Published in final edited form as:

Adm Policy Ment Health. 2018 May ; 45(3): 417–431. doi:10.1007/s10488-017-0836-8.

Stepped Care Interpersonal Psychotherapy Treatment for Depressed Adolescents: A Pilot Study in Pediatric Clinics

Laura Mufson^{1,2}, Moira Rynn³, Paula Yanes-Lukin^{1,2}, Tse Hwei Choo^{2,4}, Karen Soren^{5,6}, Eileen Stewart⁶, and Melanie Wall^{2,4}

¹Department of Psychiatry, Columbia University College of Physicians and Surgeons, New York, NY, USA

²New York State Psychiatric Institute, 1051 Riverside Drive, Unit 74, New York, NY 10032, USA

³Department of Psychiatry and Behavioral Sciences, Duke University, Durham, NC, USA

⁴Department of Biostatistics, Columbia University College of Physicians and Surgeons, New York, NY, USA

⁵Department of Pediatrics, NYP-Morgan Stanley Children's Hospital, Columbia University Medical Center, New York, NY, USA

⁶Department of Social Work, NYP-Morgan Stanley Children's Hospital, Columbia University Medical Center, New York, NY, USA

Abstract

Adolescents with depression are at risk for negative long-term consequences and recurrence of depression. Many do not receive nor access treatment, especially Latino youth. New treatment approaches are needed. This study examined the feasibility and acceptability of a stepped collaborative care treatment model (SCRIPT-A) for adolescents with depression utilizing interpersonal psychotherapy for adolescents (IPT-A) and antidepressant medication (if needed) compared to Enhanced Treatment as Usual (E-TAU) in urban pediatric primary care clinics serving primarily Latino youth. Results suggest the SCRIPT-A model is feasible, acceptable and potentially beneficial for urban Latino adolescents. Clinicians delivered the SCRIPT-A model with fidelity using supervision successfully implemented in a community setting.

Correspondence to: Laura Mufson.

This study was presented as an abstract at the American Academy of Child and Adolescent Psychiatry's 61st Annual Meeting, San Diego, CA, October 2014.

Compliance with Ethical Standards

Conflict of interest Mufson receives book royalties from Guilford Press, Inc. and Oxford University Press, and has received speaker honorarium from Janssen Pharmaceuticals and research support from the National Institute of Mental Health. She has received fees for academic lectures and Ground Rounds. Rynn has received research support from the National Institute of Mental Health (NIMH), the National Institute of Child Health and Human Development (NICHD), Eli Lilly and Shire. She has served as a consultant to Shire and has received royalties from American Psychiatric Publishing and a writing fee from Oxford University Press. She has received fees for academic lectures and Ground Rounds. The other authors declare that they have no conflict of interest.

Ethical Approval All authors complied with APA ethical standards in the treatment of participants and all work was approved by the Institutional Review Board at the New York State Psychiatric Institute. Informed consent/assent was obtained from all study participants and their parents, if applicable.

Keywords

Adolescents; Depression; Psychotherapy; Primary care; Treatment; Interpersonal; Collaborative care

Introduction

Approximately one in ten adolescents will experience a major depressive episode at some point during their teenage years (Merikangas et al. 2010), and 60% of adolescents who are depressed do not receive any services nor adequate treatment (Merikangas et al. 2011). Thus they are at risk for recurrent episodes and other negative long-term consequences including suicidal behavior, unemployment, poor physical health, and other mental health disorders (Jonsson et al. 2011; Thapar et al. 2012). Minority youth, such as Hispanic adolescents, have elevated rates of depression (Potochnick and Perreira 2010) and though prevalence of depression is lower among Blacks than Whites, the chronicity and burden of depression are greater for Blacks (Williams et al. 2007). Moreover, minority youth are often less likely than White youth to have access to quality mental health services (Alegria et al. 2010; Hough et al. 2002; Williams et al. 2007), thus highlighting the importance of identifying ways to increase access to services.

Hispanics have the lowest treatment utilization for depression as compared to other ethnicities according to the National Comorbidity Survey Adolescent Supplement (NCS-A) findings (Merikangas et al. 2011). Several treatment barriers for Latino youth include cultural variations in problem recognition, attitudes towards mental health services, socioeconomic factors, lack of appropriate services (Cauce et al. 2002), concerns about stigma (Merikangas et al. 2011), and language issues (Garcia and Duckett 2009; Yeh et al. 2003). Even in schools that offer on-site services, Latino youth, compared to non-Latino Whites, are still less likely to obtain treatment (Bear et al. 2014; Guo et al. 2014; Kim et al. 2015). Other more accessible and less-stigmatized locations for providing treatment include primary care settings (Kelleher and Stevens 2009). Latinos have been reported to trust the recommendations and judgment of primary care providers more than mental health providers and thus pediatric primary care settings may be a more acceptable site for receiving mental health care (Brown et al. 2007; Ishikawa et al. 2014).

Indeed, most psychosocial problems in youth are managed by primary care providers (Rushton et al. 2002; Sayal 2006); what remains unknown is what is the best model of care delivery in the primary care setting that can provide effective treatment for mental health problems. There is increasing evidence suggesting that a collaborative care model within pediatric clinics may be most effective. A collaborative care model involves a greater role for nonmedical specialists to augment primary care's management of mental health issues (Campo et al. 2005; Gilbody et al. 2006; Katon et al. 2001; Richards et al. 2008; Thota et al. 2012). This model often includes (1) enhanced patient education, (2) use of allied health professionals to provide closer monitoring of outcomes, adverse effects and adherence to treatment, (3) use of standardized measures to track outcomes, (4) a psychiatrist to provide supervision of the care managers regarding changes in medication, (5) stepped care

approaches that increase intensity of treatment for patients who do not respond to initial lower intensity approach or whose symptoms persist, and (6) care managers who may also provide the option of brief evidence-based psychotherapy (Katon et al. 2010). The use of a collaborative care model also facilitates the delivery of combined treatment as primary care physicians are more comfortable prescribing psychotropics within a collaborative care model (Heneghan et al. 2008).

