



Systematic Review of Community-Based Interventions
for CHILDREN AND ADOLESCENTS
WITH ADHD AND THEIR FAMILIES

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DE LA SANTÉ AUTOCHTONE

*Effective Public Health Practice Project
(EPHPP)*

*Funding provided by:
National Collaborating Centre for
Aboriginal Health
Grant # RC08-1506*

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for Aboriginal Health, (NCCAHA).
The National Collaborating Centre for
Aboriginal Health supports a renewed
public health system in Canada that is
inclusive and respectful of diverse First
Nations, Inuit and Métis peoples. The
NCCAHA is funded through the Public
Health Agency of Canada and hosted at
the University of Northern British Columbia,
in Prince George, BC. Production of this
report has been made possible through
a financial contribution from the Public
Health Agency of Canada. The views
expressed herein do not necessarily represent
the views of the Public Health Agency of
Canada or of the NCCAHA.*

*The NCCAHA uses an external blind
review process for documents that are
research based, involve literature reviews
or knowledge synthesis, or undertake an
assessment of knowledge gaps. We would
like to acknowledge our reviewers for
the generous contributions of their time
and expertise to this manuscript. This
publication is available for download at:
www.nccah.ca*



ACKNOWLEDGEMENTS



We would like to extend a sincere thank you to:

Margaret Weiss,
Clinical Professor
University of British Columbia
Clinical Head
Provincial ADHD Program
Vancouver, British Columbia, Canada

We would also like to thank our Research Assistants Sharon Peck-Reid and Harpreet Gill for their work on this review.

Russell Schacher, Professor of Psychiatry
Research Director
Division of Child and Adolescent Psychiatry
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for reading this review and providing us with very constructive feedback.



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PREFACE

The Effective Public Health Practice Project (EPHPP) develops and provides systematic reviews of the effectiveness of specific requirements of the Mandatory Health Programs and Services Guidelines (MHPSG). Each review is linked to one of the three general standards or three program standards. The reviews summarize the best available research evidence for public health practice in these areas. Research evidence is one piece of information needed to inform decision making in public health. Other factors, such as the local environment, local priorities, and available resources are also important.

The reviews are conducted by review groups composed of members of the Ontario Public Health Research, Education and Development (PHRED) Program health units as well as representatives from other health units around the province.

Potential review topics are initially identified through a survey of public health practitioners and managers across Ontario. Each review group follows a systematic approach that includes

comprehensive search strategies and quality assessment of each primary research study selected for inclusion in the review.

One of the primary objectives of EPHPP is to ensure that the information is relevant to public health practitioners in the field. We contact Medical Officers of Health, Program Managers and others to ask for volunteer experts to take on the role of peer reviewers for the draft reports.

The EPHPP project has many benefits. Public Health professionals develop skills in conducting systematic reviews and increase their awareness of the importance and feasibility of evidence-based practice. Through this project, we established new links with the Cochrane Collaboration. Reviews are in the process of being registered with the various Cochrane Review Groups, making the reviews accessible to the international public health community. Finally, by providing education, support and a collegial atmosphere in which to expand and share public health research the EPHPP has contributed to the development of a strong province-wide network of public health professionals.



ABSTRACT

Background

This work came about as a result of an earlier literature search conducted by EPHPP for reviews of effective community-based interventions to minimize the negative outcomes of children and youth with Fetal Alcohol Spectrum Disorder (FASD). That search revealed that most papers focused on screening and identification of infants and children with FASD. The papers related to interventions were of poor methodological rigour and most had very small sample sizes. Through discussion between the author's group and Aboriginal partners, a decision was made to undertake a review of reviews of community-based interventions for children with ADHD, a condition that is often co-morbid in Aboriginal children who have a diagnosis of FASD.

Objective

This review of reviews was undertaken in order to glean (gather) the relevant principles and community-based strategies of programs developed for children and youth with ADHD and their families that could be adapted, and may be effective, for Aboriginal children diagnosed with FASD and their families.

Search Strategy

Seven electronic databases were searched by two librarians who developed independent searches using natural language and MeSH terms for the years 1990-April 2008. Those searches were merged and duplicates were removed. Hand-searching of relevant references and key journals was undertaken. Grey literature was searched and key informants were contacted.

Selection Criteria

Studies were included if they were systematic reviews or meta-analysis;

the population of interest was children, youth or adolescents and/or their families; the setting for the intervention was the community (i.e. schools, home, clinics); the interventions included behaviour modification, social behaviour/ social skills training and other types of community based programs. Reported outcomes included child/youth behaviour. Pharmacological interventions alone were not considered relevant for inclusion in this review.

Data Collection and Analysis

There were 172 articles that were relevance tested. Nineteen articles passed the relevance test and were then quality assessed using a standardized tool. Those studies were rated as methodologically "strong," "moderate" or "weak". Data were extracted from reviews that received an overall rating of "strong" (n=6). The data are reported in narrative format.

Main Results

The available reviews provided evidence of interventions with short-term positive effects on the symptomology of ADHD. Most promising were interventions that incorporated a multi-component treatment package. Multi-component treatment modules included behavioural parent training, self-instructional training, and school-based contingency training. Children with ADHD experience problems at home, school and in the community. Interventions should be directed to helping children and families address or cope within and across these settings.

Author's Conclusions

Multi-component community-based programs for children with ADHD could be adopted for Aboriginal families with children with FASD. These programs should be rigorously evaluated and include long-term follow-up.



EPHPP ADHD REVIEW OF REVIEWS



1.0 Introduction

ADHD is a disorder characterized by developmentally inappropriate and impairing inattention, hyperactivity and impulsivity (American Psychiatric Association, 2000). These core features give rise to deficits in social skills, academic performance, and following instructions. It is a chronic condition that persists for many throughout childhood, adolescence and into adulthood (DuPaul & Eckert, 1997). Adults with ADHD are at increased risk for lost years of education, low occupational status, poor social relationships and drug abuse problems, as well as conflicts with the law (Biederman, Wilens, Mick, Faraone, Weber, Curtis et al., 1997).

Most children are diagnosed with ADHD after school entry, when their behaviour becomes an issue in the classroom. Medication, stimulants and

non-stimulants are often the first line of intervention. Medication is effective only for about 70% of those diagnosed with ADHD (Pelham, Wheeler, and Chronis, 1998; Miranda, Jarque, & Tarraga, 2006).

The prevalence of ADHD varies among epidemiological studies. The variation is due to a number of factors including the characteristics of the sample population (e.g. community, school, clinic, age, and gender), methods of diagnosis (e.g. parent versus teacher as informants, check-lists versus interviews), and the rigour with which the diagnostic criteria are applied. Recent work based on DSM IV criteria indicates a prevalence of 7.8% (based on parent report) for ADHD in American school age children (Centers for Disease Control and Prevention, 2005). The American National Institute of Mental Health estimates that between 3-5% of American preschool and school-aged children have ADHD. Other countries

(e.g. Iceland, Australia, Italy and Sweden) have slightly lower rates. Rates for school-aged children and adolescents in Ontario range from 1.4% (adolescent girls) to 7.3% (boys aged 4-11 years) (Offord, Boyle, & Racine, 1989).

Clearly, ADHD is a condition associated with a considerable burden of suffering for parents, children, and for society as a whole. ADHD is a common, lifelong, impairing and treatable condition with implications for public health. This review of reviews was undertaken to answer the following questions:

- Are community-based programs effective in treating children and youth with ADHD and their families?
- What are the components of successful programs that could be incorporated into programs for Aboriginal children/youth with FASD?

2.0 Background

The National Collaborating Centre for Aboriginal Health (NCCA) contracted with the Effective Public Health Practice Project (EPHPP) to conduct a review of reviews of community-based interventions to reduce the symptoms/negative outcomes of Attention Deficit Hyperactivity Disorder (ADHD) among children and adolescents. This work came about as a result of an earlier literature search conducted by EPHPP for reviews of effective community-based interventions to minimize the negative outcomes of children and youth with Fetal Alcohol Spectrum Disorder (FASD). That search revealed that most papers focused on screening and identification of infants and children with FASD. The papers related to interventions were of poor methodological rigour and most had very small sample sizes. In a recent review of interventions for FASD, Premji, Benzie,

Serrett and Hayden (2007) noted that there is limited research evidence to guide interventions for children and youth with FASD. These investigators recommended that multi-component community-based interventions be developed and empirically tested.

