Table H-10. Findings on child or parent training or behavioral interventions for ADHD

| **Study**  **(Companion)**  **N**  **Qualitya**  **Design**  **Age Categoryb** | **Intervention** | **Comparison** | **Follow-up Times** | **Findings–Intervention** | **Findings–Comparison** | **Between group P value** |
| --- | --- | --- | --- | --- | --- | --- |
| **Academic performance** | | | | | | |
| Abikoff, 201349  180  Good  RCT  b | Organizational skills | Performance-based intervention precluding skill  Waitlist | 12 weeks | Academic Performance Rating Scale  Mean=pre: 53.45; post: 62.16  (SD=pre: 10.34; post: 10.52)  Academic Proficiency Scale  Mean=pre: 16.39; post: 18.55 (SD=pre: 4.27; post: 4.26) | Academic Performance Rating Scale  Mean=pre: 54.45; post: 63.96 (SD=pre: 11.12; post: 11.90)  Academic Proficiency Scale  Mean=pre: 17.08; post: 18.35 (SD=pre: 3.54; post: 3.89)  Academic Performance Rating Scale  Mean=pre: 54.06 ; post: 54.53 (SD=pre: 8.58; post: 9.74)  Academic Proficiency Scale  Mean=pre: 16.05 ; post: 16.63 (SD= pre: 3.22; post: 3.30) | NS  NS |
| Storebo, 201250  56  Good  RCT  b | Social skills group + medication management | Medication management (usual care) | 3 months  6 months | Conners CBRS Academic Score Mean=20.13 (SD=15.15)  Conners CBRS Academic Score Mean=21.04 (SD= 11.98); Between group MD: -0.48 (95% CI=-7.254 to 6.293) | Conners CBRS Academic Score Mean=17.88 (SD=10.11)  Conners CBRS Academic Score Mean=21.52 (SD 12.56) | NS |
| **Acceptability of treatment** | | | | | | |
| Chacko, 200951  120  Good  RCT  c | **STEPP** | BPT program  Waitlist | 2.07 months | Parent Treatment Attitude Inventory- Satisfaction with Process  Mean = 16.36 (SD = 2.03) | Parent Treatment Attitude Inventory- Satisfaction with Process  Mean = 14.12 (SD = 2.09) | P<0.01 |
| **Changes in standardized symptom scores** | | | | | | |
| Bai, 201552  89  Good  RCT  b | A psycho-education program based on the theory of planned behavior | General clinical counseling | 3 months | ADHD-RS-IV  Mean=33.7 (SD=5.4)  (Baseline mean=49.9, SD 11.5) | ADHD-RS-IV  Mean=45.1 (SD=7.9)  (Baseline mean=48.1, SD 8.1) | P=.008 |
| Chacko, 200951  120  Good  RCT  c | STEPP | BPT program  Waitlist | 2.07 months | Disruptive Behavior Disorder scale-Inattentive  Mean = 1.78 (SD = .63)  Disruptive Behavior Disorder- Hyperactive/Impulsive:  Mean = 1.69 (SD = .57)  Treatment Attitude Inventory- Satisfaction with Outcome  Mean = 24.18 (SD = 3.02) | Disruptive Behavior Disorder scale-Inattentive  Mean = 1.67 (SD = .74)  Disruptive Behavior Disorder- Hyperactive/Impulsive:  Mean = 1.59 (SD = .70)  Treatment Attitude Inventory- Satisfaction with Outcome  Mean = 20.20 (SD = 2.35)  Disruptive Behavior Disorder scale-Inattentive  Mean = 1.72 (SD = .65)  Disruptive Behavior Disorder- Hyperactive/Impulsive:  Mean = 1.72 (SD = .56) | NR  NR  NR  NR  NR |
| Ferrin, 201453  81  Good  RCT  c | Psycho-educational program | Control | 12 weeks  12 months | CPRS inattention -12 weeks  Mean = 7.95 (SD = 3.84) p = .001  CPRS hyperactivity/impulsivity -12 weeks  Mean = 6.74 (SD = 4.84)  Conners parent rating scale – index  Mean = 18.6 (SD = 8.66)  Conners parent rating scale – opposition subscale  Mean = 5.2 (SD = 4.06)  Conners parent rating scale- inattention/cognition  Mean = 8.26 (SD = 4.3) p = .032  Conners parent rating scale – hyperactivity/impulsivity  Mean = 7.4 (SD = 4.84)  CPRS index -12 weeks  Mean = 16.8 (SD = 7.18) p = .001  CPRS opposition -12 weeks  Mean = 4.95 (SD = 3.79) | CPRS inattention -12 weeks  Mean = 11 (SD = 3.28)  CPRS hyperactivity/impulsivity -12 weeks  Mean = 8.45 (SD = 4)  Conners parent rating scale – index  Mean = 21.16 (SD = 7.08)  Conners parent rating scale – opposition subscale  Mean = 5.63 (SD = 3.86)  Conners parent rating scale- inattention/cognition  Mean = 10.41 (SD = 3.62)  Conners parent rating scale – hyperactivity/impulsivity  Mean = 8.47 (SD = 3.82)  CPRS index -12 weeks  Mean = 22.44 (SD = 6.13)  CPRS opposition -12 weeks  Mean = 6.18 (SD = 3.87) | P=0.001  NS  NS  NS  P=0.0032  NS  P=0.001  NS |