Adult studies have shown that approximately 40–50% of depressed patients referred by their primary care physician (PCP) to mental health specialists fail to complete the referral and access care (Katon et al. 2010). The treatment gaps are more pronounced in adult minority populations and those living below the poverty level who have fewer options and greater barriers to accessing quality mental health care (Katon et al. 2010). The effectiveness of providing mental health care in primary care within a collaborative care model has already been widely demonstrated for adults suffering from depression, and specifically for low-income minority populations (Angstman et al. 2015; Davis et al. 2011; Dwight-Johnson et al. 2005; Gilmer et al. 2008). The advantages of the collaborative care approach include better patient education and symptom monitoring, increase in treatment of depressed patients, improved adherence with treatment, and enhanced knowledge about depression treatment in the primary care setting (Katon et al. 2010).

Despite the evidence for adult depression treatment, there are fewer studies assessing the effectiveness of collaborative care in the pediatric setting (Asarnow et al. 2005, 2015; Clarke et al. 2005; Richardson et al. 2014, 2009; Van Voorhees et al. 2009; Weersing et al. 2008). For example, Asarnow et al. (2005) examined the effectiveness of a quality improvement (QI) intervention in primary care that consisted of pediatricians supported by care managers to provide depression assessments and treatment with cognitive-behavioral therapy and other treatment options such as antidepressants for depressed adolescents. Results demonstrated that the QI intervention group had significantly greater improvement in depression than the treatment as usual group. This study was conducted in diverse pediatric practices with a large percentage of minority youth participants (approximately half the sample identified as Latino; Asarnow et al. 2005). Richardson et al. (2014) demonstrated that a collaborative care model in which youth with major depression or elevated depressive symptoms received brief cognitive-behavioral therapy, an antidepressant, or a combination of the two resulted in greater reductions in depression symptoms at 12 months than usual care which consisted of screening and referral information. The sample consisted of mostly non-Latino White (69%) adolescents. Most recently, Weersing et al. (2017) conducted a study of brief behavior therapy (BBT) compared to assisted referral to outpatient care for youth anxiety and depression treatment in primary care settings. They found that BBT was superior to assisted referral for treatment outcomes for anxiety and particularly for Hispanic youth. Although BBT did result in significant improvement overall and specifically for anxiety symptoms and functioning in both anxious and anxious-depressed youth, significant effects were not found for clinician-rated depression symptoms. These studies suggest that primary care can be an effective setting for mental health collaborative care.

The United States Preventive Services Task Force (USP-STF 2009) recommendations called for the expansion of screening and detection of depressed adolescents in primary care when

treatment is available. New effective care models that are flexible, responsive to cultural preferences, and utilize the available clinic and staff resources (Bower and Gilbody 2005; van't Veer-Tazelaar et al. 2009) are urgently needed to implement the recommendations, especially in underserved communities. Many families, particularly in the Hispanic community, are reluctant to use medication as front-line treatment (Cooper et al. 2003), and brief psychosocial interventions might not be sufficient to achieve full remission for depression (Mufson et al. 2015; Richardson et al. 2014). Given the success of the collaborative care model with ethnic minority adults (Angstman et al. 2015; Davis et al. 2011; Katon 2003; Katon et al. 2010) which has been incorporated into practice guidelines for adult depression (e.g., National Institute for Health and Care Excellence [NICE] 2009), a stepped collaborative care model may be the most viable approach.

A brief version of interpersonal psychotherapy for depressed adolescents (IPT-A) was found to be an acceptable form of treatment for depressed Latino adolescents treated in a pediatric primary care clinic serving minority families in a pilot study (Mufson et al. 2015). IPT-A has been described as a culturally responsive psychotherapy that may be effective with Latino youth due to its consistency with Latino values of familismo and the primacy of relationships (Mufson et al. 2014). Along with CBT, IPT-A is one of the two well-established psychotherapies for adolescents (David-Ferdon and Kaslow 2008). In addition to psychotherapy, selective serotonin reuptake inhibitor (SSRIs) medications, specifically fluoxetine and escitalopram, are frequently used and FDA approved to treat adolescent depression (Birmaher et al. 2007; Emslie et al. 1997, 2002, 2009; Wagner et al. 2006). This study examined the feasibility and acceptability of a stepped collaborative care model involving clinic social worker delivered IPT-A to an underrepresented minority sample with the option, when needed, to intensify treatment by adding medication delivered by the PCP compared to Enhanced Treatment as Usual (E-TAU).

Method

Participants

Patient Characteristics—Of the 64 adolescents evaluated, 48 (N = 38 female, 79%) were eligible. Mean age of the sample was 15.9 years ($SD = 2.2$), and the majority were Latino (N = 46, 96%) (Table 1). Thirty-three (69%) participants were born in the United States. For those who were born outside of the United States, the majority were born in the Dominican Republic (N = 13 (27%); N = 1 born in Peru, N = 1 born in Puerto Rico) and lived an average of 9.3 years in the United States. Those families who spoke mostly English at home made up 33% (N = 16) of the sample while 48% (N = 23) reported that they spoke mostly Spanish at home and 12.5% (N = 6) reported that Spanish alone was the language of the home (N = 1 spoke Soninke, N = 1 spoke English and Spanish equally, and N = 1 spoke English only).