Premji et al. (2007) also noted that ADHD is a co-morbid condition in up to 85% of children with FASD. Others have also identified the potential connection between ADHD and FASD (Coles, Platzman, Raskind-Hood, Brown, Falek, & Smith, 1997; O'Malley & Nanson, 2002). This review of reviews was undertaken in order to gather the relevant principles and community-based strategies of programs developed for children and youth with ADHD and their families in the hopes that these strategies could be adapted and effectively used by children

diagnosed with FASD. While the true prevalence of FASD across Canada and among Aboriginal peoples is unknown, there is widespread recognition among Aboriginal communities and population health practitioners and policy makers that FASD is "prevalent and represents a serious health threat in many Aboriginal communities" (Stout, Kipling & Stout, 2001, as cited in Pacey, 2009, p. 5).¹

3.0 Methods

This paper is a review of systematic reviews of community based interventions for children with ADHD and their families. A decision to produce this type of paper was reached after an initial search for systematic reviews on this topic area which were intended to provide the research team with direction for the review. That search provided us with 19 topic relevant



¹For more information about the prevalence & impacts of FASD in Aboriginal communities, please see Pacey, 2009.



systematic reviews or meta-analysis, many of which were produced after 2000. This meant that many of the primary studies that would have been captured through a separate search had already been incorporated in one or more of those systematic reviews and/or meta-analysis. To produce another systematic review would simply be a repeat of work that already existed. At that point a decision was made that we would produce a review of reviews. A review of reviews entailed searching for all relevant systematic reviews or meta-analysis, determining the methodological quality and conducting data extraction from included reviews.

3.1 Search strategy

The literature search for this review was conducted with the services of two independent library professionals. Each librarian, with the assistance of EPHPP

staff, created a search strategy using either natural language terms or MeSH headings. The two librarians constructed different searches which reflect the complexity and variations in terms between the databases searched. Librarian 1 used 68 'natural language' terms or combination of terms (e.g. review*; effectiveness*; ADHD; multi-modal*; counsel*; education*; non-pharmacological*; child*; adolescent*; youth*). Librarian 2 developed a search strategy using MeSH headings. The headings or combination of headings were slightly different for each database. Examples of MeSH headings used include: exp. Attention Deficit Hyper Activity Disorder; exp. counseling; exp. family therapy; exp. behaviour therapy; exp. adolescent; exp. child). The search strategies with the exhaustive list of terms are outlined in Appendix 1. The following databases were searched:

- Cochrane Database of systematic reviews
- ERIC
- Ovid Medline
- PsycINFO
- Cinahl
- EMBASE
- Sociological Abstracts

All databases were searched for the period of January 1990 to April 2008. The searches were combined and duplicates, and titles that were obviously not relevant were removed.

Two reviewers independently scanned the citations and abstracts to identify relevant articles. Citations selected by either reviewer were captured into Reference Manager (Network Edition, Version 11). All potentially relevant citations were retrieved.



Hand-searching of relevant, peer-reviewed journals was conducted for the period of January 2005 to April 2008 (see Appendix 2). Relevant articles were retrieved and added to the database. The reference lists of relevant articles were examined for potential articles to be included.

Key informants submitted articles from the grey literature. Grey literature was also searched using Grey Matters (Canadian Agency for Drugs and Technologies in Health, 2008). All potentially relevant reviews were added to the database.

3.2 Relevance

All articles retrieved from searching multiple databases were subjected to relevance testing. To be relevant, studies had to meet all the following criteria (See Appendix 3):

- The article was a systematic review or meta-analysis.
- The population of interest was children, youth or adolescents and/or their families.
- The setting for the intervention was the community (ie. schools, home, clinics).
- The interventions included behaviour

modification, social behaviour/ social skills training and other types of community based programs. Pharmacological interventions alone were not relevant.

- Reported outcomes included child/ youth behaviour.

The review team was particularly interested in understanding the options available for the 30 percent of children with ADHD for whom medication treatment was not effective. This group would be most comparable with children and youth with Fetal Alcohol Spectrum Disorder because FASD is not treated with medication. Therefore, we excluded reviews in which the primary studies included a combination of medication and non-medication interventions. In reviews of primary studies where medications were an arm of the intervention, only results comparing non-medication interventions with a non-medication control group were extracted.

3.3 Quality assessment

The Effective Public Health Practice Project has developed a tool for assessing the methodological quality of systematic

reviews in public health (Appendix 4). The tool consists of seven questions related to the methodological quality of the review. Two reviewers independently examined each relevant systematic review or meta-analysis to answer the questions provided in the validity tool. Inter-rater reliability was established when the two reviewers independently rated the first 5 articles and met to discuss differences, then rated another 5 articles. All subsequent differences were resolved through discussion. Each question was scored with a “1” if the criteria were met and a “0” if it was not met. Once the ratings were totaled, each review was rated as “strong” (total score of 6-7), “moderate” (total score of 4-5) or “weak” (total score 3 or less) (see Table 1).

3.4 Data extraction and analysis

Data were extracted from reviews that received an overall rating of “strong” (See Table 2). The data are reported in narrative format. The results of the moderate studies are not reported as there were many methodological issues with the primary studies found in those reviews. As well, the moderate reviews had some methodological issues that indicated that

the results might not be generalizable to other populations or intervention settings. It was decided, therefore, that those studies would not be included in this review.

4.0 Results

Figure 1 outlines the number of articles involved in this review. The search for published and unpublished studies resulted in the identification of 301 potentially relevant articles. Two EPHPP staff scrutinized the titles and abstracts independently and articles selected by either reader ($n = 172$) were tagged for relevance testing. The tagged articles were retrieved and reviewed by our review team. Of the 172 articles, 19 were deemed relevant and moved into the quality assessment phase with the following results: six articles were rated as “strong,” eleven were “moderate,” and three were methodologically “weak.”

One of the challenges to providing results for reviews is that many of them did not provide detailed descriptions of the primary studies they included. We developed a list (Table 3) of potential variables that could have an impact on the generalizability of the findings. Many of the variables were not described in the reviews and when they are present in the review, many times there is a lack of detailed information. Those participant variables include age, gender, household composition, socio-economic status (SES), race or co-morbid conditions (Nolan & Carr, 2000; Klassen, Miller, Raina, Lee, & Olsen, 1999). Each review included interventions with children, youth and/or their families with the participant children being in the 0-18 year range. Four of six described the gender, with the majority of the participants being male, consistent with the sex ratio in the general population. Two reviews provided information on household composition. One review provided some information of socio-economic status (SES) of

participants, and one other review analyzed SES but did not provide data that we could report. One review reported on race of the participants, that being white children. Four reviews indicated that the participants had co-morbid conditions such as Oppositional Defiance Disorder, Hyperkinetic Disorder, learning disabilities, and others.

There are methodological issues with the included reviews, many stemming from methodological issues with the primary studies. The most consistent issue with the reviews was that the results were based on small samples. Compliance with treatment was often not measured. Some lacked proper control groups.

All reviews included primary studies that were randomized control trials (RCTs), or other study design with control or comparison groups. The interventions took place in the home, at school, in the community, or at hospital or university

out-patients clinics. Outcome measures included academic achievement, disruptive behaviour at school or in the home, incidence or severity of symptoms associated with ADHD such as inattention, impulsivity and hyperactivity, family function, internalized problems or externalized problems.

Interventions included contingency management, cognitive-behavioural therapy, individual psychotherapy, parent training and education, teacher training and education, parent and family counseling/therapy, and EEG biofeedback or relaxation techniques. Length of the interventions, when reported, was between 2-14 months, with total number of sessions between 7 and 32.

4.1 Findings from strong studies

The strong studies were reviewed to identify cross-over of single studies. Within the six strong studies there were only a moderate number of primary





studies that were included in more than one review. These strong reviews were reported as meta-analyses (four) (Corcoran & Dattalo, 2006; DuPaul & Eckert, 1997; Klassen, et al., 1999; Nolan & Carr, 2000) or narratives (two) (Bjornstad & Montgomery, 2005; Schachar, Jadad, Gauld, Boyle, et al., 2002). The methodologically (six) strong studies are summarized below.

Bjornstad & Montgomery (2005) looked at the question of whether family therapy without medication would reduce the core symptoms of ADHD as compared to no-treatment or standard treatment. The total number of primary studies included in this review was two (total $n=322$). The included studies were RCTs that combined parental training with treatment for children. Intervention components included parent training, child self-control training, and school-based interventions. The outcome of interest included incidences and severity of symptoms of inattention, impulsivity and hyperactivity. Outcome measures were

rated using standard psychometrically sound and validated assessment questionnaires. One study indicated that there was no difference detected between the efficacy of behavioural family therapy and treatment as usual in the community (p =not significant). The other study slightly favoured community-based treatment over medication placebo (p -value not reported).

