

## Supplementary Online Content

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**eTable.** Included Studies: Demographic and Descriptive Characteristics

This supplementary material has been provided by the authors to give readers additional information about their work.

**eTable. Included Studies: Demographic and Descriptive Characteristics**

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
<b>Treatment Interventions Targeting Mental Health Problems with Collaborative Care Models</b>											
<b>Asarnow et al.,<sup>38</sup> 2005 (US)</b>	418	Youth	13-21 years (17.2, 2.1)	13.4% African-American, 1.2% Asian, 56.0% Hispanic/Latino, 13.6% Mixed, 3.1% Other	Depression	Quality Improvement Intervention	Quality improvement intervention including patient and provider choice of meds, CBT, or combo.	Varied depending on which intervention (meds, CBT) provider and youth selected. CWD-A = 14 sessions  Intervention Period: 6 months	6 months	UC + PCP education on depression evaluation and management	Depression symptoms
<b>Clarke et al.,<sup>41</sup> 2005 (US)</b>	152	Youth	12-18 years Intervention (15.29, 1.62); Control (15.32, 1.62)	Intervention mean = 12.99% minority  Control mean = 15.07%	Depression	UC SSRI + Brief CBT	CBT intervention provided by therapist in conjunction with PCP consultation for SSRI medication	Range = 0-9 sessions M = 5.3, SD=2.9	12 weeks	UC with SSRI treatment	Depression symptoms

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
			1.60)	minority			management.				
<b>Kolko et al.,<sup>50</sup> 2012 (US)</b>	78	Youth	5-12 years (8.7, 2.4)	9% Nonwhite	Behavior problems	Doctor-office collaborative care (DOCC)	A CBT intervention delivered by a team of PCPs, care managers, and child psychiatrists.	Up to 12.0 hours  Intervention Period: 6 months	6 months	UC+ psychoeducation, clinical recommendations, and facilitated referral by CM	Clinical global improvement
<b>Kolko et al.,<sup>48</sup> 2014 (US)</b>	321	Youth	Age range not reported; Intervention (7.8, 1.9); Control (8.2, 2.0)	Intervention = 16.3% African-American, 4.4% Multiple  Control= 18.6% African-American, 5.6% Multiple	Behavior problems	Doctor-office collaborative care (DOCC)	A CBT intervention delivered and/or coordinated by case managers and PCP involvement.	6-12 individual/family sessions  Intervention Period: 6 months	6 months	UC + psychoeducation and facilitated referral by CM	Clinical global improvement; Externalizing and internalizing symptoms
<b>Richardson et al.,<sup>59</sup></b>	101	Youth	13-17 years (15.3,	5% African American, 2% Asian,	Depression	ROAD Intervention	Collaborative care intervention	Brief CBT component 8 sessions.	12 months	UC + Letter	Depression

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
<b>2014 (US)</b>			1.3)	24% Other			delivered by depression care managers, in collaboration with psychologist, psychiatrist, and pediatrician	Medication management throughout study participation  Intervention Period: 12 months	hs	summarizing screening results and recommending treatment sent to patients, parents, and PCP	symptoms
<b>Treatment Interventions Targeting Mental Health Using Other Models (Not Collaborative Care)</b>											
<b>Borowsky et al.,<sup>40</sup> 2004 (US)</b>	224	Youth, Parents	7-15 years  Intervention (11.2, 2.3); Control (10.9, 2.3)	Not given	Behavior / Violence	Clinician Ax and Parenting Education	PCP feedback on screening.  Parenting Program available as additional referral resource.  Telephone-based with video and manual.  Delivered by	1 intervention session; access to optional parent phone coaching service (13 lessons)	9 months	UC	Aggressive behavior, Delinquent behavior, Parent-reported fighting