Parent Characteristics—Thirty parents who were the primary care givers of participants completed satisfaction questionnaires (N = 30 female, all mothers except for one grandmother). Forty-three percent of mothers/grandmothers either completed some college, were college graduates, or had graduate professional training, 36.7% had some high school

education or were high school graduates, and 20% had a below 8th grade education level. The majority were employed either full-time (40%) or part-time (20%), with the rest being either a homemaker (30%) or unemployed/retired (10%). One-third was receiving public assistance, and the majority had a household gross income of less than \$25,000 (76.7%; 13.3% between \$25,000 and \$90,000, and 10% did not know).

Provider Characteristics—Of the seven bilingual and monolingual medical providers who consented to participate (six pediatricians and one nurse practitioner) and who completed satisfaction questionnaires, 6 (86%) were female. Two providers were between the ages of 30–40, three were between the ages of 40–50, and two were age 50 or above. One of the medical providers had less than 5 years of experience, whereas the rest had over 10 years of experience with two of them having over 20 years of experience. All four of the social work clinicians randomized to the SCRIPT-A intervention were female; two were between the ages of 30–40, one between the ages of 40–50, and one was age 50 or above. Three of the four social workers were Latino and bilingual and one was White and bilingual. Two social workers had between 5 and 10 years of experience in practice, one between 10 and 15 years, and one over 20 years of experience.

Procedures

Study procedures were approved by the Institutional Review Board for the institution and affiliated clinics. Adolescents were screened for depression by their PCP as part of routine care using the Columbia Depression Scale (CDS; Shaffer et al. 2000). Pediatricians described the study to adolescents who screened positive for at least mild depression (i.e., CDS score 12 or higher) and, if interested, verbal consent was obtained from both parent and adolescent (youth only if over the age of 18) to be contacted by study staff. Interested families were administered a structured telephone screen that assessed for preliminary inclusion/exclusion criteria. If eligible, they were invited for consent/assent at the pediatric clinic and met with a bilingual independent evaluator (IE) to complete the baseline assessments to confirm eligibility. If eligible, they were randomized to either Enhanced Treatment as Usual (E-TAU) or stepped care IPT-A (SCRIPT-A). Adolescents who did not meet eligibility criteria were referred for mental health treatment if indicated after consultation with their PCP.

In total, 143 adolescents agreed to be contacted, of which 68 were eligible after a phone screen and invited to a consent meeting (Fig. 1). Sixty-four adolescents were evaluated for eligibility at the baseline assessment. Inclusion criteria included: diagnosis of Major Depressive Disorder (MDD), Depressive Disorder, Not Otherwise Specified, (DD-NOS), or Dysthymia according to the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM-IV-TR*; American Psychiatric Association 2000); moderate impairment in functioning (Children's Global Assessment Scale (CGAS) score $\geq$ 65; Shaffer et al. 1983); and moderate depression severity (Children's Depression Rating Scale, Revised (CDRS-R) raw score $\geq$ 38; Poznanski and Mokros 1996). Patients also agreed to refrain from any other psychiatric medication treatment during the study. Exclusion criteria included: history of severe learning disability; diagnosis of obsessive-compulsive, substance use, bipolar, conduct, developmental, posttraumatic stress, or any eating disorder; active suicidal ideation

with intent or plan, and/or requiring immediate hospitalization; current child protective service agency involvement; current engagement in treatment for depression; medical condition that would interfere with treatment; pregnancy; previous demonstrated intolerance to SSRI class of medication; and two failed adequate and documented trials of SSRIs. Psychotic patients and those with attention deficit hyperactivity disorder not already receiving a stable stimulant dose were also excluded.

Randomization

Using a table of computer-generated random numbers, adolescents were randomized to either SCRIPT-A or E-TAU using a 3:2 ratio to maximize the number of adolescents receiving the experimental treatment (SCRIPT-A). Randomization was balanced across the four clinics so no clinic had a disproportionate number of cases in a condition, and the decision regarding eligibility was made blind to treatment randomization. The two social work clinicians at each clinic were randomly assigned as either the E-TAU or SCRIPT-A clinician.

Stepped Care Treatment Model

The SCRIPT-A treatment model was delivered in the pediatric clinic by clinic staff (Fig. 2). Participants randomized to SCRIPT-A received 8 weekly sessions of brief IPT-A in Phase I, followed by either maintenance treatment (if the adolescent responded) or combined IPT-A plus medication (if the adolescent did not respond sufficiently) in Phase II. Eight sessions were selected as the initial dose based upon the pilot study of a brief IPT-A model (Mufson et al. 2015) as well as data from another study showing that adolescents already showed a significant response by week 8 (Mufson et al. 2004b). Response to treatment to determine Phase II assignment was based on the adolescent's level of severity at the end of Phase I as rated by the social work clinician using the Clinical Global Impression Improvement scale (CGI-I; Guy 1976). The assessment of the response to treatment was based on the treating clinician's assessment to reflect real world care in which the clinic social worker and pediatrician would collaborate and synthesize the clinical data to determine the next steps needed to help achieve recovery. If an adolescent scored 1 (very much improved) or 2 (much improved) on the CGI-I, he or she continued in maintenance treatment, which consisted of three more IPT-A sessions delivered over the course of 8 weeks. However, if the adolescent scored three (minimally improved) or higher on the CGI-I, he or she continued weekly IPT-A treatment for 8 weeks with the addition of antidepressant medication provided by the pediatrician. Medication visits with the pediatrician occurred at weeks 1, 2, 4, 6, and 8 in Phase II. Total treatment length for the two phases combined was 16–20 weeks (delays were due to vacation, missed sessions, illness, and/or scheduling difficulties).