Corcoran & Dattalo (2006) undertook a meta-analysis of studies to determine the effect of parental involvement in psychosocial treatment on children with ADHD. The included studies were RCTs or other study designs that had comparison/control groups. There were 16 included primary studies with a mean sample size of 91 (as reported by the review authors). To be included, parents had to be part of the intervention; however, the child and parent did not have to be seen conjointly. Children were identified as ADHD either by meeting diagnostic criteria or by scoring in the clinical range on established measures of

ADHD symptoms. The review included a number of treatment modalities including individual with parent, parent only, family problem solving, and parent-child sessions. Total number of sessions ranged between seven and eighteen. Outcomes included academic performance, self-control, family functioning, internalized problems, externalized problems, social competence, and child ADHD symptoms. Academic problems were strongly affected by parent-involved treatment, effect size (ES) reported as ($ES=8.20$). Parent involved treatment had a small effect on other outcome measures: child self-control ($ES=-1.67$), family function ($ES=0.67$), internalizing problems ($ES=0.63$), externalizing problems ($ES=0.36$), ADHD symptoms ($ES=0.40$), and social competence ($ES=0.07$).

DuPaul & Eckert (1997) was a meta-analysis of the effects of school-based interventions (total $n=637$). Study designs included between-group design, with-in group design, or single-subject design. Outcome measures included behavioural

and academic performance and pro-social interactions. Interventions were divided between cognitive-behavioural interventions that focused on the development of self-control skills and problem-solving strategies; academic interventions that concentrated on the manipulation of antecedent conditions such as academic instruction or materials; or contingency management that used teacher mediated reinforcement or punishment to reduce target behaviours and/or home-based contingencies for school performance. The results of the meta-analysis indicated that school-based interventions for children lead to behavioural changes with effect size ranging from moderate to high (i.e. 0.5 or higher) depending on study design. Intervention effects on academic and clinic test performance were less robust with ES ranging from non-significant to large, depending on analysis. Effect size for behaviour was 1.5 to 2 times greater than effect size for academic performance across all three study designs.

Klassen et al. (1999) was a meta-analysis which evaluated the clinical evidence regarding the effectiveness of medical and non-medical modalities of therapy for ADHD (Miller, Raina, Klassen, Zupancic, & Olsen, 1998; Appendix 6). The included studies (n=71) were randomized control trials that examined “packages” of therapeutic interventions as follows: individual psychological therapy with the child, using cognitive or cognitive-behavioural therapy (CBT); some parent training with application of CBT principles at home as well as in behaviour management; provision of a teacher-training component. The findings were that psychological/behavioural therapies used alone appeared to be ineffective in reducing the effects of ADHD. Data on effect size was not reported.

Nolan & Carr (2000) reviewed the literature for effectiveness of psychological interventions or combined psychological and pharmacological interventions for children and adolescents with ADHD

(total n=438). There were 11 studies that examined the non-pharmacological interventions and those results are included here. Treatment settings included hospital or university out-patient clinics, schools, or community. Interventions included behavioural parent training, self-instructional and social skills training, theory-based contingency planning, and multi-component treatment packages. The range of psychological interventions had positive short-term effects (3 months or less) on ADHD symptomology and related problems but did not address long-term improvement. Those psychological treatments included child-focused interventions, family-based interventions, school-based interventions, and multi-systemic interventions where child, family and school-focused interventions were combined into a multi-component treatment package.

Schachar et al. (2002) reviewed randomized control trials for evidence of the effectiveness of long-term treatment of ADHD. This review included eight studies (total n=623) that evaluated non-pharmacological or combined interventions: child therapy of various types, cognitive-behavioural therapy, combined psychosocial treatments, supportive therapy, parent training, and EEG biofeedback. Outcome measures included: core symptoms of inattention, hyperactivity and impulsivity; social behaviours; academic achievement; and internalized symptoms. Biofeedback was superior to no treatment and Cognitive Behavioural Therapy (CBT) was superior to supportive therapy. CBT alone resulted in minimal improvement in attention and no improvement in behaviour or academic performance. Combined therapy was superior to behaviour therapy on oppositional or aggressive symptoms, teacher-related social skills, and parent-child relationships. Meta-analysis was not performed due to the heterogeneity of the studies.



5.0 Discussion

This review of reviews highlights that there are few methodologically strong reviews that examine non-pharmacological, community-based interventions for children/adolescents with ADHD. The results of the reviews were greatly impacted by the methodological quality of the primary studies included in each review. Results were often based on a small number of included studies, with primary studies often having a small sample. The characteristics of these primary studies reduce the ability to generalize their results. Many of the primary studies lacked clearly defined control groups. Some review authors reported primary studies that did not contain clear and complete data. Missing data made meta-analysis difficult to perform and results less reliable. Another issue with the primary studies was that compliance to treatment protocol was often not measured. There were limited studies on females and pre-school aged children, and limited information on the race/ethnicity of participants. These are important factors

in analysis as the absence or presence of these variables can impact outcomes. The low number of female participants is understandable as boys are three times as likely to be diagnosed with ADHD as are girls (Centers for Disease Control and Prevention, 2005). At the same time, ADHD is often not diagnosed until the child is school-aged (median age of diagnosis according to US data is seven years) which would account for the low number of pre-school participants (ibid.). The lack of information on race or ethnicity is problematic for generalizing results to other populations. Most studies involved urban white males. Generalizability to other populations, for example African-American/Canadian, Hispanic or Aboriginal children, is not known.

The available reviews provided evidence of interventions with short-term positive effects on the symptomology of ADHD. Most promising were interventions that incorporated a multi-component treatment package (Bjornstad & Montgomery, 2005; Nolan & Carr, 2000). Multi-component treatment modules

included behavioural parent training, self-instructional training and school-based contingency training. Children with ADHD experience problems at home, school, and in the community. Interventions should be directed to helping children and families address or cope within and across those settings.

Both behavioural parent training (BPT) and behavioural interventions in the classroom meet criteria for well established treatments as outlined by the Task Force on Promotion and Dissemination of Psychological Procedures (1995) (Pelham, Wheeler, & Chronis, 1998). In spite of methodological limitations, the six strong reviews provided were moderately supportive of the task force recommendations. There is ample evidence that group parent training is as effective as individual therapy and has several other positive outcomes (Chronis, Chacko, Fabiano, Wymbs, & Pelham, 2004). Delivery of BPT programs has evolved over time from a one-to-one format, through didactic group formats to interactive groups. Most recently, videotaped vignettes in an interactive





parent group have been used. Certain parents appear to have a non-optimal response to these programs. These include those with low socio-economic status, marital discord, parental psychopathology and inappropriate expectations (ibid).

Among adolescents, several school-based interventions appear promising but have not been validated. These include behaviour modification and note-taking training (Smith, Waschbusch, Willoughby, & Evans, 2000). The positive outcomes from cognitive behavioural interventions (e.g. self-control/monitoring and problem solving) have been inconsistent to date (Pelham et al., 1998).

The Canadian ADHD Resource Alliance provides practice guidelines and other information for parents and children at the following website: www.caddra.ca. In summary, there is some evidence that multi-component programs work for children with ADHD. Parent training and school intervention appear to be effective and could be incorporated into any programming for Aboriginal groups. This is similar to the conclusion reached by Premji et al. (2007) regarding children with FASD. Grey literature indicated that the following programs might be adapted and evaluated for Aboriginal children and adolescents with FASD and their families. Programs that use videotaped vignettes of child behaviour to stimulate parent discussion and role play have been successful in improving child behaviour.

These include “Incredible Years” (Webster-Stratton, 1992) and COPE (Cunningham, 1998). As well, programs that are interactive seem to engage parents and lead to more positive child outcomes. Details of the psychosocial programs currently being offered in British Columbia, Canada can be obtained from Kathleen Rea (krea@cw.bc.ca), Susan Poitras (spoitras@cw.bc.ca), and Candice Murray (cmurray@cw.bc.ca). Although these programs have not been evaluated among Aboriginal groups, the principles could be used to develop future programs.

6.0 Conclusions

All comments, both positive and negative, are based on the strong (n=6) reviews.

6.1 Implications for practice

The high rates of co-morbidity (e.g. conduct disorder, substance abuse, depression) among children with ADHD suggest this may also be a challenge for children with FASD. It will be important to identify children with co-morbidities as these conditions may have an impact on program success.

Multi-component community-based programs for children and adolescents with ADHD and their families could be adopted for Aboriginal families with children with FASD and rigorously evaluated. This should include long-term follow-up.

6.2 Implications for Research

Although a number of methodologically strong reviews were found, the primary studies upon which they were based had a number of weaknesses. These are outlined below and should be addressed in future research.