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
							Parent-Educator.				
<b>Epstein et al.,<sup>44</sup> 2007 (US)</b>	146	Youth	Age range not reported, 1 <sup>st</sup> – 5 <sup>th</sup> grades (7.8, 1.5)	16.4% African-American, 1% American Indian, 1% Hispanic/Latino, 2% Multiracial	ADHD	Collaborative Consultation Service	A collaborative consultation service assisted PCPs in using titration trials and rating scales to monitor medication efficacy.	4 week stimulant titration	3 months	UC	ADHD symptoms
<b>Kjobli &amp; Ogden,<sup>47</sup> 2012 (Norway)</b>	216	Youth, Parents	3-12 years (7.28, 2.61)  Health clinics +other community service	4.6% Other (non-Western European)	Behavior problems	Brief Parent Training	Brief parent training intervention based on Oregon Social Interaction Learning model. Aims to promote	3 – 5 sessions	1-2 months	UC	Behavior problems

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
			settings considered “primary care setting.”				parenting skills in families with children with behavior/conduct problems				
<b>Kolko et al.,<sup>49</sup> 2010 (US)</b>	163	Youth	6-11 years (8.1, 1.6)	20.2% Nonwhite	Behavior problems	Protocol for On-site Nurse-administered Intervention (PONI)	Nurse hired by study to implement multi-component CBT intervention in primary care offices including: child CBT, parent management training, CBT skills training with child and parent, development	6 primary sessions (1.5 hours each) and 2-4 booster sessions. Approximately 10 visits over 3-6 months	6 months	UC enhanced by feedback on assessment results, and facilitated referral to off-site mental health care	Behavior problems, externalizing symptoms

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
							education and peer enrichment with parents, family psychoeducation and skills training, , ADHD medication, school/teacher consultation, and crisis and case management				
<b>Lavigne et al.,<sup>52</sup> 2008</b> <b>psychologist arm</b> <b>(US)</b>	117	Youth, Parents	3-6 years (4.6, 1.0)	Not reported	Oppositional defiant disorder	Incredible Years, Parenting program	Parenting program administered by study-hired psychologists. Parents learn skills of attention,	12 one-hour sessions or 6 two-hour sessions in group format	3 months	UC + The Incredible Years book	Externalizing problems

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
							praise, consequences, appropriate discipline through video-assisted vignettes in group format				
<b>Lavigne et al.,<sup>52</sup> 2008 nurse arm (US)</b>							Parenting program administered by study-hired nurses. Parents learn skills of attention, praise, consequences, appropriate discipline through video-assisted	12 one-hour sessions or 6 two-hour sessions in group format	3 months	UC + The Incredible Years book	Externalizing problems

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
							vignettes in group format				
<b>Lavigne et al.,<sup>51</sup> 2011 (US)</b>	270	Youth	5-11 years (8.2., SD not provided)	12.2% Hispanic, 2.5% African American, 2.2% Other	ADHD	Computer-assisted medication management	Physicians trained in ADHD medication titration, with computer assisted program to track titration and symptoms	Intervention period: 4 months	4 months	UC	ADHD symptoms
<b>Mufson et al.,<sup>54</sup> 2004 (US)</b>	63	Youth	12-18 years (15.1, 1.9)  Health clinics affiliated with school-based	71% Hispanic/Latino	Depression	Interpersonal Psychotherapy for Adolescents (IPT-A)	A brief interpersonal therapy intervention modified for depressed adolescents in school-based mental health clinics.	12 sessions during a 12-16 week period (first 8 sessions consecutive)	12 weeks	UC	Depression, Global functioning, Improvement

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
			services								
<b>Patterson et al.,<sup>55</sup> 2002 (UK)</b>	116	Youth, Parents	2-8 years; (M, SD not reported)	5% Asian, 1% Black, 3% mixed	Behavior problems	Webster-Stratton Parenting Programme	Parenting intervention in group format. Techniques include commands, limit setting, ignoring undesirable behavior, praise, and discipline. Delivered at health and local community centers.	10 sessions 2 hours each, over the course of 10 weeks	10 weeks	UC	Behavior problems
<b>Perrin et al.,<sup>57</sup> 2014 (US)</b>	150	Youth, Parents	1-3 years Intervention (2.7, .55); Control (2.8, .65)	12% African American, 1% Asian, 12% Other	Behavior problems	Incredible Years (adapted)	Parenting program in group format with skills of play, praise, limit setting, handling	10 weekly sessions, 2 hours each in group format	10 weeks	UC consisted of waitlist control period (could still receive PCP services but did not receive	Behavior Problems