Interpersonal Psychotherapy (IPT-A)—IPT-A is a time-limited, manualized treatment for depression targeting interpersonal functioning (Mufson et al. 2004a). The efficacy and effectiveness of IPT-A for reducing adolescents' depressive symptoms have been examined in four randomized controlled clinical trials (Mufson et al. 2004b, 1999; Rosselló and Bernal 1999; Rosselló et al. 2008). Based on the empirical support for treatment efficacy, IPT-A meets the American Psychological Association Division 12 criteria for a “well-established” psychotherapy for depression in youth.

The goal of IPT-A is to help the adolescent develop better ways to communicate and problem-solve within significant relationships by focusing on one or two of four problem areas (role disputes, role transitions, interpersonal deficits, and grief). See Mufson et al. (2004a) for full model description. Brief IPT-A is based on the standard 12 week model found to be effective for treating depressed adolescents in the urban community (Mufson 2010). Mufson et al. (2015) pilot study helped to shape treatment duration and streamline the content for delivery over a shorter duration. The sessions focus on the same content but for fewer sessions, eight in the initial phase and another eight in Phase II if not significantly improved after Phase I. Phase I sessions focus on the initial and middle phase of IPT-A which includes psychoeducation about depression, an abbreviated interpersonal inventory review of significant relationships, and teaching communication and problem-solving skills within the context of the problem formulation. The Phase II sessions continued the work of the middle phase providing the opportunity for ongoing practice of communication and problem-solving skills as well as relapse prevention through the identification of warning signs of depression, and review of skills that were mastered and how they can generalize to future situations.

Enhanced Treatment as Usual (E-TAU)—E-TAU consisted of the care adolescents normally would have received if identified as having depression symptoms by their pediatrician or other health care provider in the pediatric clinic, typically referral to services either within the clinic or at community agencies. After randomization to E-TAU, adolescents were scheduled to meet with the E-TAU social worker to discuss referral options. E-TAU consisted of regular calls by the project coordinator, a clinical psychologist, who would ask about their follow-up with treatment referrals, appointments, and independent evaluator (IE) meetings. Enhancement was to ensure safety and sample maintenance; no psychotherapy was conducted during these calls.

Psychopharmacotherapy—Medication visits with the pediatrician involved psychoeducation about antidepressants, medication adherence checks, side-effect review, and discussion of treatment plan. The child psychiatrist (MR) visited each primary care site to answer any questions, and address concerns or challenges encountered in the pharmacological management of participants. Adolescents who entered Phase II received 20 mg/day of fluoxetine and, if tolerated and clinically indicated (minimal or no improvement), this was increased at 4 weeks to a maximum of 40 mg/day. PCPs were advised to decrease the dose as necessary at any point to address tolerability concerns and were given a medication algorithm as a guideline. If the participant could not tolerate fluoxetine, or if there was a clinical indication to use a different SSRI (e.g., family member success with other SSRI), then it was possible to start with or switch to a different medication (escitalopram, citalopram, or sertraline). All participants (N = 9) were prescribed fluoxetine. In Phase II, for the visits that did not involve the pediatrician, the social worker inquired about any health changes, new or previously unresolved physical symptoms, and/or difficulties with the medication.

Clinician and Pediatrician Training—The social workers were master's-level clinicians who received IPT-A training in a 1-day didactic seminar. Three of the four social workers

had experience providing psychotherapy and one had only engaged in case management practice. They were given a treatment manual to follow, and received weekly group supervision by the Co-PI (LM). All IPT-A sessions were audiotaped and all cases were included in the final study sample. Every session of the first three study cases for each clinician was rated for fidelity by the Co-PI (LM), followed by a random selection of three sessions for each case thereafter. Clinicians began to treat active cases upon completion of the didactic seminar with weekly supervision.

The Co-PI (MR) provided an in-service seminar on prescribing antidepressants to the pediatricians in the primary care clinics. Pediatricians who prescribed medication each received an initial medication consultation as well as ongoing consultation as needed. Treatment competency was based upon completion of didactic training.

Assessments

Subjects' clinical symptoms and functioning were assessed at baseline and weeks 8, 12, and 16 or early termination by independent evaluators who were master's-level clinicians and were kept blind to treatment condition.

Depression Diagnosis—Diagnosis of depression was based on clinical interview by the independent evaluator (IE) and two depression measures: the Children's Depression Rating Scale, Revised (CDRS-R; Poznanski and Mokros 1996) and the Patient Health Questionnaire, 9-item depression module (PHQ-9; Kroenke et al. 2001). The diagnosis was finalized by consensus rating of two clinical psychologists (PYL and LM) along with the IE evaluation.

The CDRS-R is a semi-structured, clinician-administered measure used to assess depression severity. It consists of 17 items rated on a scale of either 1 (less severe) to 5 (more severe) or 1 (less severe) to 7 (more severe) with total scores ranging from 17 to 113. The CDRS-R was administered to both adolescent and parent (when parent participated, the rating was based on the integration of parent and adolescent report). The CDRS-R has good reliability, validity (Poznanski et al. 1984), and good internal consistency ($\alpha = 0.74$). Interrater reliability (intraclass correlation coefficient compared to study Co-PI (LM) as the gold standard) for the present study was excellent, ranging from 0.92 to 0.99.

The PHQ-9 is a self-report questionnaire used to both assess depression severity as well as suggest probability of a depression diagnosis. The nine items are based on *DSM-IV-TR* criteria and ask the individual to rate the duration for which they experienced each symptom. A tenth item rates the level of impairment due to the previous items. Items are scored on a Likert scale of 0 (not at all) to 3 (nearly every day), with total scores ranging from 0 to 27. The PHQ-9 has demonstrated high sensitivity (89.5%) and good specificity (78.8%) in detecting depression in adolescents in a primary care sample (Richardson et al. 2010).