| Hiscock, 201554  (Papadopoulos, 201555)  244  Good  RCT  c | Sleep hygiene practices and standardized behavioral strategies | Children in the control group received usual clinical care | 6 Months | ADHD rating scale IV-total symptoms (parent report)  Mean = 28.4 (SD = 10.8)  ADHD Rating Scale IV – Parent Report (Inattentive)  Mean = 15.1 (SD = 6.0)  ADHD Rating Scale IV – Parent Report (Hyperactivity/Impulsivity)  Mean = 13.3 (SD = 6.0)  ADHD rating scale IV Total Score (Teacher Report)  Mean = 20.6 (SD = 11.6)  ADHD Rating Scale IV: Teacher Report (Inattentive)  Mean = 14.1 (SD = 6.9)  ADHD Rating Scale IV: Teachers Report (Hyperactivity/Impulsivity)  Mean = 8.4 (SD = 6.2) | ADHD rating scale IV-total symptoms (parent report)  Mean = 33.8 (SD = 9.5)  ADHD Rating Scale IV – Parent Report (Inattentive)  Mean = 18.2 (SD = 4.8)  ADHD Rating Scale IV – Parent Report (Hyperactivity/Impulsivity)  Mean = 15.6 (SD = 5.8)  ADHD rating scale IV Total Score (Teacher Report)  Mean = 25.1 (SD = 12.6)  ADHD Rating Scale IV: Teacher Report (Inattentive)  Mean = 12.3 (SD = 6.9)  ADHD Rating Scale IV: Teachers Report (Hyperactivity/Impulsivity)  Mean = 10.9 (SD = 7.1) | P=0.004  P=0.001  P=0.04  P=0.31  P=0.59  P=0.19 |
| Ostberg, 201256  92  Good  RCT  b | Barkley based Parent + Teacher behavioral intervention | Waitlist | 10 weeks  3 months | ADHD-C Parent  Mean = 9.1 (SD = 4.5)  ADHD-C Teacher  Mean = 7.7 (SD = 6.3)  ADHD-C Parent  Mean = 7.7 (SD = 4.7)  ADHD-C Teacher  Mean = 7.7 (SD = 5.7) | ADHD-C Parent  Mean = 9.8 (SD = 6)  ADHD-C Teacher  Mean = 9.4 (SD = 6.3)  ADHD-C Parent  Mean = 10.1 (SD = 5.3)  ADHD-C Teacher  Mean = 9.4 (SD = 5.4) | NS  NS  P<.05  NS |
| Pfiffner, 201457  199  Good  RCT  b | Child Life and Attention Skills Treatment | Parent group component only  Evaluation and community care  Parent group component only  Evaluation and community care | 10-13 weeks  5-7 months | Parent Child Symptom Inventory  Mean=2.2 (SE=0.3)  Child Symptom Inventory  Mean=2.99 (SE=0.3)  Parent Child symptom inventory  Mean=2.2 (SE=0.3)  Child symptom inventory  Mean=3.7 (SE=0.4) | Parent Child Symptom Inventory  Mean=3.2 (SE=0.3)  Child Symptom Inventory  Mean=4.2 (SE=0.3)  Parent Child Symptom Inventory  Mean=4.1 (SE=0.4)  Child Symptom Inventory  Mean=5 (SE=0.4)  Parent Child Symptom Inventory  Mean=3.2 (SE=0.3)  Child Symptom Inventory  Mean=4.2 (SE=0.4)  Parent Child Symptom Inventory  Mean=4.1 (SE=0.4)  Child Symptom Inventory  Mean=4.2 (SE=0.4)  Parent Child Symptom Inventory  Mean=4.1 (SE=0.4)  Child Symptom Inventory  Mean=4.2 (SE=0.4) | P=.001  P<0.001  NR  NR  NR  NR  P<0.001  P=0.396  NR |
| Ercan, 201458  120  Fair  Observational  b | MPH+11 months of parent training | MPH (Usual care) | 12 months | CPRS  Mean w/in group change = 7.91 (SD = 6.9)  CTRS–teacher  Mean = 29.69 (SD = 15.03) | CPRS  Mean w/in group change = 10.07 (SD = 5.74)  CTRS–teacher  Mean = 35.27 (SD = 13.47) | NS |
| Huang, 201559  97  Fair  RCT  b | Behavioral-based social skill training for patients and parallel parent group sessions | Group therapy for motivation and treatment per usual care, such as medication and counseling at the outpatient department | 6 months | Change in Child Behavioral Checklist Withdrawn Subscale  Mean= -.84 (SD=2.3)  Change in CBCL Somatic Complaints Subscale  Mean within group change= -.14 (SD=2.7)  CBCL Change Anxious/Depressed Subscale  Mean within group change= -2.19 (SD=4)  CBCL Change Social Problems Subscale  Mean within group change= -1.4 (SD=2.3)  CBCL Change Thought Problems Subscale  Mean within group change= -1.02 (SD=2.8)  CBCL Change Attention