- Many reviews included both pharmacological and non-pharmacological interventions. It was often difficult to assess whether the non-pharmacological interventions were in fact added to the drugs or entirely separate. The effects of non-pharmacological interventions need to be more rigorously studied. Many of the studies did not have equivalent control groups which made assessing their contribution difficult. In the future, equivalent control groups should be assembled for studies.
- Many studies had very small sample sizes. These need to be replicated on larger samples with adequate statistical power to find a between group difference if it exists.
- There is little work that includes females or preschool children. Although there are reasons for this, a decision needs to be made about whether these are research priorities.
- Culture/ethnicity of participants should be clearly identified as well as other demographic characteristics such as family income, marital status of parents, parental psychiatric history. These variables are important because they seem to influence program outcomes.
- Interventions that show positive short-term effects need to have long-term follow-up.

This review of reviews fulfils the purpose of identifying principles that could be adapted to programs for First Nations children identified with FASD and their families.



TABLES AND FIGURES



Table 1:
Quality Assessment Results for all
Relevant Reviews (n=19)

Table 2:
Data Extraction Table for Included Studies
(n=6)

Table 3:
Variables for Included Studies

Figure 1:
Search Results Flowchart

Table 1: Quality Assessment Results for All Relevant Reviews



Article	Search Strategy Described	Search Strategy Comprehensive	Level of Evidence Described	Quality Assessment of primary studies	Assessed four or more methodological variables*	Integration of findings described beyond list	Reported data adequate to support findings	Global Rating
Bjornstad & Montgomery, 2005	✓	✓	✓	✓	✓	✓	✓	Strong
Corcoran & Dattalo, 2006	✓	✓	✓	✓		✓	✓	Strong
Dupaul & Eckert, 1997	✓	✓	✓	✓	✓	✓	✓	Strong
Klassen et al, 1999	✓	✓	✓	✓	✓	✓	✓	Strong
Nolan & Carr, 2000	✓		✓	✓	✓	✓	✓	Strong
Schachar et al., 2002	✓	✓	✓	✓	✓	✓	✓	Strong
Farmer, Compton, Burns, & Robertson, 2002	✓	✓		✓			✓	Moderate
Kohut & Andrews, 2004	✓	✓	✓			✓		Moderate
Konrad, Fowler, Walker, Test et al., 2007	✓		✓	✓		✓	✓	Moderate
Majewicz-Hefley & Carlson, 2007	✓		✓			✓	✓	Moderate
McGoey, Eckert, & DuPaul, 2002	✓	✓	✓			✓	✓	Moderate
Purdie, Hattie, & Carroll, 2002	✓	✓	✓			✓	✓	Moderate
Reid, Trout, & Schartz, 2005	✓	✓	✓			✓		Moderate
Smith et al., 2000	✓	✓	✓			✓	✓	Moderate
Trout & Epstein, 2007	✓	✓	✓			✓	✓	Moderate
Xu, Reid, & Steckelberg, 2002	✓	✓	✓			✓	✓	Weak
Benner-Davis & Heaton, 2007 Burns, Hoagwood, & Mrazek, 1999						✓		Weak
Miranda, Jarque, & Tarraga, 2006	✓		✓			✓		Weak

*The methodological variables that can be assessed include: selection bias, confounders, data collection methods, withdrawals/dropouts, analysis and intervention integrity. STRONG (score 6-7); MODERATE (score 4-5); WEAK (score 3 or less).

Table 2: Data Extraction Table for Included Studies (n=6)

Author, Date	Study Characteristics	Description of Interventions	Results	Comments
Bjornstad, Montgomery (2005) STRONG Included Studies=2	The included studies were randomized controlled trials that combined behavioural parent training with treatment for children and sought to generalize the effects of treatment on the home and school environments Total N= 322 Definition of 'child' or 'adolescent' left up to investigator to accommodate cultural differences in definition Participants may have had co-morbid diagnosis such as ODD	Interventions of interest were family therapy interventions that included functional family therapy, cognitive-behavioural therapy or behavioural family therapy which included at least one parent and the child participating in some sessions with the therapist. Treatment lasted 14 months. Outcome Measurements: The incidences or severity of symptoms of inattention, impulsivity, and hyperactivity	One study indicated that here was no difference detected between the efficacy of behavioral family therapy and treatment as usual in the community (p=n.s) The second study slightly favoured treatment over medication placebo (p-value not reported)	Outcome measures were rated using standard psychometrically sounds and validated assessment questionnaires measuring changes in attentional, impulsive and hyperactive symptoms over time Small number of studies means generalizability of conclusions should be viewed with caution
Review Objective: To address the question of whether family therapy without medication can reduce the core symptoms of ADHD as compared to no treatment or standard treatment				

Table 2 cont'd: Data Extraction Table for Included Studies (n=6)

Author, Date	Study Characteristics	Description of Interventions	Results	Comments
Corcoran and Dattalo (2006) STRONG Included studies =16	Studies were included if they were RCTs or other study designs with comparison/control groups. Parents were part of the treatment, but children and parents did not have to be seen conjointly. Treatment had to be clearly defined. Children had to be screened for ADHD using established clinical measures Mean sample size = 91; median sample size = 67	Modality: Individual with parents (4 studies) ranging from 8-12 sessions; parent only (1 study) 8-10 sessions; family for problem solving (1 study) 18 sessions; parent-child (2 studies) 7 or 14 sessions; group (8 studies)7-9 sessions Outcome Measurements: Academic performance, self-control, family functioning, internalizing problems, externalizing problems, social competence, child ADHD symptoms	Academic problems were strongly affected by parent-involved treatment (ES=8.20); parent involved treatment had a low to moderate effect on other outcome measures: child self-control (ES=-1.67); family function (ES=.67); internalizing problems (ES=.63); externalizing problems (ES=.36); ADHD symptoms (ES=.40); social competence (ES=.07)	Included studies were restricted to cognitive-behaviour theoretical orientation Findings tend to be based on a small number of studies Small number of studies means generalizability of conclusions should be viewed with caution
Review Objective: Meta-analysis of studies to determine the effect of parent involvement in psychosocial treatment on symptoms on children with ADHD				

Table 2 cont'd: Data Extraction Table for Included Studies (n=6)

Author, Date	Study Characteristics	Description of Interventions	Results	Comments
Dupaul & Eckert (1997) STRONG Included Studies =63 Review Objective: A meta-analysis of the effects of school-based interventions	All problem behaviour had to be relevant to school settings Study designs were between-group design, with-in group design or a single-subject design N=637 (ranging from 1-62 participants per study) Most participants were diagnosed with ADHD, HKD or ADD with no co-morbidities All participants were in the public school system (only 2 studies were located in elementary schools) Length of interventions not described Follow-up ranged from 1 to 12 weeks, but 77.8% had not followed-up	Cognitive-behavioural interventions focusing on the development of self-control skills and problem-solving strategies Academic interventions focusing on the manipulation of antecedent conditions such as academic instruction or materials Contingency management using teacher-mediated reinforcement or punishment to reduce target behaviours, home-based contingencies for school performance Outcome Measurements: Behavioural, academic performance and pro-social interactions	The results of the meta-analysis indicate that school-based interventions for children lead to significant behavioural effects – effect sizes were moderate to high (i.e. 0.5 or higher) depending on study design Intervention effects on academic and clinic test performance were less robust, as ES ranged from non-significant to large, depending on analysis ES for behaviour were 1.5 to 2 times greater than ES for academic performance across all three designs	Given that the included studies had few adolescents or girls further research with more diverse populations is recommended. Most included studies examined the effects of academic interventions contingency management and cognitive-behavioural interventions Few of the included studies had control groups or involved randomization

Table 2 cont'd: Data Extraction Table for Included Studies (n=6)

Author, Date	Study Characteristics	Description of Interventions	Results	Comments
Schachar et al. (2002) STRONG Included Studies: 8 evaluated non-pharmacological interventions and combined interventions Review Objective: A review of the literature on the long-term treatment of ADHD	RCTs Treatment administered for 12 weeks or more N=623 (with 579 coming from one study)	Child therapy of various types (3) cognitive-behavioural therapy(2) combined psychosocial treatments (1) parent training (1) EEG biofeedback (1) Outcome Measurements: Academic performance, behaviours related to ADHD and internalized symptoms	CBT alone resulted in minimum improvement in attention and no improvement in behaviour or academic performance Biofeedback was superior to no treatment and CBT was superior to supportive therapy Combined therapy was superior to behaviour therapy on oppositional or aggressive symptoms, teacher-related social skills, and parent-child relationships	No primary studies included preschool age children Compliance with treatment protocol often not measured in primary studies Findings tend to be based on a small number of studies Small number of studies means generalizability of conclusions should be viewed with caution

Table 2 cont'd: Data Extraction Table for Included Studies (n=6)

