Attrition can result from a number of processes and, depending on who is leaving the study, can substantially bias findings if the reason participants leave directly or indirectly relates to the outcomes being measured. For example, people may leave a study if they are arrested for a new offence or they disengage from a service because it does not meet their needs. One strategy researchers sometimes adopt is to only look at those who complete treatment, arguing that a service should be tested when treatment (or an adequate dose of treatment) is provided. This has some merit in the sense that one must receive treatment to benefit from it. The difficulty comes when the next leap is made: that completing treatment will improve outcomes. That turns out to be a different question that can, and should, be tested (that is, setting up a study to test whether those who did not complete would have benefited from a greater number of sessions). Without such a specific (and rare) test, it is conjecture to assume that a higher rate of completion would facilitate

better outcomes. It may well be that those who drop out are more likely to have poor outcomes and, had they stayed in the study, the effectiveness of the program would be drastically reduced.

A more nuanced and honest appraisal of attrition is needed in the area of problem and harmful sexual behaviours of children. Given the differences in severity, frequency and degree of stability of these behaviours, as well as the differences in household and community contexts experienced by children with such behaviours, it may be that some children would benefit if better engaged to completion, while there may be a different and substantial subgroup of children who need a different type of treatment. Simply looking at 'completer studies' is very biased and, when this bias is corrected for in an analysis (for example, comparing outcomes for the waitlist group with the treatment completer group at New Street), treatment benefits can be diminished or become non-significant. This means that the programs are either not as effective as they are reported to be, or that a different level of service may be required for subgroups that are characterised by non-completion. In such cases, the best course may be to maximise engagement strategies and, when children begin to drop out of a program before completion, acknowledge that such children are likely to need a different set of services.

The 24 studies involving youths age 10–17 who have sexually offended were of varying quality and had a wide array of orientations and approaches. The most promising approach was Multisystemic Therapy (MST), which bundles potentially effective approaches (including cognitive and behavioural therapies, and family therapy) that are delivered in close cooperation with family/caregivers. The positive effect of MST parallels findings from a large Swedish review of treatment for adult and youth offenders (Swedish Council on Health Technology Assessment), which concluded that MST may be effective and that there is no evidence that CBT is effective when used alone. Unlike the Swedish study, this rapid review used a less conservative set of inclusion and exclusion criteria, one that better fits the population seen in the Australian context (for example, high levels of placement in out-of-home care and mental health issues). Our findings, while largely the same, indicate that a few other modalities may have positive effects as well. This prompted us to further explore the data using meta-analysis to test whether family focused interventions have larger effect sizes than individually focused interventions. Unfortunately, both of the high-quality RCTs tested MST, so MST could not be directly compared with other family-focused approaches. Among the QEDs, there was an overall modest treatment effect, but there was no significant difference between family focused and non–family focused interventions. That said, the small sample sizes limited the power to detect differences and the magnitude of the effect indicates this is may be an area to explore in future studies.

Multisystemic Therapy

MST is an empirically supported treatment, which was developed in a standard version for youths aged 12–17 with severe antisocial behaviour. The aim of standard MST is to reduce or eliminate the youth's antisocial behaviour and prevent their placement in out-of-home care (Henggeler & Schaefer, 2010). MST studies have compared MST with Treatment as usual (TAU), which consists of whatever treatment was otherwise provided in the location

of the study. Subjects were randomly allocated to MST or TAU after consents were obtained and exclusions were decided. However, the results should be treated with cautious optimism because, while the results may be internally valid (that is, the MST group differed from the TAU group after treatment), the TAU group did not represent the entirety of the clinic sample (that is, those who consented and met inclusion criteria may be different from those who did not). It is also not clear what level of resourcing was available to provide TAU in these studies and whether TAU included a range of treatment approaches and providers. That is, MST was not necessarily compared to other potentially high-quality approaches. It is unclear how MST would fare when compared to approaches that include similar components that are not packaged as MST. Comparative effectiveness studies are needed.

MST is a parent/caregiver intermediated intervention that is delivered in the youth's home and local community. As such, it supports parents/caregivers in managing their child's challenging behaviours. While standard MST addresses a juvenile justice population, 13 adaptations of the program are being studied and are at different stages of development. Among the most matured adaptations are MST-PSB (MST for PSB), MST-CAN (MST for Child Abuse and Neglect) and MST-SA (MST for Substance Abuse).

These adaptations may differ from the standard program in treatment length and intensity, and the composition of the treatment team or treatment add-ons, but they have a number of clinical principles in common with standard MST. *Firstly*, MST programs view the child or youth as embedded within multiple interconnected systems – the family, peers, school, neighbourhood and community – that need to be addressed and engaged with as part of treatment. *Secondly*, nine treatment principles guide the development and delivery of single, individualised treatment processes. Taken together, the principles aim to ensure that treatment is tailored to the target child or youth and their context, based on continuous evaluation and improvement, and designed to sequentially empower the child or youth and their family to generalise and sustain results. *Thirdly*, interventions are developed in a treatment process that is driven by an analytical process that, comparable to a 'Plan-Do-Study-Act' cycle, aims to enable MST practitioners to model daily practice on a results-based process of continuous quality improvement.[6]

MST practice is based on a strong training and supervision component. Therapists have basic training, followed by quarterly booster training, as well as weekly supervision and consultations. This professional development is maintained as long as a therapist practices MST as part of a licensed MST treatment team.

This review identified MST as one of the more promising practices. This was due to the combination of (a) a multisystemic, ecological and behavioural treatment approach; (b) a strong component of continuous quality improvement; and (c) intense and continuous professional development of staff members. However, the model has not been developed for delivery in an institutional or out-of-home care setting.

A few studies that met the criteria for inclusion were dated and the treatments described included strategies that do not meet current ethical standards for working with youths

6 The principles and analytical process are available on MST Services' website at http://mstservices.com/files/Process_and_Principles.pdf

(Hains, 1986; Stein, 1988; Weinrott, 1997). These strategies appear to reflect early approaches to treatment that inappropriately used behavioural techniques that prevail in adult treatments. Treatment effects for these studies tended to be small and non-significant.