Problems Subscale  Mean within group change= -1.26 (SD=2.8)  CBCL Change Delinquent Behavior Subscale  Mean within group change= -.76 (SD=2.2)  CBCL Change Aggressive Behavior Subscale  Mean within group change= -4 (SD=7.1) | Change in Child Behavioral Checklist Withdrawn Subscale  Mean= -.28 (SD=1.6)  Change in CBCL Somatic Complaints Subscale  Mean within group change= -1.42 (SD=3.7)  CBCL Change Anxious/Depressed Subscale  Mean within group change= -.89 (SD=3.7)  CBCL Change Social Problems Subscale  Mean within group change= -.92 (SD=2.2)  CBCL Change Thought Problems Subscale  Mean within group change= -1.06 (SD=2.1)  CBCL Change Attention Problems Subscale  Mean within group change= -1.772 (SD=3.2)  CBCL Change Delinquent Behavior Subscale  Mean within group change= -.6 (SD=1.9)  CBCL Change Aggressive Behavior Subscale  Mean within group change= -2.37 (SD=5.9) | P=0.84  P=0.14  P=0.79  P=0.57  P=0.60  P=0.04  P=0.91  P=0.94 |
| **Depression or anxiety** | | | | | | |
| Hiscock, 201554  (Papadopoulos, 201555)  244  Good  RCT  c | Sleep hygiene practices and standardized behavioral strategies | Children in the control group received usual clinical care | 6 Months | Depression or anxiety-Depression Anxiety Stress Scale  Mean = 31.3 (SD = 23.6)  Depression or anxiety-Parent mental health with the Depression Anxiety Stress Scale – Total score | Depression or anxiety-Depression Anxiety Stress Scale  Mean = 33.9 (SD = 28.5) | P=0.55 |
| **Functional impairment** | | | | | | |
| Chacko, 200951  120  Good  RCT  c | STEPP | BPT program  Waitlist | 2.07 months | Impairment Rating Scale (IRS)-Overall  Mean = 3.31 (SD 1.41) | Impairment Rating Scale (IRS)-Overall  Mean = 4.11 (SD 1.67)  Impairment Rating Scale (IRS)- Overall  Mean = 4.65 (SD 1.30) | P<.01  NR |
| Pfiffner, 201457  199  Good  RCT  b | Child Life and Attention Skills Treatment | Parent group component only  Evaluation and community care  Parent group component only  Evaluation and community care | 10-13 weeks  5-7 months | Parent CGI  Mean=6 (SE=0.7)  Teacher CGI Severity  Mean=5.8 (SE=0.8)  Parent CGI  Mean=6 (SE=1)  Teacher CGI-Severity  Mean=3.4 (SE=0.2) | Parent CGI  Mean=5.8 (SE=0.9)  Teacher CGI Severity  Mean=5.2 (SE=1)  Parent CGI  Mean=5 (SE=1)  Teacher CGI Severity  Mean=5 (SE=1.1)  Parent CGI  Mean=5.8 (SE=1)  Teacher CGI-Severity  Mean=3.5 (SE=0.2)  Parent CGI  Mean=5.3 (SE=0.23)  Teacher CGI Severity  Mean=3.6 (SE=0.2) | P=0.0  P=0.0  NR  NR  P=0.001  P=0.775  NR  NR |
| **Sleep disturbance** | | | | | | |
| Hiscock, 201554  (Papadopoulos, 201555)  244  Good  RCT  c | Sleep hygiene practices and standardized behavioral strategies | Children in the control group received usual clinical care | 6 Months | Sleep disturbance-Child Sleep Habits Questionnaire (CSHQ) Total Score  Mean 53.2 (7.5) | Sleep disturbance-Child Sleep Habits Questionnaire (CSHQ) Total Score, Mean = 55.9 (8.8) | P<0.001 |
| **Workforce participation** | | | | | | |
| Hiscock, 201554  (Papadopoulos, 201555)  244  Good  RCT  c | Sleep hygiene practices and standardized behavioral strategies | Children in the control group received usual clinical care | 3 months | Workforce participation-Days late for work  Workforce participation-Missed days of work |  | P=0.02  P=0.03 (both non-parametric tests) |

a See Methods section “Quality Assessment of Individual Studies” for definitions of quality assessment ratings.

b Age categories: a = children aged ≤6 years, b = children aged 7-17, c = children of all ages ≤17.

Abbreviations: ADHD=attention deficit hyperactivity disorder; BPT=Behavioral Parent training; CBCL=Child Behavior Checklist; CBRS=Comprehensive Behavior Rating Scale; CGI=Clinician Global Impressions; DASS=Depression Anxiety Stress Scale; NR=not reported; STEPP=Strategies to Enhance Positive Parenting; RCT=randomized controlled trial