Primary Outcomes

Acceptability, feasibility, and fidelity are three distinct implementation outcomes that were assessed (Emslie et al. 2009). Acceptability is defined as whether a specific treatment is palatable to the stakeholders. Feasibility is defined as the extent to which a new treatment

can be successfully carried out within a given setting, and fidelity refers to the degree to which it is implemented as prescribed in a protocol or as intended (Proctor et al. 2011).

Acceptability and Feasibility of SCRIPT-A Treatment Model

Patient Perspective: Assessment of acceptability of the SCRIPT-A treatment model by the adolescents and parents was evaluated by: session attendance; acceptance of medication recommendation; medication adherence via pill count; and treatment satisfaction. Feasibility was measured by: agreement with randomization; study retention; and participation in treatment sessions. Adolescents and their parent completed the Client Satisfaction Questionnaire (CSQ-8; Larsen et al. 1979) self-report adapted for this study. Internal consistency for the present study at week 16 was high for participants ($\alpha = 0.89$) and moderate for parents ($\alpha = 0.64$).

Provider Perspective: Acceptability of the SCRIPT-A treatment model by the social work clinicians and medical providers was assessed using a clinician treatment satisfaction questionnaire adapted from the CSQ-8. The clinician treatment satisfaction questionnaire examined the clinicians' opinions regarding the efficacy and suitability of the treatment protocol for the adolescent. Items were rated on Likert scales with lower numbers indicating dissatisfaction.

Fidelity of SCRIPT-A Treatment Model—Fidelity was rated using IPT-A Consultation Checklists adapted to accommodate Phase II for this study (Mufson et al. 2011). These checklists assess the thoroughness and skill with which the clinician covered the IPT-A techniques. Individual techniques were rated by the supervisor (LM); the therapist was also given an overall rating (1 = poor, 5 = excellent) for each session.

Preliminary Efficacy Outcome Measures

The CDRS-R was used as a depression severity outcome measure and to diagnose depression for study eligibility (see above).

The Clinical Global Impression scale (CGI; Guy 1976) is a 2-item measure that asks the clinician to rate on a scale from 1 to 7 how severely ill is the patient (1 = normal, not ill at all, 7 = among the most extremely ill patients) (CGI-S) and how improved is the patient (1 = very much improved, 7 = very much worse) compared to baseline (CGI-I). The social work clinician and the IE separately completed the CGI scale at each assessment. The social work clinician's rating was used to determine the IPT-A participant's response to treatment after the initial 8 weeks of brief IPT-A, while the IE's ratings were used in the outcome analyses. At week 8, the IE and social worker CGI-I rating had an intra-class correlation coefficient of .88. Interrater reliability (Cohen's Kappa) for the IE ratings in the present study was .72.

The Children's Global Assessment Scale (CGAS; Shaffer et al. 1983) rates a child's overall level of functioning (range 1–100), with lower scores indicating greater impairment. Interrater reliability (intraclass correlation coefficient) for the present study was .82.

The Social Adjustment Scale-Self Report (SAS-SR; Weissman and Bothwell 1976) is a 23-item self-report questionnaire that assesses four social domains (school, friends, family, and

dating) and has been used successfully with adolescents (Larsen et al. 1979; Mufson et al. 2004b). Each item is rated on a 5-point Likert scale, with higher scores indicating worse functioning. Internal consistency for the present study was high ($\alpha = 0.80$ at baseline and 0.85 at week 16).

Data Analysis

Descriptive means and proportions were used to summarize acceptability, feasibility, and fidelity measures.

Baseline comparisons between patients randomized to treatment conditions were examined using two sample *t* tests for continuous data, and Chi square or Fisher's Exact tests for categorical data. To examine the preliminary efficacy of SCRIPT-A model of care as compared to E-TAU, a longitudinal mixed effect model was used for outcome scores (CDRS-R, CGI-S, CGI-I, CGAS, and SAS-SR overall) at all follow-up time points (8, 12, and 16 weeks or early termination) with treatment group, categorical time, treatment group $\times$ time, an indicator for the four sites, and scores at baseline as predictors (except for CGI-I, for which there is no baseline measurement). Treatment effect contrasts at 16 weeks were the primary outcome. The longitudinal mixed effect model utilizes all available data and handles missing data via a missing-at-random assumption. Cohen's *d* effect sizes were calculated as the difference in adjusted means at week 16, divided by the SD of the test at baseline (except for CGI-I, for which the SD at week 8 was used, as there is no baseline measurement). In order to confirm that changes in outcome between the two groups were due to differences in the treatment models and not measurement error, Reliable Change Indices (RCI) of baseline to Week 16 change in CDRS-R, CGAS, and CGI-S, were calculated for each subject (Jacobson and Truax 1991). RCIs greater than 1.96 were considered as representing reliable change, not attributable to measurement error. All analyses were performed using SAS version 9.3.

Results

Enhanced Treatment as Usual

Only 7 out of 19 participants in E-TAU received mental health services; 4 of the 19 did not attend follow-up assessments and we have reports from clinics of their failure to attend the scheduled appointments. Thus, the remaining adolescents ($N = 12$) did not receive any further treatment. Treatment received included treatment by: a psychologist in the pediatric clinic ($N = 1$) and in a hospital outpatient mental health clinic ($N = 1$); a psychiatric nurse practitioner in the pediatric clinic ($N = 3$); and staff at a community mental health clinic ($N = 2$).