Author, Date	Study Characteristics	Description of Interventions	Results	Comments
<p>Klassen et al. (1999) Project account with Miller et al (1998)</p> <p>STRONG</p> <p>Included Studies=2 psychological/ behavioural studies</p> <p>Review Objective: To evaluate the clinical evidence regarding the effectiveness of medical and non-medical modalities of therapies for ADHD (this is a subsection of a larger review)</p>	<p>RCTs</p> <p>"Package" of therapeutic interventions: 1)individual psychological therapy with the child using cognitive or cognitive-behavioural therapy; 2) some parent training in application of CBT principles as home as well as in behaviour management; 3) provision of a teacher-training component in some cases. These packages were not applied uniformly across the studies analyzed</p> <p>N=71</p> <p>Some co-morbid conditions allowed in inclusion criteria</p>	<p>Interventions included: Contingency management, cognitive-behavioural therapy, individual psychotherapy, parent training and education, teacher training and education, parent or family counseling/therapy, social skills training, EEG biofeedback or relaxation techniques</p> <p>Outcome Measurements: behaviours, not academic performance, cognitive function, neurological/ physiological measures</p>	<p>Psychological/behavioural therapies used alone appeared not to be efficacious in ADHD</p>	<p>Results were hampered by the lack of data in primary studies included in the review</p> <p>Results came from a small number of studies with small sample sizes</p>

Table 2 cont'd: Data Extraction Table for Included Studies (n=6)

Author, Date	Study Characteristics	Description of Interventions	Results	Comments
<p>Nolan and Carr (2000)</p> <p>STRONG</p> <p>Included Studies=11</p> <p>Review Objective: To review the effectiveness of psychological interventions or combined psychological and pharmacological interventions for children and adolescents with ADHD</p>	<p>RCT or study design with control/comparison group N= 438</p> <p>Treatment settings: Hospitals OP (4), schools (4)community(1), university OP (2)</p> <p>Cognitive and/or behavioural treatments were evaluated in all studies</p> <p>Number of sessions: 6 to 32</p>	<p>Behavioural parent training (3)</p> <p>Self-Instructional training and theory-based contingency management (3)</p> <p>social skills training (1)</p> <p>Multi-component treatment packages (4)</p> <p>Combined psychological and pharmacological treatment (9)</p> <p>Outcome Measurements: school and/or clinic based behaviour problems and academic performance</p>	<p>A range of psychological interventions had positive short-term effects on ADHD symptomology and related problems</p> <p>Multi-component treatment may be more effective in reducing home-based behavior problems</p> <p>For school-based behaviour and achievement, self- esteem and attentional deployment they are no better than single component interventions problems</p>	<p>Only studies without medication intervention are reported here (n=11 of 20)</p> <p>No follow-up was reported to determine long-term treatment effects</p>

Figure 1: Search Results

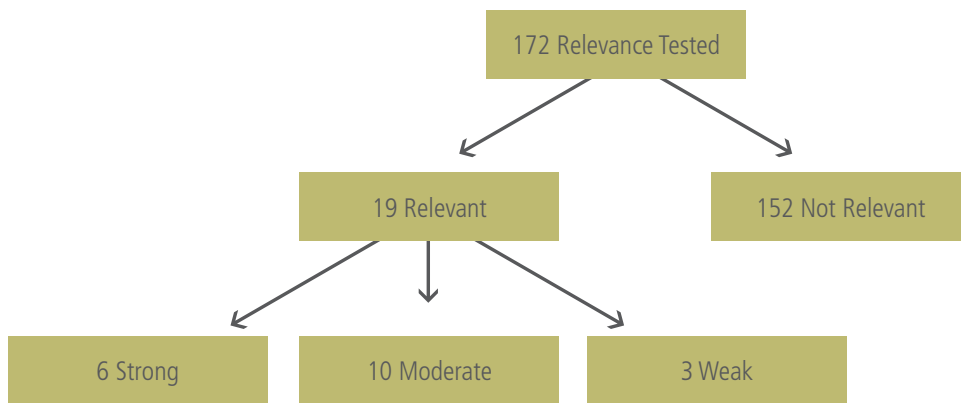


Table 3: Variables for Included Studies

Study	Age	Gender	Household Composition	SES	Race	Co-Morbid Conditions	Methodological Issues	Countries of primary Studies	Duration/ #sessions
Bjornstad & Montgomery	7-9.9	N/A	One study: "Mainly intact marriages"	One study: middle class living is suburbs in Midwest US	↑white	ODD, CD but some co-morbid conditions excluded	One study: no proper no-treatment/control group	USA	14 months
Corcoran & Dattalo	3-15	N/A	Single or two parent	Analyzed but description not provided	Analyzed but description not provided	N/A	At least in some of the studies ppt were taking medications	N/A	Range: 7 – 360 sessions
Dupaul et al.	5-15	All male: 45 studies Male/female: 22 studies Unknown: 3 studies	N/A	N/A	N/A	ADHD, HKD, HID, HD, AD, CD, LD	Lack of methodological rigour of primary studies.	N/A	Unknown
Klassen et al.	0-18	↑Male (avg: 88.5%) and ↓female * 1/2 studies: exclusively male	N/A	N/A	N/A	No		N/A	Child: 12-24 Parent: 6-8 Teacher: 2-7
Nolan & Carr	3-18	↑Male (87%) and ↓female (13%)	N/A	N/A	N/A	Reported in 8 of 20, ODD, CD, IBP		USA, Canada	6-40 sessions
Schachar et al..	5-18	↑Male and ↓female	6 of 14 studies	N/A	1/8 studies reported: White, African-American, Hispanic	Yes	Compliance not measured in many studies	N/A	Avg: 21.25 weeks Range: 12-60 weeks

Legend: ↓=Lower numbers present; ↑=Higher numbers present

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APPENDICES



Appendix 1: Search Strategy A & B

Search Strategy A was created with the assistance of a Public Health Librarian (Hamilton Public Health Services, Hamilton ON)

Search Strategy B was created with the assistance of the McMaster University Library Services

Appendix 2:

Hand-Searched Journals and Grey Matters

Appendix 3:

Relevance Tool

Appendix 4:

Review of Reviews Validity Tool

Appendix 1: Search Strategy A

1. Review*
2. Meta Analys*
3. Metaanalys*
4. Metanalys*
5. Systematic
6. Or/1-5
7. Effect*
8. Evaluat*
9. Efficacy
10. Outcome*
11. Impact
12. Evidence
13. "Best Practice"
14. Guideline*
15. Or/7-14
16. Community
17. Counsel*
18. Behavio*
19. Psychosocial
20. Rehabilitat*
21. Psycholog*
22. Or/16-21
23. Education*
24. Alternat*
25. Multiple
26. Parent*
27. Non-Pharmacologic*
28. Nonpharmacologic*
29. Multimodal
30. Multi-Modal
31. Or/23-30
32. Psychoeducation*
33. PsychotheRapy
34. Biopsychosocial
35. Family
36. Combined
37. Combination
38. Nonstimulant
39. Non-Stimulant
40. Or/32-39
41. 22 Or 31 Or 40
42. Intervention*
43. Program*
44. Strateg*
45. Counsel*
46. Therapy
47. Therapies
48. Rehabilitat*
49. Education*
50. Treatment*
51. Approach
52. Management*
53. Training
54. Or/42-53
55. "Attention Deficit" And
Hyperactivity
56. ADHD
57. Or/55-58
58. Child*
59. Adolescent*
60. Youth*
61. Teen*
62. Or/60-63
63. 6 And 15 And 41 And 54 And 59
And 64
64. Py=1990-2008
65. La=English
66. 65 And 66 And 67

The following databases were searched:

Cochrane Database of Systematic Reviews
ERIC
Ovid Medline
PsycINFO
CINAHL
EMBASE
Sociological Abstracts

Appendix 1: Search Strategy B

Search Results

Ovid MEDLINE(R) 1968 to 1995

#	Searches	Results
1	exp Fetal Alcohol Syndrome/	712
2	exp Attention Deficit Disorder with Hyperactivity/	1760
3	exp adolescent/ or exp child/	359647
4	exp Community Mental Health Services/	2388
5	exp Behavior Therapy/	6627
6	exp Social Support/	7080
7	exp Community Networks/	132
8	exp Community Health Services/	76576
9	exp Community Health Nursing/ or exp Community Health Centers/	6394
10	exp Community Health Planning/	407
11	exp Occupational Therapy/	1347
12	exp Counseling/	5314
13	exp Family Health/	2475
14	exp Family Therapy/	1397
15	exp complementary therapies/ or exp play therapy/	19625
16	1 or 2	2468
17	3 and 16	1774
18	4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15	111187
19	17 and 18	197
20	limit 19 to (english language and "review articles")	32
21	[from 20 keep 1-156]	0
22	[from 21 keep 1]	0
23	limit 20 to yr="1990 - 1995"	31
24	from 23 keep 1-31	31
25	from 24 keep 1	1

Results of your search: from 24 [from 23 keep 1-31] keep 1

Results Available: 1

Results Displayed: #1

Result 1.