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
			Youth screened and selected for elevated behavioral problems; excluded if met autism spectrum diagnosis				misbehavior.			Incredible Years)	
<b>Reid et al.,<sup>58</sup> 2013 (UK)</b>	164	Youth	2-5 years Intervention (3.1, 1.0); Control (3.3, 1.1)  Parents concerned about child's discipline during	Intervention = 1.2% Native-Aboriginal People, 2.4% Other  Control= 2.4% African-American, 3.7% Native-	Behavior problems, parent concern about behavior	Parenting Matters	A minimal-contact intervention that utilizes a self-help booklet and telephone coaching calls to treat behavior problems.	A self-help booklet with 2 telephone calls over 6 weeks	6 weeks	UC	Behavior problems

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
			routine primary care appointment recruited	Aboriginal People, 4.4% Other							
<b>Spijkers et al.,<sup>60</sup> 2013 (Netherlands)</b>	93	Youth, Parents	9-11 years (10.59, .68),  Identified during routine primary child health screening as elevated symptoms; excluded for diagnosis	Not reported	Behavior problems	Primary Care Triple P	Brief behavioral family intervention for child behavior problems	1-4 sessions	4 weeks	UC varied from advice from child healthcare professional to a home visit with no pre-specified guidelines. Maximum of three contacts by child healthcare professional	Behavior problems

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
<b>Turner &amp; Sanders,<sup>62</sup> 2006</b> (Australia)	30	Parents	2-6 years Intervention (3.12, 0.85); Control (3.59, 0.89)  Parent identified behavior problems, excluded for diagnosis	Not reported	Behavior problems	Primary Care Triple P-Positive Parenting	Brief behavioral family intervention for child behavior problems	3-4 brief sessions with primary care nurses	1-2 months	UC consisted of waitlist control period (could still receive PCP services but did not receive Triple P)	Behavior problems
<b>Warner et al.,<sup>66</sup> 2011</b> (US)	40	Youth	8-18 years (12.4, 2.6)  Subgroup referred from specialty physicians	15% Hispanic/Latino, 10% Other, 2.5% African-American	Anxiety and somatic complaints	Treatment of Anxiety and Physical Symptoms (TAPS)	CBT treatment for pain and anxiety	12 individual sessions, and 3 parent sessions, over 10 weeks; 2 monthly boosters post-treatment	3 months	UC	Global improvement

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
<b>Wisow et al.,<sup>67</sup> 2008 (US)</b>	418	Youth, Parents	5-16 years (10.4, 3.42);  Youth selected after assessment algorithm identified them as having possible or probable emotional or behavioral problem	30% Black, 12% Latino, 4% other	Behavioral and mood problems	Provider training in mental health communication skills	PCP training in mental health communication skills in order to use skills at child wellness or other primary care visits	Youth monitored for 6 months after PCP training and first primary care visit.	6 months	UC – PCPs not trained in communication skills intervention.	Behavior and mood problems and impairment
<b>Treatment Interventions Targeting Substance Use</b>											
<b>Audrain-McGovern et al.,<sup>39</sup></b>	355	Youth	14-18 years (Not	45% Black; 15% Other/Mixed, 12%	Smoking	Motivational Interviewing	MI intervention delivered by counselors	Three 45-minute office sessions and two 30-	12 weeks	Structured Brief Advice – up to 5	Smoking reduction, Smoking

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
<b>2011 (US)</b>			reported); Recruited from adolescent medicine clinics for endorsing recent substance use	Hispanic			embedded in practice site to develop discrepancy between current behavior and goals, emphasis on autonomy and control, support of self-efficacy	minute office or phone sessions over 12 weeks		sessions of brief advice based on clinical practice guidelines for treating nicotine dependence	Cessation
<b>D'Amico et al.,<sup>43</sup> 2007 (US)</b>	42	Youth	12-18 years (16, 1.847); Youth selected for endorsing recent drug/alcohol use and some consequence due	85.7% Hispanic/Latino, 9.5% African-American,	Substance Use	Project CHAT	Brief MI intervention during a primary care visit, with telephone follow-up.	1 MI Intervention; 1 booster phone call 1 month later	3 months	UC	Alcohol use, Marijuana use