Feasibility of SCRIPT-A Treatment Model

Figure 1 presents the Consolidated Standards of Reporting Trials (CONSORT) diagram. Of the 68 eligible for consent, four did not sign consent (two refused to sign at consent meeting; one was uncomfortable with audiotaping, and one declined). 48 out of 64 adolescents evaluated were eligible. All participants who signed consent forms agreed to be randomized.

Of the 29 participants randomized to SCRIPT-A, 25 (86.2%) completed the trial (one terminated after one session, two discontinued the intervention after having completed 4–6 sessions, and one was removed from the study due to a worsening of symptoms requiring hospitalization). Additionally, 15 participants significantly improved following the initial 8-weeks of IPT-A (i.e., treatment responders at Phase I completion based on a clinician-rated CGI-I score of 1 or 2) and were allocated to maintenance treatment (51.7%), whereas 11 (37.9%) were allocated to IPT-A plus medication combination for 8 weeks due to a clinician-rated CGI-I score of three or greater. Of the 11 participants who were recommended for combined treatment of IPT-A with medication, 9 (81.8%) agreed. In E-TAU, 15 of the 19 (78.9%) participants completed all four assessment visits (four discontinued the protocol and were judged study noncompleters).

We examined session attendance as a marker of feasibility of the SCRIPT-A model. Phase I mean attendance rate within the SCRIPT-A group for all participants was 6.9 ($SD = 2.10$) out of 8 sessions (84.5%, range 1–9). Adolescents who received maintenance treatment of three additional sessions ($N = 13$) in Phase II attended an average of 2.69 sessions ($SD = 0.72$, 92.3%, range 1–4), for a total average of 10.3 ($SD = 1.43$) out of 11 (93%, range 7–12) SCRIPT-A sessions. Two adolescents who attended infrequently in Phase I but still qualified for maintenance treatment were offered eight additional sessions in Phase II and thus attended more than three sessions ($M = 5$, $SD = 2$, 62.5%, range 3–7), for a total average of 7.5 ($SD = 1.5$) out of 16 (46.9%, range 6–9) SCRIPT-A sessions. Adolescents ($N = 9$) who accepted the combination treatment arm (IPT-A plus medication) attended an average of 5.89 ($SD = 1.73$) out of 8 (73.6%, range 3–8) additional IPT-A sessions, and an average of 4.78 ($SD = 0.79$) out of 5 (95.6%, range 3–6) medication management treatment sessions in Phase II. The two adolescents who did not accept medication treatment but continued with weekly IPT-A sessions in Phase II attended an average of 4 ($SD = 1.0$) out of 8 psychotherapy sessions (50%, range 3–5).

Three serious adverse events occurred in SCRIPT-A group during the trial, leading to the removal of one participant from the study while two remained in the protocol. One participant's family was visited by child protective services during Phase I due to poor school attendance; however, by week 8 she showed significant improvement and progressed to the maintenance phase of treatment. Two participants in the Phase II combined arm reported a suicide attempt. Both teens reported at risk behavior during Phase I including endorsement of cutting behavior and passive suicidal ideation. One adolescent revealed her aborted suicide attempt during her week 12 evaluation a month after it occurred, and as she denied current suicidal behavior she remained in the study. The second adolescent was removed from the study during the second phase and hospitalized for continued worsening of suicidal symptoms. In comparison, the majority of the E-TAU participants did not receive ongoing treatment and had less frequent contact with their providers; therefore, we suspect that we did not identify possible adverse events that occurred in this condition.

Acceptability of SCRIPT-A Treatment Model

A majority of the parents (IPT-A: $N = 23$, 86.9%; E-TAU: $N = 7$, 100%) and adolescents (IPT-A: $N = 27$, 88.9%; E-TAU: $N = 14$, 85.7%) in both treatment conditions who completed

the CSQ-8 reported being “mostly satisfied” to “very satisfied” with treatment. Also, a majority of these parents (IPT-A = 91.3%; E-TAU = 100%) and adolescents (IPT-A = 81.5%; E-TAU = 85.7%) in both treatment conditions reported that they received between “good” and “excellent” care.

Acceptability of the treatment model was overall positive as reported by the social work clinicians (N = 4) and medical providers (N = 7) on the provider satisfaction questionnaire that was based on the CSQ-8. One hundred percent of the social workers and 86% of the medical providers reported that the quality of care provided by the treatment model was “good” or “excellent.” Most of the social workers (89%) and medical providers (86%) felt that they were either “generally” or “definitively” able to provide the right kind of care to the adolescent. All the social workers and 80% of the medical providers indicated they felt either “generally” or “definitively” adequately trained and supported to deliver this treatment model. Similarly, 100% of the social work clinicians and 86% of the medical providers indicated that they would either “generally” or “definitively” treat other depressed adolescents with this model of care. Qualitatively, the medical providers reported the need for improved communication with social work clinicians and back-up support with a consulting psychiatrist to implement the model successfully. According to the social work clinicians, challenges included limited flexibility due to use of a treatment manual with guidelines for maintaining a specific treatment focus, difficulty scheduling a patient with both providers, and accommodating missed sessions in a busy medical clinic.

Patient acceptability of the SCRIPT-A model was evidenced by: (1) 83.8% medication adherence according to pill count; (2) 100% of adolescents referred to SCRIPT-A initiating treatment; and (3) 25 of 29 (86%) completing treatment in the SCRIPT-A arm.

Treatment Fidelity

To assess fidelity to treatment model, three psychotherapy sessions were rated for each case for 93% (N = 27 of 29) of participants in the SCRIPT-A arm. Approximately 90% of the rated therapy sessions were rated on a Likert scale as demonstrating satisfactory or better IPT-A competence (76.2% satisfactory, 12.3% good, 2.3% excellent) based on adherence ratings on use of required techniques. It is important to note that many of the SCRIPT-A participants (N = 12) were treated by the social worker who had no prior experience conducting psychotherapy; therefore, she was learning the basics of psychotherapy at the same time as learning IPT-A principles and techniques. Thus, it is encouraging that she could achieve satisfactory or better adherence with limited prior psychotherapy experience. It confirms what has already been demonstrated, that community clinicians can acquire IPT-A skills in a short period of time with streamlined training requirements (Mufson et al. 2004a).