Overall, studies largely included samples of all males or mostly males. Although girls featured more prominently in the younger PSB group, this may be due to higher rates of sexual abuse of girls (this younger group of children seeking treatment are often themselves victims of child sexual abuse). In addition, the literature would suggest that a substantial number of children being treated for HSB will have themselves been sexually abused (Seto et al., 2010; Widom, & Ames, 1994; Forsman, & Långström, 2012; Whittaker et al., 2008; Hanson, & Morton-Bourgon, 2005). In any case, there is limited evidence about girls displaying problem or harmful sexual behaviour, and there is every reason to regard them as a treatment population dissimilar enough from boys due to differences in socialisation and development. Certainly, mixing boys and girls in group approaches would be inadvisable unless convincing evidence to the contrary was uncovered.

Although we anticipated being able to ascertain implementation outcomes, as well as to consider the 'implementability' of services found to be effective in this review, the reality is that the reporting of implementation and its various components in journal articles is a relatively new phenomenon, and a good portion of the included studies are dated. The only reliable information about implementation comes from the two MST studies, which measured model fidelity using a combination of staff requirements and activities, prompts to adhere to principles, and even a measure of fidelity. Strong treatment effects and high fidelity were found in one MST study and more modest treatment effects and lower fidelity were found in the other.

Further deconstructing the make-up of MST and the other programs leads to a series of commonly used techniques and approaches that, while not tested in this review, may be driving positive effects. First, MST is an individualised approach to treatment that strongly involves the parent and/or caregiver. Moreover, its systems approach invites involvement of key institutions and those with important relationships with the family in efforts to prompt and maintain behaviour change. In essence, MST represents a constellation of all the things that programs must do to be effective. That is, programs should:

- use behaviour change techniques that are known to be effective. Problem and harmful sexual behaviour is just that: a behaviour. Modern, evidenced behaviour change strategies usually involve behavioural and/or cognitive behavioural approaches. Simply engaging, reflecting and hoping is unlikely to foster actual change
- avoid group-based treatment approaches in which peer contagion can undermine potential or actual treatment gains (Dishion, Ha, & Véronneau, 2012; Dishion, McCord, & Poulin, 1999)
- use interventions that are mediated by a parent or caregiver to ensure effective and timely reinforcement of positive behaviours, and curb or extinguish negative behaviours that occur in the home and neighbourhood environments. Children spend far more time in their households than they do with their therapists. Real change must come in the environment and with the people in it

- pay attention to the many environments outside the home in which children spend their time. Involvement of other key players such as schools and recreational organisations is crucial for both monitoring and being a part of behaviour management and behaviour change
- use reliable and valid measurement of outcomes as well as fidelity to the model.

Implementation quality

Implementation, the process of integrating evidence systematically into human service practice, has received growing attention as a central factor contributing to high-quality service delivery and subsequent outcomes (Joyce, & Showers, 2002; Durlak, & DuPre, 2008; Lipsey, 2009; Powell et al., 2015). The quality of implementation can be assessed based on at least eight implementation outcomes: the acceptability of an intervention; its uptake; its appropriateness within a given practice context; its costs and feasibility; the degree to which it is implemented with fidelity; its degree of spread and penetration; and its sustainability (Proctor et al., 2011). In the context of this review, implementation concerns the ways in which programs have been implemented as part of the included studies.

To begin with, the major challenge with measuring implementation in this review is that most of the studies provide no information on implementation outcomes (Apsche, 2005 & 2008; Bourain, 1990; Cooper, 2000; Gillis, 2010; Guarrino-Ghezzi, 1998; Hains, 1986; Lab 1993; Laing et al., 2014; Levit, 2015; Mathe, 2007; Morton-Bourgon, 2005; Pithers, 1989; Stein, 1988). The remaining studies include limited information that does not concentrate on any one element of implementation.

Implementation fidelity

Fidelity (or the degree to which a program has been implemented as intended by its developers) is one of the most commonly used measures of implementation quality and is the primary measure for this review. The rationale behind this is the assumption that consumers cannot benefit from services they do not receive (Mildon, & Shlonsky, 2014; Browne et al., 2014), the included studies are limited in their information about implementation, and there is variation in outcomes, even among similar programs (for example, MST and CBT). Several aspects of an intervention contribute to its fidelity (for example, the required level of intensity and duration of delivery, requisite professional background and training of eligible providers, and the clinical principles that therapists must display while delivering the intervention). Thus, several indicators may point to the presence or absence of fidelity in program delivery, and these may extend to consumer satisfaction or attendance rates. In some cases, there may even be fidelity measures available, either crafted by program developers or provider organisations that aim to systematically track their program implementation.

Only two of the included studies assess whether therapists applied the intervention with *fidelity*. Both studies were testing MST (Borduin, 2001; Letourneau, 2009), which is a centrally administered program with a number of standard fidelity measures that have been

developed over time. In Letourneau (2009), fidelity was assessed by adherence to quality assurance procedures, including weekly on-site supervision sessions, weekly consultations with MST experts, quarterly booster training sessions, and monthly completion of the MST Therapist Adherence Measure (TAM), a tool that evaluates whether the nine clinical principles that are core to MST were applied in practice. Although the authors state that TAM measures were somewhat lower than expected, based on a cited transportability study, they seemed unconcerned due to the high (91%) completion rate in the treatment group and the fact that length of treatment was similar for MST applied to this population elsewhere. Although the Borduin (2001) study was conducted before many of these fidelity procedures were fully articulated, they appear to contain a good number of the precursors to the more formal methods and, based on a qualitative appraisal of the article, generally adhere to what is known as MST. In particular, therapists' qualifications, supervision, expert consultation and continued training were present. As well, therapists were required to note the specific use of principles (similar to the TAM). The Borduin (2001) study showed significant and large effects on decreasing sexual offences and a number of secondary outcomes. While Letourneau's findings were less impressive, there were some positive self-reported findings regarding youths' thoughts/behaviours associated with potentially sexually harmful behaviour. Taken together, it appears that the steps taken by MST practitioners toward assessing and ensuring model fidelity are advisable and may improve outcomes.

Attendance and consumer satisfaction

Less compelling but still important assessments of implementation can be gleaned from other included studies. Attendance rates and levels of consumer satisfaction are indicators of fidelity for treatments that build on the skilful application of engagement processes in working with children and families. For them, low rates of attendance and satisfaction among clients may indicate inadequate adherence to engagement protocols as defined by the program.