Unique Identifier 8704379
Authors St Dennis C. Synoground G.
Authors Full Name St Dennis, C. Synoground, G.
Title Clonidine. [Review] [13 refs]
Source Journal of School Nursing. 11(4):9-12, 1995 Dec.

Search Results

PsycINFO 1985 to April Week 3 2008

#	Searches	Results
1	exp Fetal Alcohol Syndrome/	660
2	exp Attention Deficit Disorder with Hyperactivity/	6380
3	exp Community Mental Health Services/ or exp Community Services/	15762
4	exp Public Health Services/	1410
5	exp Social Support/	19150
6	exp Behavior Therapy/	9374
7	exp COUNSELING/	41151
8	exp Social Networks/	3191
9	exp Occupational Therapy/	2690
10	exp Family Therapy/	13365
11	exp Alternative Medicine/	3229
12	exp Play Therapy/	1906
13	1 or 2	7033
14	3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12	93077
15	13 and 14	216
16	limit 15 to ((100 childhood or 120 neonatal or 140 infancy or 160 preschool age or 180 school age or 200 adolescence) and reviews and yr="1990 - 2008")	0
17	limit 15 to ((100 childhood or 200 adolescence) and reviews and english)	0
18	limit 15 to reviews	4
19	from 18 keep 1	1
20	from 19 keep 1	1

Results of your search: from 19 [from 18 keep 1] keep 1

Results Available: 1

Results Displayed: #1

Result 1.

Title Hot what America needs. [References].
Year of Publication 2008
Author McCrae, Christina S; Kay, Daniel B.
Source PsycCRITIQUES, Vol 53 (15), 2008
Publication Type Electronic Collection

Search Results

CINAHL - Cumulative Index to Nursing & Allied Health Literature 1982 to April Week 2 2008

#	Searches	Results
1	exp Fetal Alcohol Syndrome/	456
2	exp Attention Deficit Hyperactivity Disorder/	2967
3	exp CHILD/	166049
4	exp Adolescence/	103864
5	exp Community Health Nursing/ or exp Community Health Services/ or exp Community Mental Health Services/ or exp Occupational Therapy/	147281
6	exp Community Networks/	578
7	exp Community Health Centers/	1066
8	exp Behavior Therapy/	5701
9	exp COUNSELING/	8542
10	exp Family Health/	1253
11	exp Family Therapy/	1067
12	exp Alternative Therapies/	54327
13	Play Therapy/	305
14	exp Occupational Therapy/	8978
15	1 or 2	3416
16	3 or 4	223434
17	5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14	206958
18	15 and 16 and 17	432
19	limit 18 to ("review articles" and english and yr="1990 - 2008")	34
20	from 19 keep 1-34	34
21	from 20 keep 1	1

Results of your search: from 20 [from 19 keep 1-34] keep 1

Results Available: 1

Results Displayed: #1

Result 1.

Accession Number	2009819453.
Author	Carey TA. Oxman LN.
Title	Adolescents and mental health treatments: reviewing the evidence to discern common themes for clinicians and areas for future research.
Source	Clinical Psychologist. 2007 Nov; 11(3): 79-87. (58 ref)
Publication Type	Journal Article, Review.

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Version: OvidEP_1801.01.00, SourceID 34813

Search Results

EMBASE 1988 to 2008 Week 15

#	Searches	Results
1	exp Fetal Alcohol Syndrome/	1861
2	exp Attention Deficit Disorder/	13955
3	Child/	303208
4	Adolescent/	393218
5	exp COMMUNITY BASED REHABILITATION/ or exp COMMUNITY/ or exp COMMUNITY MENTAL HEALTH/ or exp COMMUNITY HEALTH NURSING/ or exp COMMUNITY PROGRAM/ or exp COMMUNITY MENTAL HEALTH CENTER/ or exp COMMUNITY CARE/	34796
6	exp Social Support/	15238
7	exp Behavior Therapy/	18537
8	exp COUNSELING/	40506
9	exp Family Health/	982
10	exp Family Therapy/	3790
11	exp alternative medicine/	11800
12	exp PLAY THERAPY/ or PLAY/	2166
13	exp Occupational Therapy/	5562
14	1 or 2	15744
15	3 or 4	550396
16	5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13	124203
17	14 and 15 and 16	507
18	limit 17 to (english and yr="1990 - 2008" and "review")	115
19	from 18 keep 1-115	115
20	exp Health Promotion/	23483
21	exp Public Health/	29584
22	exp PATIENT EDUCATION/ or exp SCHOOL HEALTH EDUCATION/ or exp HEALTH EDUCATION/ or exp EDUCATION PROGRAM/ or exp VOCATIONAL EDUCATION/	89580
23	16 or 20 or 21 or 22	222494
24	14 and 15 and 23	578
25	limit 24 to (english and yr="1990 - 2008" and "review")	125
26	from 25 keep 1-125	125
27	from 26 keep 7	1

Results of your search: from 26 [from 25 keep 1-125] keep 7

Results Available: 1

Results Displayed: #1

Result 1.

Authors

Hinshaw S.P.

Search Results

Ovid MEDLINE(R) 1996 to April Week 2 2008

#	Searches	Results
1	exp Fetal Alcohol Syndrome/	1032
2	exp Attention Deficit Disorder with Hyperactivity/	8042
3	exp adolescent/ or exp child/	698696
4	exp Community Mental Health Services/	4510
5	exp Behavior Therapy/	15886
6	exp Social Support/	21564
7	exp Community Networks/	2764
8	exp Community Health Services/	173223
9	exp Community Health Nursing/ or exp Community Health Centers/	11164
10	exp Community Health Planning/	3018
11	exp Occupational Therapy/	2418
12	exp Counseling/	11084
13	exp Family Health/	11078
14	exp Family Therapy/	1935
15	exp complementary therapies/ or exp play therapy/	63063
16	1 or 2	9054
17	3 and 16	6791
18	4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15	277995
19	17 and 18	906
20	limit 19 to (english language and "review articles")	156
21	from 20 keep 1-156	156
22	from 21 keep 1	1

Results of your search: from 21 [from 20 keep 1-156] keep 1

Results Available: 1

Results Displayed: #1

Result 1.

Unique Identifier	18240854
Authors	Evans SW. Schultz BK. Sadler JM.
Authors Full Name	Evans, Steven W. Schultz, Brandon K. Sadler, Joanna M.
Title	Safety and efficacy of psychosocial interventions used to treat children with attention-deficit/hyperactivity disorder. [Review] [40 refs]
Source	Pediatric Annals. 37(1):52-9, 2008 Jan.
Publication Type	Journal Article. Review.

Copyright (c) 2006-2007 Ovid Technologies, Inc.

Version: OvidSP_1801.01.00, SourceID 34813

<input type="checkbox"/> AND <input type="checkbox"/> OR Combine	Search History
<input type="checkbox"/> #6	<p>Search Query #6 ((KW=(fasd or adhd or (fetal alcohol syndrome)) or KW=(attention deficit disorder)) and(KW=(child or children or adolescent) or KW=(adolescence or adolescents or youth)) and(KW=(community or behavior or therapy) or KW=(complementary or counsel or counseling) or KW=(family or (occupational therapy)))) and(TI=(review or reviews)) (Copy Query)</p> <p>2 Published Works results found in Multiple Databases + 286 Scholars results found in COS Scholar Universe: Social Science 0 Web Sites results found in Web Resources Related to the Social Sciences/Humanities</p> <p>Date Range: Earliest to Current Unfited to:</p> <p>Edit Save OR Alert View Results Delete</p>
<input type="checkbox"/> #5	<p>Search Query #5 TI=(review or reviews) (Copy Query)</p> <p>4588 Published Works results found in Multiple Databases + 3002 Scholars results found in COS Scholar Universe: Social Science</p> <p>Date Range: Earliest to 2008</p> <p>Edit Save OR Alert View Results Delete</p>
<input type="checkbox"/> #4	<p>Search Query #4 (KW=(fasd or adhd or (fetal alcohol syndrome)) or KW=(attention deficit disorder)) and(KW=(child or children or adolescent) or KW=(adolescence or adolescents or youth)) and(KW=(community or behavior or therapy) or KW=(complementary or counsel or counseling) or KW=(family or (occupational therapy)))) (Copy Query)</p> <p>144 Published Works results found in Multiple Databases + 1410 Scholars results found in COS Scholar Universe: Social Science 22 Web Sites results found in Web Resources Related to the Social Sciences/Humanities</p> <p>Date Range: Earliest to Current Unfited to:</p> <p>Edit Save OR Alert View Results Delete</p>
<input type="checkbox"/> #3	<p>Search Query #3 KW=(community or behavior or therapy) or KW=(complementary or counsel or counseling) or KW=(family or (occupational therapy)) (Copy Query)</p> <p>229805 Published Works results found in Multiple Databases + 41645 Scholars results found in COS Scholar Universe: Social Science</p> <p>Date Range: Earliest to 2008</p> <p>Edit Save OR Alert View Results Delete</p>
<input type="checkbox"/> #2	<p>Search Query #2 KW=(child or children or adolescent) or KW=(adolescence or adolescents or youth) (Copy Query)</p> <p>117375 Published Works results found in Multiple Databases + 20298 Scholars results found in COS Scholar Universe: Social Science</p> <p>Date Range: Earliest to 2008</p> <p>Edit Save OR Alert View Results Delete</p>
<input type="checkbox"/> #1	<p>Search Query #1 KW=(fasd or adhd or (fetal alcohol syndrome)) or KW=(attention deficit disorder) (Copy Query)</p> <p>331 Published Works results found in Multiple Databases + 2090 Scholars results found in COS Scholar Universe: Social Science</p> <p>Date Range: Earliest to 2008</p> <p>Edit Save OR Alert View Results Delete</p>
<input type="checkbox"/> AND <input type="checkbox"/> OR Combine	Search History