Treatment Outcomes

There were no significant differences between groups on study variables at baseline (Table 1). See Table 2 for a between treatment comparison of outcomes at week 16 controlling for baseline levels of clinical severity and clinic in which treated. No treatment group differences were significant for the primary outcomes; however, this study was not powered to find statistically significant differences between treatments. There were moderate to large

effect size differences between SCRIPT-A and E-TAU suggesting greater reduction of depression symptoms (CDRS-R Cohen's $d = 0.35$) and improvement in overall illness severity (CGI-S Cohen's $d = 0.84$) for SCRIPT-A as compared to E-TAU (Fig. 3). Adolescents in both conditions showed improvement in their depressive symptoms and overall and social functioning. A major proportion of adolescents in both conditions reported clinically significant change on these measures (CDRS-R: TAU-E 86% vs. SCRIPT-A 81%; CGAS: TAU-E 64% vs. SCRIPT-A 70%; CGI-S: TAU-E 71 vs. 78%). There were no significant differences between treatment conditions in the proportion of adolescents who experienced reliable change on these primary outcomes (decrease for CDRS-R and CGI-S, increase for CGAS) by Week 16.

Discussion

The results suggest that the stepped care model of IPT-A (SCRIPT-A) is an acceptable and feasible treatment model for adolescent depression in the primary care setting serving underrepresented minority youth and families. The findings support the ability to successfully engage this population in treatment in the pediatric setting when other studies suggest that Latino youth are less likely to access and receive care (Bear et al. 2014; Guo et al. 2014; Kim et al. 2015). Successful implementation of the SCRIPT-A model suggests its potential to improve access to effective treatments for depressed minority adolescents utilizing existing clinical staff of the primary care clinics.

Adolescents demonstrated good attendance at sessions as well as adherence to the treatment, including adherence with medication when recommended. Importantly, 15 out of 29 (51.7%) of adolescents benefited from 8 weeks of brief IPT-A alone without requiring the combined treatment. Thus at least half of the depressed teens responded to 8 weeks of psychotherapy alone and did not need medication nor referral to a mental health specialized care setting. While anecdotally many adolescents and their families expressed initial concerns during the consenting process about the possible need for medication, nine of the eleven referred for combined treatment accepted the treatment recommendation. Once agreeing to medication, these adolescents demonstrated excellent adherence to the medication regimen according to pill counts and session attendance. Moreover, adolescents, parents, and providers reported satisfaction with the treatment model and delivery in the primary care setting.

The results also showed medium to large effect sizes for SCRIPT-A model of treatment suggesting greater reduction of depression symptoms and improvement in overall illness severity as compared to E-TAU. E-TAU adolescents also evidenced a reduction in symptoms and improvement in functioning (Table 2). When comparing the week 16 outcomes of those E-TAU adolescents ($N = 7$) who received treatment to those who didn't ($N = 7$), there was a significantly better outcome for those who received treatment on the CDRS-R, CGAS, and CGI ($p < .05$ for each of them). Nonetheless, the problem of access to treatment is evident in the E-TAU condition; despite regular calls to help connect these youths to services, only 7 of the 19 (37%) initiated and received treatment. The scores for those who didn't receive treatment remained above the clinical cutoffs on all the measures, although they were reduced from baseline. However, many of them indicated on the satisfaction questionnaire that the baseline and follow-up assessments and phone calls to inquire as to whether they

had engaged in care were very helpful. Although actual psychotherapy or medication was limited for most of the adolescents in E-TAU, the warm attention and psychoeducation provided initially by the assessment process and followed by the phone calls may have instilled a sense of hope and connectedness, consistent with other studies (Luxton et al. 2013). It is necessary to consider whether an even less intense step of evaluation and psychoeducation may be sufficient for a subset of youth with milder forms of depression and strong family support.

The finding that 51.7% improved sufficiently in the first 8 weeks of IPT-A alone suggests that providing an earlier, less intensive treatment step in the care model may be cost-effective for pediatric clinics. Adolescents with mild to moderate symptoms of depression may benefit from less intensive services such as an assessment and provision of psychoeducation for the family and continued monitoring. Thus, screening in primary care may still be beneficial even if treatment is not readily available if the providers can provide this initial step of assessment and psychoeducation which proved to be helpful for many of these adolescents and parents. Adolescents who still report significant symptoms after a month could be referred for brief psychotherapy (SCRIPT-A Phase I), and then if still symptomatic at 8 weeks, could receive combined treatment (SCRIPT-A Phase II). The most intensive treatment (medication and psychotherapy) would be reserved for those who are still significantly symptomatic after the first two interventions. Research is needed to further develop and implement a “warm assessment and psychoeducation” step that might be sufficient for those adolescents with a mild and transient form of depression.

The study’s strength is its sustainability in that the model did not require the addition of any new staff to the primary care treatment team. Although there is some initial need for better coordination of care among the team members, the result is less burden later in trying to follow patients and conduct crisis management. In addition, the model promotes shared communication among staff, ability to provide medication treatment in-house, access to care in a less stigmatized setting leading to greater compliance and scheduling flexibility.