One group of studies (Bonner 1999; Byrne 1999; Erickson, 2008; Graves, 1992; Seabloom 2003; Worling, 1998) provides information on the attendance rate among study participants, all of which are variable with respect to their actual rates and definitions of treatment completion. One study defined completion as consumers attending a program for at least one month (Seabloom, 2003), whereas others set attendance at a minimum number of sessions as a threshold criteria for separating completers from non-completers (Bonner, 1999; Byrne 1999; Graves, 1992). Dropout rates – the number of consumers leaving programs without completing treatment – are fairly high for some of the studies (for example, Worling, 1998) and may indicate great variety in implementation quality across studies.

A smaller group of three studies (Boswell, 2002; Piliero 1998; and Weinrott, 1997) applied measures of consumer satisfaction, but in very different ways. The relatively high levels of satisfaction did not appear to be connected to outcomes, which was not surprising. Satisfaction is not an indication of a positive outcome – given the known social desirability

effects of treatment and/or research – and withdrawers were not measured but may have left because they were dissatisfied.

Costs

Finally, two studies (Lambie, 2007; Wieckowski, 2004) provided information about the costs of interventions. Cost information can be used as an indicator of implementation quality in that variation in cost for the same program carried out in different settings may point to variation in implementation quality across sites. However, this approach requires a comprehensive financial evaluation of program implementation, which neither of the studies included. Instead, they only provided average costs per client for their tested programs, did not include site-specific data, and do not use long-term follow-up to assess use of resources over time. Importantly, the studies included in this review do not represent all available studies and there are likely to be other cost–benefit studies in the literature that are not RCTs or QEDs.

Taken together, the information available on the quality of the implementation of interventions among included studies is sparse. The strongest findings come from the highly controlled MST studies, and these indicate that model fidelity can and should be measured, and that it may be related to more positive outcomes.

Implementability of programs

The term 'implementability' refers to different aspects of a program that make it replicable and applicable in contexts different from the one in which it has been tested. The concept of implementability is rooted in Rogers's (1995) theory of innovation diffusion, which suggests that the uptake of innovations depends on five perceived attributes of an innovation. The table below briefly characterises these innovations.

Table 10. Attributes leading to uptake of innovation

Attribute	**Characteristic**
Relative advantage	The innovation is perceived as being better than the program, practice or policy it replaces.
Compatibility	The innovation fits with the traditions, values, culture and needs of the individuals and organisations that adopt the innovation.
Complexity	The innovation is perceived as complicated and difficult to apply.
Trialability	The innovation can be tested and tried prior to full implementation.
Observability	The results from adopting the innovation are easily observable.

The relevance of this theory for the implementation of evidence-based practice in human services has been documented in the literature (Scott et al., 2008; Chaudoir et al., 2013). In applying it to the context of child PSB, it underlines the importance of program features that enhance the accessibility and usability of treatments for practitioners and service agencies.

Hence, the existence of a manual and clearly described content for basic and/or continuous training are aspects that promote a program's implementability. Profiles that describe the required pre-qualifications for professionals wanting to apply a given program or financial plans that help costing and resourcing a program also assist implementability. With this and additional indicators of implementability in mind, included studies were screened for information about program elements that enhance their implementability.

The transport of existing programs into new contexts requires consideration about what it takes to make them work across settings. Most of the studies included in the review do not provide or refer to specifics beyond describing the qualifications of staff members who delivered the service (not specifying whether this was required). Eight studies appeared to rely on a manualised program (Apsche, 2005 & 2008; Bonner, 1999; Borduin, 1990 & 2001; Erickson, 2008; Graves, 1992; Letourneau, 2009) that was implemented as a new, innovative practice outside the routine repertoire of the service agency. However, with the exception of the MST studies (Borduin, 1990 & 2001; Letourneau, 2009), beyond the information that a manual exists, little additional information was included about the clinical content of programs, training approaches and necessary professional qualifications.

A second group of studies (Boswell, 2002; Byrne, 1999; Cooper, 2000; Lab, 1993; Lambie, 2007; Levit, 2015) evaluates what can be described as 'routine practice programs' that appear to have been in operation for some time and make up the standard service provision within a given setting. For these, implementability information varies greatly and is tied tightly to a specific practice context. The availability of materials describing the content and implementation of the program may have to be sourced from the authors or may be contained in grey literature or published articles that were not included in this review.

In sum, the coverage of issues relating to the implementation of evaluated programs and their implementability is poor among these studies, with the exception of the highly controlled, manualised evaluations of MST.

Current practice in Australia

There is a diverse range of services across Australia, and service availability is different between and, in some cases, within jurisdictions. Services are not uniformly available in all jurisdictions and in some jurisdictions services are not available in one or more of the three target populations of this evaluation (Flanagan, 2003; O'Brien, 2010).

There are a number of evaluations of Australian services, some published or otherwise publicly available (for example, conference presentations, and agency or government websites), and others not. For this report, we were only able to include publicly available evaluations.[7] We used the prior search strategy to obtain any published (peer-reviewed or grey) Australian evaluations. We also relied on the Royal Commission and other experts to identify publicly available evaluations gathered as part of their extensive enquiries into Australian services.

Service evaluations

Publicly available evaluations of services in Australia and research into their outcomes are scarce. Only one of the eligible studies relates to an Australian service (Laing et al., 2014), which is the New Street Adolescent Service. KPMG independently evaluated the service in 2014 and their report is available at www.kidsfamilies.health.nsw.gov.au/media/329892/final-new-street-evaluation-report.pdf

In Australia, the limited evidence suggests that parents, families and professionals have trouble locating services for children who display harmful or problematic sexual behaviours (O'Brien, 2010). Once children reach the age of 10, the potential for criminality (that is, prosecution and potentially lifelong consequences) introduces new challenges in terms of help-seeking and help-finding. Children aged 10–17 displaying HSB may not enter the statutory/justice system for a variety of social and legal reasons. Entering treatment voluntarily raises issues of exposure to legal and social sanctions, which can be a disincentive to come forward. Families may fear that their child will be prosecuted, forced into out-of-home care, excluded from formal education, have restricted movement and associations, and face lifelong consequences relating to employment and child-related activities. Victoria is the only Australian jurisdiction that has considered this in the design and implementation of an integrated legal and therapeutic response, and does so by providing Therapeutic Treatment Orders (TTO). TTO service participants are mandated by legal process, but are not subject to the usual statutory/justice response and its associated consequences.