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
			to use								
<b>Pbert et al.,<sup>56</sup> 2008 cessation arm (US)</b>	2,709	Youth	13-17 years; Intervention (16.84, 1.44); Control (16.85, 1.41)	Intervention = 1.5% African-American, 4.0% Hispanic, 1.5% Asian, 0.1% American Indian  Control= 2% African-American, 2.6% Hispanic/Latino, 1.4% Asian, 0.1% American Indian	Substance Use	Provider and Peer Delivered Intervention (PPDI)	Brief counseling by PCP followed immediately by cessation intervention for smokers with a peer counselor, who then followed up at 4 intervals for phone counseling. Used 5A model (ask, advise, assess, assist, arrange) recommended by US Public Health Service	1 intervention session with PCP, then 1 intervention session and 4 telephone calls with peer counselors	6 months	UC	Smoking cessation

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
							clinical practice guidelines and American Academy of Pediatrics				
<b>Walton et al.,<sup>64</sup> 2013 (US)</b>	328	Youth	12-18 years (16.3, 1.6)	60.7% African-American, 11.0% Hispanic/Latino	Substance Use	Project Chill – Therapeutic Behavioral Intervention	Motivational interviewing facilitated by computerized content. MI focused on reducing use, avoiding consequences	1 session with MI-trained therapist	3 months	UC + Informational brochure on warning signs of use problems and resources	Cannabis use and related consequences
						Project Chill – Computerized Behavioral Intervention	Standalone interactive computer program with research staff	1 session computerized program	3 months	Same as above UC + Informational Brochure	Cannabis use and related consequences

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
<b>Prevention Interventions Targeting Mental Health</b>											
<b>Gillham et al.,<sup>45</sup> 2006 (US)</b>	271	Youth	11-12 years (M, SD not reported)-Required CDI of 7 (girls) and 9 for boys, but excluded youths with depressive disorders based on K-SADS-P	9% African-American, 8% Hispanic/Latino, 2% Asian, 7% Other	Depression	Penn Resiliency Program (PRP)	CBT group led by clinicians trained on-site in primary care settings for prevention of depression.	12 group sessions, 90 minutes each	3 months	UC	Depression symptoms, Depression diagnosis
<b>Hiscock et al.,<sup>46</sup> 2008 (Australia)</b>	733	Youth, Parents	8-15 months; Outreach by Maternal & Child Health Nurses	Not reported	Behavior problems	Universal preventative intervention	Brief intervention targeting parenting risk factors: unreasonable expectations, harsh parenting, lack of nurturing	3 sessions at 8 months, 12 months, and 15 months	16 months	UC	Behavior problems

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
							parenting				
<b>Van Voorhees et al.,<sup>37</sup> (2008) (US)</b>	84	Youth	14-21 years (17.44, 2.04);  Youth eligible if experiencing at least one core depressive symptom for a few days at sub-threshold level; ineligible if meet for probable or full depression diagnosis	22.89% African-American, 4.82% Hispanic/Latino, 5.68% Asian, 3.75% Other	Depression	MI + CATCH-IT internet program	Brief MI intervention with PCP, followed by participation in an internet preventative intervention (14 modules)	15 minute MI session with PCP and internet intervention; 3 phone calls	4-8 weeks	Brief Advice (2-3 minute) + CATCH-IT internet intervention	Depression
<b>Prevention Interventions Targeting Substance Use</b>											

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
Curry et al., <sup>42</sup> 2003 (US)	504	Youth, Parents	10-12 years (11, SD not reported)	16% nonwhite	Smoking	Steering Clear Smoking Prevention for Preteens	Multicomponent preventative intervention for youth and parents including mailed smoking prevention kit, outreach follow-up telephone calls by health educator, child materials, medical record cues for physicians to deliver prevention messages, and parent	2 outreach telephone calls over 14 months, motivational messages from primary care providers at routine primary care visits	20 month	Usual care	Smoking