Combine Searches:

Search Tips: (#3 or #2) and new term

Title Moderators and Mediators of Treatment Outcome for Youth With ADHD: Understanding for Whom and How Interventions Work.

Source Ambulatory Pediatrics. 7(1 SUPPL.)(pp 91-100), 2007. Date of Publication: Jan 2007.

Publication Type Journal: Review

Appendix 2: Hand-Searched Journal

Searched from January 2005 -
December 2008:

- Behavioral and Cognitive Psychotherapy
- Behavioral Disorders: Journal of the council for children with behavioral disorders
- Child and Adolescent Mental Health
- Journal of Emotional and Behavioral Disorders

Grey Matters: A Practical Search Tool for Evidence-Based Medicine

Grey literature refers to materials that are potentially valuable, but not published commercially. These materials, which are usually also inaccessible through

bibliographic databases include, but are not limited to, institutional and government reports, research papers, and statistical documents.

Grey Matters is a checklist that has been developed by The Canadian Agency for Drugs and Technologies in Health (CADTH). As defined by CADTH, this tool can be used to:

- Ensure the retrieval of all relevant grey literature
- Help document the grey literature search process, thereby increasing transparency and the potential for reproducibility
- Ensure that grey literature searching is done in a standardized and comprehensive manner

The checklist itself includes national and international HTA websites, drug and device regulatory agencies, clinical trial registries, health economics resources, Canadian health prevalence or incidence databases, and drug formulary websites.

All keywords used in the search of documents, as well as the success or relevancy of the retrieval are documented for the categories and websites of interest. Retrieved articles are then quality assessed to determine relevancy and possibility of inclusion into the systematic review.

Appendix 3: Relevance Tool

Relevance Criteria ADHD Review of Reviews			
1.	The article is a review article	Y	N
2.	The population of interest in the article is children, youth, adolescents and/or their family	Y	N
3.	The interventions include behaviour modification, social behaviour/social skills training and other types of community based programs; pharmacological interventions are not relevant	Y	N
4.	Reported outcomes include child/youth behaviour	Y	N
Reviewer Decision			
Include in critical appraisal (only if answer 'yes' to all 5 relevance criteria)		Y	N
If Discrepancy in Inclusion Decision:			
Reason for discrepancy			
Oversight		Y	N
Difference in interpretation of criteria		Y	N
Difference in interpretation of study		Y	N
Additional Comments:			
Final Decision: Include in Study		Y	N

Appendix 4: Review of Reviews Validity Tool

For each criterion, score 1 if the criteria are met or 0 if the criteria is not met.

		1	0	Inter-rater discussion
1.	Did they describe the search strategy?	Y	N	U
2.	Was the search comprehensive? (minimum requirement: 2 electronic databases and at least 1 additional resource)	Y	N	U
	Additional Resources: key informants unpublished literature bibliographic reference lists			
	World Wide Web search Other _____			
3.	Did they describe the level of evidence in the primary studies they included?	Y	N	U
	Example: Level I (RCTs only) Level II (non-randomized, cohort) Level III (uncontrolled studies)			
4	Did they assess the quality (ie. strengths and weaknesses) of the primary studies beyond the level of evidence?	Y	N	U
5.	Did the quality assessment include: (minimum requirement: 4/7 of the following)	Y	N	U
	Selection bias Confounders Blinding Data Collection Methods			
	Withdrawals and Drop-outs Analysis Intervention Integrity			
	Does the review integrate the findings beyond describing or listing primary study results?	Y	N	U
	Is the reported data from all studies adequate to support the review's conclusions?	Y	N	U

Total Score _____

(total score 6-7) (total score 4-5) (total score 3 or less)

Quality Rating (circle one):

STRONG

MODERATE

WEAK

Appendix 5: Effective Public Health Practice Project (EPHPP) Reviews and Summary Statements



Effective Public Health Practice Project. Reviews and Summary Statements		
General Standard		
Equal Access Health Hazard Investigation		
	New roads and human health: A systematic review	2005
	Effectiveness of public health in organized response to non-natural environmental disasters*	1999
	Effectiveness of environmental awareness interventions*	1999
Program Planning and Evaluation		
	Psychosocial and psychological interventions for preventing postpartum depression	2005
	Effectiveness of physical activity programs at worksites with respect to work-related outcomes	2005
	Meta-analysis of psychosocial interventions for caregivers of people with dementia	2005
	Health related virtual communities and electronic support groups: Systematic review of the effects of online peer-to-peer interactions	2005
	Web sites for promoting health	2003
	The effectiveness of patient diabetes education in the management of type 2 diabetes	2002
	The effectiveness of on-line health information for consumers	2002
	Mass media interventions: Effects on health services use	2001
	A meta-analysis of fear appeals: Implications for effective public health campaigns	2001
	Electronic social support groups to improve health*	2000
	Effectiveness of video for health education	2000
	Effectiveness of environmental awareness interventions*	1999
Chronic Disease and Injuries		
Chronic Disease Prevention		
	What is the effectiveness of community-based/primary care intervention in reducing obesity among adults in the general population?	2008
	Is there a relationship between food insecurity and overweight/obesity?*	2007
	The effectiveness of multi-faceted health promotion interventions in the workplace to reduce chronic disease*	2007
	The effectiveness of intervention to promote physical activity among marginalized populations*	2007
	Competitions and incentives for smoking cessation	2006

Effective Public Health Practice Project. Reviews and Summary Statements

Enhancing partner support to improve smoking cessation	2006
Group behaviour therapy programmes for smoking cessation	2006
Individual behavioural counselling for smoking cessation	2006
A review of interventions to reduce tobacco use in colleges and universities	2006
Physician advice for smoking cessation	2006
Workplace interventions for smoking cessation	2006
Exercise for health for early postmenopausal women: A systematic review of randomized controlled trials	2006
Home versus center based physical activity programs in older adults	2006
Interventions for promoting physical activity	2006
The effectiveness of school-based interventions in reducing adolescent risk behaviours: A systematic review of reviews*	2005
The effectiveness of interventions to prevent excessive weight gain in pregnancy*	2005
Dietary advice given by a dietitian versus other health professionals or self-help resources to reduce blood cholesterol	2005
A review of 25 long-term adolescent tobacco and other drug use prevention program evaluations	2005
Counselling to promote a healthy diet in adults: A summary of evidence for the US Preventive Services Task Force	2005
Reviews of evidence on interventions to prevent dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries	2005
Systematic review of long-term effects of advice to reduce dietary salt in adults	2005
Effectiveness of physical activity enhancement and obesity prevention programs in children and youth (Healthy Weights Review (HWR))*; comprised of the following five reviews: <ul style="list-style-type: none"> · Environmental interventions to improve nutrition and increase physical in children and youth · Interventions to improve nutritional intake in children and youth · Interventions to increase physical activity and nutritional intake in children and youth · Interventions to increase physical activity in children and youth 	2004
Effectiveness of worksite physical activity programs on physical activity, physical fitness and health	2004
Exercise to improve self-esteem in children and young people	2004
Mass media interventions for preventing smoking in young people	2004
Exercise as an aid in smoking cessation	2004
Young people and healthy eating: A systematic review on barriers and facilitators	2003