New South Wales has its own therapeutic treatment legislation (s 75 *Children and Young Persons (Care and Protection) Act 1998* (NSW)), which has been in place since 2000, but it has not been implemented in the same way as Victoria's legislation. As yet, no state other than Victoria provides diversion to treatment for children aged 10–17. South Australia (Mary

7 The final Royal Commission report may include other submissions.

Street) and Queensland (Mater Youth and Family Counselling Service) provide alternatives through health services, but these are statutory/justice system responses provided as part of a youth justice conferencing process.

Evaluations have identified significant non-completion rates in voluntary services in Australia and other countries. Reasons for non-completion have not been extensively studied, but non-completers appear to be at greatest risk of repeating HSB. For this reason, research of non-completers is recommended, including evaluation of the effect of the legal and social frameworks in which services are delivered. Given the potentially serious social and legal ramifications of being labelled an offender, it can be reasonably assumed that the perceived safety and certainty of a legal outcome is relevant to both reluctance to engage with services and non-completion of services. Moreover, as previously noted in the evidence review, it cannot be assumed that treatment leavers would have better outcomes if they had completed treatment. The reality is that non-completers may comprise a different population – one that has more serious problems that must be dealt with differently.

Overall, there is relatively little information about the incidence of PSB and HSB in Australia; therefore, little is known about the population except what has been observed in treatment settings (see Table 10). In other words, we do not have strong evidence about who these children are unless they seek or are remanded to treatment. Unfortunately, information about the children who have received, or are in, treatment and their outcomes is also limited due to a general lack of high-quality evaluation studies. This is particularly true for children with PSB aged under 10. There is also very little evidence of focused responses to Aboriginal and Torres Strait Islander children and families across all jurisdictions. Overall, there is limited information about the effectiveness of services with Indigenous communities, community-focused interventions and non-specialist services.

There has also been relatively little research exploring the various Australian service responses and outcomes. Specifically, there have been no RCTs and no long-term, longitudinal studies. Only one study applied a QED (Laing et., 2014). Only two available studies used reasonably good data to measure recidivism (Laing et al., 2014; Allard et al., 2016). The Allard et al. study compared outcomes for Indigenous and non-Indigenous clients and, while still contributing to the generation of evidence, the study did not use a high-quality control or comparison group, which substantially limits its use in drawing any solid conclusions.

While limited evaluations and research have been published in Australia, there are a number of potentially promising policies and practices that can be used to advance the treatment of problem and sexually harmful behaviours. In particular, the New Street evaluation for children aged 10–17 displaying HSB met the fairly rigorous inclusion criteria for this review. Although positive effects specific to decreases in HSB were not found for those completing the New Street program, it is nonetheless encouraging. The completer group experienced a number of positive effects (fewer violent criminal charges, violent reports, non-violent criminal charges and non-violent reports). The service has developed service protocols and specialist training programs; it incorporates a multi-agency approach; and it has been scaled up across multiple sites (Tolliday 2009; 2011; 2012). Importantly, key partners include out-of-home care providers, which has implications for the use of this

program in such institutional settings. The program uses elements that can be further explored, and the service can be further developed and evaluated over time.

Table 11. Known services for the treatment of problem or sexually harmful behaviours in Australian jurisdictions

State/territory	Services for children aged under 10	Voluntary/child protection services – aged 10–17	Statutory/justice
	Program	**Program**	**Program**
Victoria	**Sexually Abusive Behaviours Treatment Services (SABTS)**	**Sexually Abusive Behaviours Treatment Services (SABTS)**	**Male Adolescent Program for Positive Sexuality (MAPPS)**
Australian Capital Territory	Melaleuca Place	Nil specified	Previously used adult corrections to deliver services, but this ceased in 2011. Now individual treatment is used
New South Wales	NSW Health Under 10s PSB	**New Street Adolescent Services**	**Juvenile Justice Sex Offender Program (SOP) ceased in 2015.** Replaced by individual treatment in 2015
	Sparks (Hunter New England Local Health District)	**New Pathways Residential** (Program Closure announced April 2017)	
Queensland	Laurel House (Sunshine Coast) Phoenix House (Bundaberg)	Child and Youth Forensic Outreach Service (CYFOS)	Corrective Services (youths aged 17 and older enter adult system)
			Griffith Youth Forensic Service, Griffith University
			Mater Youth and Family Counselling Service
Northern Territory	Mobile Outreach Service Plus (MOS Plus) program	MOS Plus program	Department of Correctional Services – Youth Sex Offending Program. For individual treatment, wherever possible, parent or guardian is informed
	Sexual Assault Referral Centre		
Western Australia	Child Sexual Abuse Therapeutic Services (CSATS)	CSATS 3 funded NGO providers	Corrections – individual treatment
South Australia	Sexualised Behaviour Therapy Program	Nil specified	**Adolescent Sexual Abuse Prevention Program – Mary Street* (Closed in June 2016)**
	Forensic Psychological assessment of children under 7yo		Youth Justice Psychology Services
Tasmania In Tasmania, there are no PSB-specific programs or evaluations and services must be provided by other named programs/services. Other possible	Sexual Assault Support Service (SASS) Laurel House	Community Forensic Mental Health Services	None identified
	Family Violence Counselling and Support Service – Child & Young Persons Program	Family Violence Counselling and Support Service – Child &Young Persons Program	

service providers include the Child Trauma Service and Therapeutic Residential Care.			
Specialist services in bold			

Discussion

This review used a combination of methods to find out, and set in the Australian context, what can be considered 'current best evidence' for treating children with PSB or HSB, and those who have sexually offended. It is important to treat problem and harmful sexual behaviours, given that sexual abuse by peers is one of the main forms of sexual abuse today. Although the evidence review was conducted for the Royal Commission, the review was not limited to assessing the evidence for treating such behaviours by children only in institutional care. Prior reviews that limited research to this population yielded few studies and even those found were of questionable methodological integrity for answering treatment effectiveness questions. More importantly, virtually all children have contact with institutions, whether these are schools, religious institutions, sports clubs or out-of-home care providers. Thus, the basic principles of effective treatment should apply to all children, though there will always be the need for adjustments according to context.