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
							newsletter.				
<b>Mason et al.,<sup>53</sup> 2011 (US)</b>	28	Youth	14-18 years (M=16); Youth selected for minimal substance use	82% African-American, 18% Mixed/Other	Substance Use	Motivational Interviewing and Social Network (MI/SN)	A 15-20 minute MI intervention integrating Social Network counseling.	1 MI intervention session	1 month	UC	Substance use
<b>Pbert et al.,<sup>56</sup> 2008 abstinence arm (US)</b>	2,709	Youth	13-17 years; Intervention (16.84, 1.44); Control (16.85, 1.41)	Intervention = 1.5% African-American, 4.0% Hispanic, 1.5% Asian, 0.1% American Indian  Control= 2% African-American, 2.6% Hispanic/Latino, 1.4%	Substance Use (prevention and cessation)	Provider and Peer Delivered Intervention (PPDI)	Brief counseling by PCP followed immediately by prevention intervention for current non-smokers and cessation intervention for smokers with a peer counselor, who then followed up	1 intervention session with PCP, then 1 intervention session and 4 telephone calls with peer counselors	6 months	UC	Smoking abstinence

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
				Asian, 0.1% American Indian			at 4 intervals for phone counseling. Brief counseling by PCP followed promptly by cessation intervention for smokers with a peer counselor, who then followed up at 4 intervals for phone counseling. Used 5A model (ask, advise, assess, assist, arrange) recommended by US Public Health				

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
							Service clinical practice guidelines and American Academy of Pediatrics				
<b>Stevens et al.,<sup>61</sup> 2002 (US)</b>	3,111	Youth	(11.0, 0.9)	Not Reported	Substance use	Alcohol/Tobacco Prevention Intervention delivered by PCP	Anticipatory guidance conversation with PCP during wellness visit wherein PCP described risks of behavior and family agreed to discuss risks at home and develop a family policy about alcohol and tobacco	1 conversation with PCP, 1 letter sent to family 10 days after PC visit as well as quarterly newsletters	12 months	SAFETY Intervention (bicycle helmet use, gun storage and seatbelt safety)	Substance use

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
							use. Participants received letter from clinician 10 days after visit as well as quarterly newsletters to reinforce clinician messages.				
<b>Walker et al.,<sup>63</sup> 2002 (US)</b>	970	Youth	14-16 years (14.8, SD not reported); All youth presenting to primary care invited to participate	Not reported	Substance use	Consultation w/Practice Nurse	Brief consultations with practice nurses to discuss teenage health concerns and plan for future health.	1 20-minute consultation session with nurse	3 months	UC	Alcohol reduction; Smoking reduction
<b>Walton et al.,<sup>65</sup> 2014</b>	714	Youth	12-18 (14.9; 1.9)	64% African American, 9% Hispanic	Substance use	Project Chill – Therapeutic Behavioral	Motivational interviewing facilitated by computerize	1 session with MI-trained	3 months	UC + Informational brochure on warning signs	Cannabis use and related consequences

Study (Country)	N	Target Population	Youth Age Range (M, SD)	% Minority	Intervention Target	Intervention Name	Intervention Description	Intervention Dose	Acute Follow-Up	Comparator Condition	Primary Outcomes
(US)						Intervention	d content. MI focused on preventing or delaying substance use	therapist		of use problems and resources	ces
						Project Chill – Computerized Behavioral Intervention	Standalone interactive computer program with research staff	1 session computerized program	3 months	UC + Informational brochure on warning signs of use problems and resources	Cannabis use and related consequences

ADHD, attention deficit/hyperactivity disorder; CBT, cognitive behavioral therapy; EUC, enhanced UC (e.g., provider education, feedback on screening results, facilitated referral to specialty mental health care); MI, motivational interviewing; PCP, primary care provider; SSRI, selective serotonin reuptake inhibitor; UC, usual care