Effective Public Health Practice Project. Reviews and Summary Statements

The effectiveness of routinely taught breast self-examination in reducing mortality	2003
The effectiveness of patient diabetes education in the management of type 2 diabetes	2002
The effectiveness of school-based strategies for the primary prevention of obesity and for promoting physical activity and/or nutrition, the major modifiable risk factors for type 2 Diabetes*	2002
Effectiveness of primary prevention of eating disorders*	2001
Using school-based programs to improve heart healthy eating behaviours of children	2001
Effectiveness of interventions to promote healthy eating in pre-school children aged 1 to 5 years	2001
Effectiveness of smoking cessation interventions	2001
Limited (information only) patient education programs for adults with asthma	2001
The effectiveness of health promotion interventions in the workplace	2001
The effect of exercise training on bone mass among pre- and postmenopausal women	2001
The effectiveness of the health promoting schools approach and school-based health promotion interventions	2001
Effectiveness of home based support for older people	2001
The effectiveness of school-based interventions in promoting physical activity and fitness among children and youth: A systematic review*	2001
Effectiveness of dust mite control to reduce asthma symptoms	2000
The effectiveness of interventions for preventing tobacco smoke in public places	2000
Effectiveness of a telephone intervention as a delivery strategy within the scope of public health nursing practice	2000
The effectiveness of postpartum smoking relapse prevention strategies: A systematic review of the evidence 1992-1999*	2000
The effectiveness of community interventions to increase fruit and vegetable consumption in people four years of age and older*	1999
Effectiveness of coalitions in heart health promotion, tobacco use reduction, and injury prevention: a systematic review of the literature 1990-1998*	1999
Smoking cessation during pregnancy	1999
The effectiveness of community-based heart health programs: a systematic overview update*	1999
The effectiveness of workplace-based health risk appraisal in improving knowledge, attitudes or behaviours	1999
Early Detection of Cancer	
The effectiveness of interventions to promote mammography among women with historically lower rates of screening	2005

Effective Public Health Practice Project. Reviews and Summary Statements

Effectiveness of strategies to increase cervical cancer screening in clinic-based settings: A systematic review of the literature 1989-1999*	2000
Community-based strategies to promote cervical cancer screening*	2000
Injury Prevention Including Substance Abuse Prevention	
Workplace interventions to prevent substance misuse	2008
Home visits during pregnancy and after birth for women with an alcohol or drug problem	2006
Non-legislative interventions for the promotion of cycle helmet wearing by children	2006
Interventions for promoting booster seat use in four to eight year olds travelling in motor vehicles	2006
Population-based interventions for the prevention of fall-related injuries in older people	2006
School-based driver education for the prevention of traffic crashes	2005
A systematic review of the effectiveness of the community reinforcement approach in alcohol, cocaine and opioid addiction	2005
A review of 25 long-term adolescent tobacco and other drug use prevention program evaluations	2005
Post-license driver education for the prevention of road traffic crashes	2004
A meta-analysis of fall prevention programs for the elderly: How effective are they?	2004
Interventions to prevent the recurrence of elder abuse	2003
The effectiveness of preventative home visits to elderly people living in the community	2003
Interventions for increasing pedestrian and cyclist visibility	2003
Child pedestrian safety	2003
The effectiveness of physical exercise for sleep problems in adults aged 60+	2002
Effectiveness of a telephone intervention as a delivery strategy within the scope of public health nursing practice	2000
Effectiveness of video for health education	2000
Effectiveness of anticipatory care interventions with community-dwelling elderly persons	2000
Effectiveness of coalitions in heart health promotion, tobacco use reduction, and injury prevention: a systematic review of the literature 1990-1998*	1999
Prevention of unintentional injuries in childhood and young adolescence	1999
Effectiveness of school-based programs in reducing adolescent risk behaviour: a systematic review of reviews*	1999
The effectiveness of school-based curriculum suicide prevention programs for adolescents*	1999
Sexual Health	
Women, sex and HIV	2004

Effective Public Health Practice Project. Reviews and Summary Statements

The effectiveness of public health interventions to reduce or prevent spousal abuse toward women*	2001
The effectiveness of the health promoting schools approach and school-based health promotion interventions	2001
Peer health promotion interventions for youth	2000
Effectiveness of school-based programs in reducing adolescent risk behaviour: a systematic review of reviews*	1999
A systematic review of the effectiveness of adolescent pregnancy primary prevention programs*	1999
A systematic review of the effectiveness of primary prevention programs to prevent sexually transmitted diseases (STDs) in adolescents*	1999
Reproductive Health	
Home visits during pregnancy and after birth for women with an alcohol or drug problem	2006
The effectiveness of interventions to prevent excessive weight gain in pregnancy*	2005
The effectiveness of folate supplementation for the prevention of neural tube defects	2002
Antenatal education for childbirth/parenthood	2001
The effectiveness of public health strategies to reduce or prevent the incidence of low birth weight in infants born to adolescents: A systematic review*	2001
The effectiveness of postpartum smoking relapse prevention strategies: A systematic review of the evidence 1992-1999*	2000
Smoking cessation during pregnancy	1999
The effectiveness of home visiting as a delivery strategy for public health nursing interventions to clients in prenatal and postnatal period: A systematic review*	1999
Child Health	
The effectiveness of early childhood home visitation in preventing violence: a systematic review	2006
The effectiveness of school-based interventions in reducing adolescent risk behaviours: A systematic review of reviews*	2005
Reviews of evidence on interventions to prevent dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries	2005
Social deprivation and the prevention of unintentional injury in childhood. A systematic review	2005
Optimal duration of exclusive breastfeeding	2002
Community-based interventions to improve child mental health: review of reviews*	2002
The effectiveness of school social work from a risk and resilience perspective	2002
The effectiveness of school-based violence prevention programs for children at risk	2002

Effective Public Health Practice Project. Reviews and Summary Statements

The effectiveness of public health interventions to reduce or prevent spousal abuse toward women*	2001
The effectiveness of the health promoting schools approach and school-based health promotion interventions	2001
Support for breastfeeding mothers	2001
Effectiveness of pre-school screening for hearing, speech, language and vision	2001
Antenatal education for childbirth/parenthood	2001
Parent-training programmes for improving maternal psychosocial health	2001
Effectiveness of a telephone intervention as a delivery strategy within the scope of public health nursing practice	2000
Effectiveness of video for health education	2000
The effectiveness of postpartum smoking relapse prevention strategies: A systematic review of the evidence 1992-1999*	2000
Promotion of healthy feeding in infants under one year of age	2000
Smoking cessation during pregnancy	1999
Effectiveness of school-based programs in reducing adolescent risk behaviour: A systematic review of reviews*	1999
A systematic review of the effectiveness of peer/paraprofessional 1:1 interventions targeted towards mothers (parents) of 0-6 year old children*	1999
Effectiveness of parenting groups with professional involvement in improving parent and child health/development outcomes*	1999
The effectiveness of home visiting as a delivery strategy for public health nursing interventions to clients in prenatal and postnatal period: A systematic review*	1999
The effectiveness of school-based curriculum suicide prevention programs for adolescents*	1999
Infectious Diseases	
Bioterrorism Preparedness	2003
The effectiveness of needle exchange programs in modifying HIV-Related outcomes: A systematic review of the evidence 1997-1999*	2000
Control of Infectious Diseases	
The effectiveness of methoprene for controlling mosquito populations in Ontario that can carry West Nile Virus	2004
Food Safety	
Effectiveness of food safety interventions*	2001
Food safety in community-based settings	1999

Effective Public Health Practice Project. Reviews and Summary Statements

Infection Control		
	Effective infection control interventions in day care centres	1999
Rabies Control, Safe Water, Sexually Transmitted Diseases		
	Review and meta-analysis of HIV prevention intervention research for heterosexual adult populations in the United States	2005
	Effectiveness of video for health education	2000
	A systematic review of the effectiveness of primary prevention programs to prevent sexually transmitted diseases (STDs) in adolescents*	1999
	The effectiveness of needle exchange programs in modifying HIV-Related outcomes: A systematic review of the evidence 1997-1999*	1999
Tuberculosis Control		
	Enhancing adherence to tuberculosis treatment	1999
Vaccine Preventable Diseases		
	Vaccines for preventing influenza in healthy children	2006
	Effect of patient reminder/recall interventions on immunization rates	2001
	The effectiveness of the health promoting schools approach and school-based health promotion interventions	2001

*Indicates a review completed by the Effective Public Health Practice Project.
 Completed reviews and summary statements are added to our web site as they become available.
 Please check www.hamilton.ca/phcs/ephpp/ regularly for new or updated information.

Appendix 6: Relevant Project Accounts

Klassen, A., Miller, A., Raina, P., Lee, S. K., & Olsen, L. (1999). Attention-deficit hyperactivity disorder in children and youth: A quantitative systematic review of the efficacy of different management strategies. *Canadian Journal of Psychiatry, 44*, 1007-1016.

Miller, A., Lee, S. K., Raina, P., Klassen, A., Zupancic, J., & Olsen, L. (1998). A review of therapies for attention-deficit/hyperactivity disorder.

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