Two major sources of information were used for this evidence review. First, a rapid evidence assessment of the international literature was conducted using a range of systematic review methods to find out which programs and approaches have been found by rigorous experimental research methods to be effective. Second, publicly available Australian evaluation studies identified by the Royal Commission were separately synthesised and assessed. The evidence assessment used comprehensive, transparent and replicable search strategies, explicit screening and data extraction methods, and a combination of narrative synthesis and meta-analysis to explain the findings.

Implications of findings

Children displaying problem and harmful sexual behaviours should be provided with a service that has the potential to change their behaviour. Additionally, the service should be evaluated consistently and rigorously to maintain and improve its quality. O'Brien in a report for the Australian Crime Commission found a number of children displaying PSB or HSB did not have access to a therapeutic service and, even if they did, it was unclear whether the service was effective. Further there were substantial variations within jurisdictions which meant some children in some locations did not receive a service (O'Brien, 2010). This is despite the Australian Government's commitment, outlined in the

National Framework for Protecting Australia's Children 2009–2020 (outcome 6.2)[8], to investigate best-practice therapeutic treatment programs. Thus, even if seeking treatment, families are not told about the relative effectiveness of available services. There is an unanswered policy question: Why is it that children displaying PSB or HSB in some jurisdictions receive a service (of any kind connected to these behaviours) and children in other jurisdictions do not? This extends to variations within most jurisdictions, which mean some children in some locations do not receive a service. Results from this rapid evidence assessment suggest there are potentially effective approaches to dealing with PSB and HSB, and all children displaying these behaviours should have the opportunity to be assessed and receive an effective service to avoid escalation and/or prevent other children from being harmed. Reform efforts in Victoria in which the legal frameworks that guide state policy were amended and appeared to provide a top down imperative to at least address the availability of therapeutic services for children with PSB and HSB may warrant consideration as part of a national commitment to addressing this issue adopted.

Parent/caregiver intermediated interventions

The evidence from this review suggests it may be worthwhile to invest in behavioural interventions that are mediated by parents or caregivers that also address other issues in a child's environment. The notion that it is enough to simply send a child to a therapist for an hour a week to decrease PSB or HSB, without including behaviour change strategies at home, should be dispelled. Any investments should include providing resources for training and ensuring that universities and certificate programs teach students the skills to deliver modern behavioural change strategies. The evidence also suggests that services should be delivered in an individual, rather than a group, format. An individual approach addresses the problem of mixing boys and girls in the same group, and removes the potential for harmful peer contagion effects. Younger children with PSB, a group we do not have much treatment evidence for, may benefit from material included in high-quality, effective parenting programs that teach parents and caregivers – the people with whom they spend the most time – how to manage difficult behaviour. While many of these programs are delivered in a group format, they can be adapted to be delivered individually.

One program, MST, was found to be potentially effective for children aged 10–17 with HSB. This finding concurs with a rigorous systematic review commissioned by the Swedish Government (Swedish Council on Health Technology Assessment, 2011), which found MST to be promising for offenders who pose a moderate risk. Not surprisingly, MST uses an individual, parent/caregiver-mediated, behavioural approach. Moreover, MST does not involve having a fixed number of sessions that deliver the same content to all who attend. Rather, it uses a range of interventions, including therapeutic approaches like CBT, within an ecosystemic framework that attempts to provide these interventions while working to ensure that the environment in which the young person lives supports changes in behaviour rather than undermining progress. MST also works across provider systems, perhaps helping to streamline and coordinate services that might not otherwise work well together.

8 See https://www.dss.gov.au/sites/default/files/documents/child_protection_framework.pdf

Holistic, ecosystemic treatment approaches

There is no secret recipe for effective MST (the elements are present for all to see: individually delivered, family focused, contextually sensitive and behaviourally based). But the developers have packaged these elements together well and work hard to achieve fidelity to the model, including the types of training and coaching that this approach requires. If MST or a similar program is not available, providers would be well advised to use similar holistic approaches that work toward achievable and measurable outcomes – and they should be incentivised to do so. It should be standard practice to use a collaborative, multi-agency approach to deliver promising and preferred treatment that focuses on holistic, eco-systemic and family/caregiver elements that support the young person and their family. Engaged multi-systems appear to have the best chance of working – and purely clinical approaches that focus on the individual child while paying little attention to their wider environment appear of limited value. This is the evidence base, and it is the authors' opinion that spending funds on something else is likely to be a waste of money, and worse, risks a greater number of children continuing these behaviours, harming other children along the way.

We did not find any direct evidence supporting or opposing integrated services that connect victim services with therapeutic services for children (and their families) who have sexually harmed. An integrated service may be important when the victim and harming child are related (for example, siblings) or have other enduring connections. However, in considering what will be required to deliver a high-quality, effective service, it is unlikely that the necessary range of expertise and associated service providers can be made available in every jurisdiction. If integration offers the type of efficiency that translates to better services for more children, it should be pursued rather than further dispersing an already fragmented system. In addition, while not tested as such, an integrated service probably fits well within an ecosystemic framework. The therapeutic treatment services should also be integrated with the network of institutions and services supporting the child(ren) and family. From the perspective of the child and family, the service response should be coordinated and 'make sense', with no duplication or inconsistent message regarding support, safety and therapeutic services.

Improving out-of-home care

Given the recommendation to use family/caregiver-mediated services, the challenge of working with children in out-of-home care is no small matter. There is also very little strong evidence in the treatment literature that specifically focuses on PSB or HSB in out-of-home care. The reality is that children in such care probably need more and better services. Even if they did not have PSB or HSB behaviours, their outcomes in general tend to be poor. It is incumbent upon out-of-home care providers to do all within their power to provide an environment that offers children who have been harmed assistance to recover and an opportunity to thrive.

There are steps being taken in some jurisdictions, most notably New South Wales, to move to an outcomes-based approach to providing out-of-home care services. The NSW Government's Quality Assurance Framework (Mildon, Shlonsky, Michaux, & Parolini, 2015)

covers the three overarching goals of most modern-day child welfare systems (child safety, permanency and wellbeing), and within these are arrayed seven more detailed domains (safety, permanency, cognitive functioning, physical health and development, mental health, social functioning, and cultural and spiritual identity). Each domain is further broken down by child developmental stage (infancy; early childhood and middle childhood; and adolescence) to reflect the fact that the inputs, outputs and outcomes within each domain are dependent upon the changing needs of children as they mature. Treatment for PSB or HSB, and placement into family-like settings for youths who have sexually offended, can easily fit within such a framework. The framework would also operate for other children in the home, who may or may not have a history of PSB or HSB, so keeping them safe would be equally important. Safety would also be addressed when applying the framework individually for all children in the household. It can be difficult to make a decision about whether to remove a child with a history of PSB or HSB permanently from the family home, due to the risk posed to other children. In addition, such a decision may be made without the child benefiting from effective treatment. Before such drastic action is taken, effective services and adequate monitoring strategies for the behaviour should be carefully considered.

Investment in high-quality infrastructure

Investments in infrastructure at national and jurisdictional levels are needed to adequately respond to problem and harmful sexual behaviours by children. This would ensure that services for children displaying PSB or HSB are available, contain elements that are likely to work, and also measure outcomes well. There are some good practices in Australia that can be built on and developed.

To a certain extent, existing training programs can be leveraged to establish curriculums and standards based on evidence from this and other high-quality reviews. One of the main conditions required for proper implementation of services is that staff members have the necessary skills to deliver the service. Workforce qualifications and training standards need to be clearly benchmarked, as do supervision and ongoing training. In one jurisdiction, New South Wales, the Office of the Children's Guardian has established minimum standards for services (https://www.kidsguardian.nsw.gov.au/about-us/offender-counsellors). While this is encouraging, the requirements for effectively treating the complexities associated with PSB and HSB, as observed in the included studies in this review, generally exceed these minimum standards. Moreover, most of the potentially effective approaches described use staff members with a fairly high level of education and/or training.

However, putting standards in place is unlikely to be sufficient to ensure delivery of high quality services. To build upon and use the existing skills and desired traits of staff members, a well-considered improvement process may be the difference between a program succeeding or failing to improve outcomes. Generally, continuous quality improvement implies investing in individuals, systems, structures and agencies to build and maintain a professional culture that is centred around three core practice principles: systematic, data-guided activities; practices designed with local conditions in mind; and iterative

development and testing of interventions (Rubenstein et al., 2014). The continuous quality improvement process should include:

1. staff members with minimum competencies or the potential and motivation to meet these
2. training that is underpinned by high-quality supervision and coaching
3. use of data to continuously evaluate implementation success (for example, fidelity) and individual outcomes for clients
4. use of a model (such as MST) that has been found to be effective with the same or similar populations. If this is not possible, then building on effective practices within existing programs, eventually building into a specialised service that can demonstrate its effectiveness, is recommended.

Limitations of this review

Reviews in the public space should be rigorous and include information that is useful. In this review, we have attempted to strike a balance between being cautious and being informative, but this can be a difficult line to maintain. There is a danger that being too conservative with evidence from studies can lead to missing potentially useful information. Relying on lesser forms of evidence can mean that poor or incorrect information is used to inform important decisions.

As with any such review, we have strayed into grey areas. In terms of methodological rigour, the review does not conform to all established standards for synthesis, which are best detailed by Cochrane (*Cochrane Handbook for Systematic Reviews of Interventions*) and the Campbell Collaboration (The Methods Group of the Campbell Collaboration, 2016). Such reviews take considerable time to complete and the approach, in its entirety, was simply not feasible. Within time and resource constraints, the review developed a strong, a-priori search specification, executed a transparent and replicable literature search covering numerous scholarly databases, extracted and double-checked information contained in the reviews, and included a meta-analysis to obtain an overall sense of effect size as well as whether this was moderated by family focused services. However, our narrative around the findings that were not quantitatively synthesised and its extension to the Australian context, while attempting to be as measured as possible, inevitably includes a dose of subjective opinions. This is tempered somewhat by the inclusion of content experts on the review team and use of language that reflects uncertainty, and some subjectivity is clearly present. A problem that plagues many reviews of evidence is that the included studies have their own biases. We attempted to partially deal with this problem by using an adaptation of the Maryland Scientific Methods Scale (Sherman et al., 1997) to rate the quality of studies on several dimensions. However, this approach is not equivalent to a full assessment of risk of bias as is found in other approaches (for example, see Grades of Recommendation, Assessment, Development and Evaluation Working Group (GRADE) by the Cochrane Collaboration). An area of particular concern is that the developers of the programs and services tested conducted much of the research included in the evidence assessment. This should be kept in mind when interpreting the results of this review.

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Appendices

Appendix A: Full search strategy

Table A1. Search terms for the electronic database search

Participant terms	Problem issue terms	Program terms	Research design terms
juvenile*	sex* "problem behaviour"	treatment	random*
child*	sex* "problem behaviour"	counselling	RCT
youth	sexual* "abusive behaviour"	therap*	experiment*
adolescen*	sexual* "abusive behaviour"	program	"control group"
minor*	"sex* offen*" "sexual* devian*"	intervention rehabilitat*	"comparison group" "control condition" "no-treatment group" "no treatment group" evaluat* impact effectiveness causa* posttest "post-test" Pretest "pre-test" baseline "regression discontinuity" "propensity score*" "meta-analysis" "meta analysis" "systematic review" Quantitative "quasi-exper*" efficacy "treatment effects"

PsycINFO

- From January 01 1980 to December 31 1989; Results: 11
- From January 01 1990 to December 31 1999; Results: 74
- From January 01 2000 to December 31 2009; Results: 161
- From January 01 2010 to present; Results: 121
- Total: 367

ti,ab((juvenile* OR child* OR youth OR adolescen* OR minor*) AND ti,ab((sex* NEAR/2 “problem behaviour”) OR (sex* NEAR/2 “problem behaviour”) OR (sex* NEAR/2 “behaviour problem”) OR (sex* NEAR/2 “behaviour problem”) OR (sexual* NEAR/2 “abusive behaviour”) OR (sexual* NEAR/2 “abusive behaviour”) OR “sexual offen*” OR “sexual* devian*”) AND ti,ab(treatment OR counselling OR therap* OR program OR intervention OR rehabilitat*) AND ti,ab(random* OR RCT OR experiment OR experimental OR "control group" OR "comparison group" OR "control condition" OR "no-treatment group" OR "no treatment group" OR evaluat* OR impact OR effectiveness OR causa* OR posttest OR "post-test" OR pretest OR "pre-test" OR baseline OR "regression discontinuity" OR "matched group" OR "propensity score*" OR "meta-analysis" OR "meta analysis" OR "systematic review" OR quantitative OR "quasi-exp*" OR efficacy OR "treatment effects"))

Dissertations and theses

- From 1 January 1980 to 31 December 1989 – results: 11
- From 1 January 1990 to 31 December 1999 – results: 46
- From 1 January 2000 to 31 December 2009 – results: 75
- From 1 January 2010 to present – results: 29
- Total: 161

ti,ab((juvenile* OR child* OR youth OR adolescen* OR minor*) AND ti,ab((sex* NEAR/2 “problem behaviour”) OR (sex* NEAR/2 “problem behaviour”) OR (sex* NEAR/2 “behaviour problem”) OR (sex* NEAR/2 “behaviour problem”) OR (sexual* NEAR/2 “abusive behaviour”) OR (sexual* NEAR/2 “abusive behaviour”) OR “sexual offen*” OR “sexual* devian*”) AND ti,ab(treatment OR counselling OR therap* OR program OR intervention OR rehabilitat*) AND ti,ab(random* OR RCT OR experiment OR experimental OR “control group” OR “comparison group” OR “control condition” OR “no-treatment group” OR “no treatment group” OR evaluat* OR impact OR effectiveness OR causa* OR posttest OR “post-test” OR pretest OR “pre-test” OR baseline OR “regression discontinuity” OR “matched group” OR “propensity score*” OR “meta-analysis” OR “meta analysis” OR “systematic review” OR quantitative OR “quasi-exp*” OR efficacy OR “treatment effects”))

ERIC

- From 1 January 1980 to 31 December 1989 – results: 4
- From 1 January 1990 to 31 December 1999 – results: 7
- From 1 January 2000 to 31 December 2009 – results: 23
- From 1 January 2010 to 2013 – results: 8

- Total: 42

ti,ab((juvenile* OR child* OR youth OR adolescen* OR minor*) AND ti,ab((sex* NEAR/2 “problem behaviour”) OR (sex* NEAR/2 “problem behaviour”) OR (sex* NEAR/2 “behaviour problem”) OR (sex* NEAR/2 “behaviour problem”) OR (sexual* NEAR/2 “abusive behaviour”) OR (sexual* NEAR/2 “abusive behaviour”) OR “sexual offen*” OR “sexual* devian*”) AND ti,ab(treatment OR counselling OR therap* OR program OR intervention OR rehabilitat*) AND ti,ab(random* OR RCT OR experiment OR experimental OR “control group” OR “comparison group” OR “control condition” OR “no-treatment group” OR “no treatment group” OR evaluat* OR impact OR effectiveness OR causa* OR posttest OR “post-test” OR pretest OR “pre-test” OR baseline OR “regression discontinuity” OR “matched group” OR “propensity score*” OR “meta-analysis” OR “meta analysis” OR “systematic review” OR quantitative OR “quasi-exp*” OR efficacy OR “treatment effects”))

Sociological abstracts

- From 1 January 1980 to 31 December 1989 – results: 1
- From 1 January 1990 to 31 December 1999 – results: 3
- From 1 January 2000 to 31 December 2009 – results: 23
- From 1 January 2010 to present – results: 22
- Total: 49

ti,ab((juvenile* OR child* OR youth OR adolescen* OR minor*) AND ti,ab((sex* NEAR/2 “problem behaviour”) OR (sex* NEAR/2 “problem behaviour”) OR (sex* NEAR/2 “behaviour problem”) OR (sex* NEAR/2 “behaviour problem”) OR (sexual* NEAR/2 “abusive behaviour”) OR (sexual* NEAR/2 “abusive behaviour”) OR “sexual offen*” OR “sexual* devian*”) AND ti,ab(treatment OR counselling OR therap* OR program OR intervention OR rehabilitat*) AND ti,ab(random* OR RCT OR experiment OR experimental OR “control group” OR “comparison group” OR “control condition” OR “no-treatment group” OR “no treatment group” OR evaluat* OR impact OR effectiveness OR causa* OR posttest OR “post-test” OR pretest OR “pre-test” OR baseline OR “regression discontinuity” OR “matched group” OR “propensity score*” OR “meta-analysis” OR “meta analysis” OR “systematic review” OR quantitative OR “quasi-exp*” OR efficacy OR “treatment effects”))

Social services abstracts

- From 1 January 1980 to 31 December 1989 – results: 4
- From 1 January 1990 to 31 December 1999 – results: 11
- From 1 January 2000 to 31 December 2009 – results: 30
- From 1 January 2010 to present – results: 15
- Total: 60

ti,ab((juvenile* OR child* OR youth OR adolescen* OR minor*) AND ti,ab((sex* NEAR/2 “problem behaviour”) OR (sex* NEAR/2 “problem behaviour”) OR (sex* NEAR/2 “behaviour problem”) OR (sex* NEAR/2 “behaviour problem”) OR (sexual* NEAR/2 “abusive

behaviour") OR (sexual* NEAR/2 "abusive behaviour") OR "sexual offen*" OR "sexual* devian*") AND ti,ab(treatment OR counselling OR therap* OR program OR intervention OR rehabilitat*) AND ti,ab(random* OR RCT OR experiment OR experimental OR "control group" OR "comparison group" OR "control condition" OR "no-treatment group" OR "no treatment group" OR evaluat* OR impact OR effectiveness OR causa* OR posttest OR "post-test" OR pretest OR "pre-test" OR baseline OR "regression discontinuity" OR "matched group" OR "propensity score*" OR "meta-analysis" OR "meta analysis" OR "systematic review" OR quantitative OR "quasi-exp*" OR efficacy OR "treatment effects"))

PubMed

- From 1 January 1980 to 31 December 1989 – results: 1
- From 1 January 1990 to 31 December 1999 – results: 8
- From 1 January 2000 to 31 December 2009 – results: 20
- From 1 January 2010 to present – results: 28
- Total: 57

(juvenile*[tiab] OR child*[tiab] OR youth[tiab] OR adolescen*[tiab] OR minor*[tiab]) AND ((sex* problem behaviour [tiab]) OR (sex* problem behaviour [tiab]) OR (sex* behaviour problem [tiab]) OR (sex* behaviour problem [tiab]) OR (sexual* abusive behaviour[tiab]) OR (sexual* abusive behaviour[tiab]) OR (sexual offen*[tiab]) OR (sexual* devian*[tiab])) AND (treatment[tiab] OR counselling[tiab] OR therap*[tiab] OR program[tiab] OR intervention[tiab] OR rehabilitat*[tiab]) AND (random*[tiab] OR RCT[tiab] OR experiment*[tiab] OR (control group[tiab]) OR (comparison group[tiab]) OR (control condition[tiab]) OR (no-treatment group[tiab]) OR (no treatment group[tiab]) OR evaluat*[tiab] OR impact[tiab] OR effectiveness[tiab] OR causa*[tiab] OR posttest[tiab] OR (post-test[tiab]) OR pretest[tiab] OR (pre-test[tiab]) OR baseline[tiab] OR (regression discontinuity[tiab]) OR (matched group[tiab]) (propensity score*[tiab]) OR (meta-analysis[tiab]) OR (meta analysis[tiab]) OR (systematic review[tiab]) OR quantitative[tiab] OR efficacy[tiab] OR (treatment effects[tiab]) OR (causal-comparative[tiab]))

CINAHL

- From 1 January 1980 to 31 December 1989 – results: 0
- From 1 January 1990 to 31 December 1999 – results: 11
- From 1 January 2000 to 31 December 2009 – results: 48
- From 1 January 2010 to present – results: 24
- Total: 83

TI((juvenile* OR child* OR youth OR adolescen* OR minor) AND ((sex* N2 "problem behaviour") OR (sex* N2 "problem behaviour") OR (sex* N2 "behaviour problem") OR (sex* N2 "behaviour problem") OR (sexual* N2 "abusive behaviour") OR (sexual* N2 "abusive behaviour") OR ("sex* offen*") OR ("sexual* devian*")) AND (treatment OR counselling OR therap* OR program OR intervention OR rehabilitat*) AND (random* OR ("RCT") OR ("experiment") OR ("experimental") OR ("control group") OR ("comparison group") OR

(“control condition”) OR (“no-treatment group”) OR (“no treatment group”) OR (evaluat*) OR (“impact”) OR (“effectiveness”) OR (causa*) OR (“posttest”) OR (“post-test”) OR (“pretest”) OR (“pre-test”) OR (“baseline”) OR (“regression discontinuity”) OR (“matched group”) OR (propensity score*) OR (“meta-analysis”) OR (“meta analysis”) OR (“systematic review”) OR (quantitative) OR (quasi-exp*) OR (“efficacy”) OR (“treatment effects”))

OR

AB((juvenile* OR child* OR youth OR adolescen* OR minor) AND ((sex* N2 “problem behaviour”) OR (sex* N2 “problem behaviour”) OR (sex* N2 “behaviour problem”) OR (sex* N2 “behaviour problem”) OR (sexual* N2 “abusive behaviour”) OR (sexual* N2 “abusive behaviour”) OR (“sex* offen*”) OR (“sexual* devian*”)) AND (treatment OR counselling OR therap* OR program OR intervention OR rehabilitat*) AND (random* OR (“RCT”) OR (“experiment”) OR (“experimental”) OR (“control group”) OR (“comparison group”) OR (“control condition”) OR (“no-treatment group”) OR (“no treatment group”) OR (evaluat*) OR (“impact”) OR (“effectiveness”) OR (causa*) OR (“posttest”) OR (“post-test”) OR (“pretest”) OR (“pre-test”) OR (“baseline”) OR (“regression discontinuity”) OR (“matched group”) OR (propensity score*) OR (“meta-analysis”) OR (“meta analysis”) OR (“systematic review”) OR (quantitative) OR (quasi-exp*) OR (“efficacy”) OR (“treatment effects”))

ProQuest – Criminal Justice Database

- From 1 January 1980 to 31 December 1989 – results: 0
- From 1 January 1990 to 31 December 1999 – results: 6
- From 1 January 2000 to 31 December 2009 – results: 45
- From 1 January 2010 to present – results: 30
- Total: 81

ti,ab((juvenile* OR child* OR youth OR adolescen* OR minor*) AND ti,ab((sex* NEAR/2 “problem behaviour”) OR (sex* NEAR/2 “problem behaviour”) OR (sex* NEAR/2 “behaviour problem”) OR (sex* NEAR/2 “behaviour problem”) OR (sexual* NEAR/2 “abusive behaviour”) OR (sexual* NEAR/2 “abusive behaviour”) OR “sexual offen*” OR “sexual* devian*”) AND ti,ab(treatment OR counselling OR therap* OR program OR intervention OR rehabilitat*) AND ti,ab(random* OR RCT OR experiment OR experimental OR “control group” OR “comparison group” OR “control condition” OR “no-treatment group” OR “no treatment group” OR evaluat* OR impact OR effectiveness OR causa* OR posttest OR “post-test” OR pretest OR “pre-test” OR baseline OR “regression discontinuity” OR “matched group” OR “propensity score*” OR “meta-analysis” OR “meta analysis” OR “systematic review” OR quantitative OR “quasi-exp*” OR efficacy OR “treatment effects”))

NCJRS abstracts

- Total: 373 (17 abstracts eligible added)

“Child sex offender”, “juvenile sex offender”, “problem sex* behaviour”, “sex* problem behaviour”, “sexual* abusive behaviour”, and “sexual* devian*”

Appendix B: Bibliography of eligible and ineligible studies

Eligible

Apsche, J. A., Bass, C. K., & Houston, M. A. (2008). Family mode deactivation therapy as a manualised cognitive behavioural therapy treatment. *International Journal of Behavioural Consultation and Therapy*, 4(2), 264-275. doi:10.1037/h0100848

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