There are several study limitations. Our sample of depressed youth had co-occurring anxiety disorders and none reported ADHD on the Youth Self-Report such that future studies should examine specifically the impact of the model on common comorbid conditions. We also had fewer adolescents than expected who required the Phase II combined treatment arm, limiting our ability to have a larger sample to assess feasibility and acceptability specifically of the combined treatment. Moreover, the combined arm was only 8 weeks long, precluding us from following adolescents on a complete therapeutic dose of medication combined with IPT-A for sufficient time to get an accurate assessment of the effectiveness of this approach. However, the primary aim of this study was feasibility and acceptability of the SCRIPT-A model while treatment effectiveness was an exploratory aim. Regarding medication adherence, we relied on pill count as opposed to direct observation and/or monitoring serum levels as our goal was to model usual care as best as possible, and in regular practice pediatricians will not utilize research monitoring devices and/or blood levels. Given the small number in the combined treatment arm, we also were only able to implement the medication consultations with a small number of pediatricians and thus not able to assess pediatricians’ feasibility of prescribing antidepressants with consultation from a child

psychiatrist. In addition, the Phase II treatment decision was based upon the treating clinician's CGI rating rather than the IE in the hopes of reflecting real world practice in which pediatrician and clinician would collaborate to decide next steps. However, clinician rating was not as objective as one made by an IE but their ratings showed high inter-rater reliability. Lastly, the study was not powered to detect significant differences between E-TAU and SCRIPT-A.

Stepped collaborative care models of depression treatment in primary care offer the ability to provide care to depressed adolescents in a more accessible and less stigmatizing setting than specialized mental health clinics. SCRIPT-A appears feasible, acceptable and potentially beneficial to this sample of urban, mostly Latino adolescents who typically experience significant barriers to receiving care. This is significant given the previous findings of Latino youth's limited access to effective care and their decreased willingness to engage in services (Bear et al. 2014; Guo et al. 2014; Kim et al. 2015). This study provides further evidence that SCRIPT-A is a culturally acceptable model of care to be delivered in the primary care setting for this at-risk underserved population. Most of the participants in this study preferred to start with psychotherapy, consistent with other studies (Asarnow et al. 2005, 2015; Richardson et al. 2014); however, more research is needed on treatment preferences among different ethnic groups in the primary care setting. Importantly, the SCRIPT-A model was successfully implemented by clinicians, some of whom had minimal experience in conducting psychotherapy, with a streamlined training and supervision commitment that can be accommodated in a community setting. A further strength and innovation of this study is that the psychotherapy was provided by existing clinical staff compared to other studies who placed care managers into settings as additional staff to the extant clinic personnel. The existing staff could incorporate this care provision into their job duties thereby reducing potential additional staff costs to provide mental health services in the primary care setting. There is a pressing need to better understand the integration of stepped collaborative care models for depression treatment in pediatric primary care as well as the need to provide access especially for minority youth populations who suffer the most from lack of access. Future studies will further assess the effectiveness of the SCRIPT-A model of care as well as the ability to implement the model in more diverse pediatric primary care settings serving minority youth.

Acknowledgments

We would like to thank the pediatricians, social workers, and staff at the New York Presbyterian Hospital Ambulatory Pediatric Clinics for their commitment to making this study a success, Drs. Roberto Lewis-Fernández and Mark Olfson (from the Department of Psychiatry, Columbia University College of Physicians and Surgeons and New York State Psychiatric Institute, New York, NY, USA) for their valuable insights in designing and executing the study as well as their feedback on the manuscript, and our clinical evaluators and volunteer staff who also contributed to the successful completion of the project.

Funding This study was funded by the National Institute of Mental Health Grant # R34 MH091320.

References

- Alegria M, Vallas M, Pumariega AJ. Racial and ethnic disparities in pediatric mental health. *Child and Adolescent Psychiatric Clinics of North America*. 2010; 19(4):759–774. <https://doi.org/10.1016/j.chc.2010.07.001>. [PubMed: 21056345]

- American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4. Washington, DC: American Psychiatric Association; 2000. text rev
- Angstman KB, Phelan S, Myszkowski MR, Schak KM, DeJesus RS, Lineberry TW, van Ryn M. Minority primary care patients with depression: Outcome disparities improve with collaborative care management. *Medical Care*. 2015; 53(1):32–37. <https://doi.org/10.1097/MLR.0000000000000280>. [PubMed: 25464162]
- Asarnow JR, Jaycox LH, Duan N, LaBorde AP, Rea MM, Murray P, ... Wells KB. Effectiveness of a quality improvement intervention for adolescent depression in primary care clinics: A randomized controlled trial. *JAMA: The Journal of the American Medical Association*. 2005; 293(3):311–319. [PubMed: 15657324]
- Asarnow JR, Rozenman M, Wiblin J, Zeltzer L. Integrated medical-behavioral care compared with usual primary care for child and adolescent behavioral health: A meta-analysis. *JAMA Pediatrics*. 2015; 169(10):929–937. <https://doi.org/10.1001/jamapediatrics.2015.1141>. [PubMed: 26259143]
- Bear L, Finer R, Guo S, Lau AS. Building the gateway to success: An appraisal of progress in reaching underserved families and reducing racial disparities in school-based mental health. *Psychological Services*. 2014; 11(4):388–397. <https://doi.org/10.1037/a0037969>. [PubMed: 25383994]
- Birmaher B, Brent D, Bernet W, Bulkstein O, Walter H, ... Medicus J. AACAP Work Group on Quality Issues. Practice parameter for the assessment and treatment of children and adolescents with depressive disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2007; 46(11):1503–1526. [PubMed: 18049300]
- Bower P, Gilbody S. Stepped care in psychological therapies: Access, effectiveness and efficiency. Narrative literature review. *The British Journal of Psychiatry*. 2005; 186:11–17. [PubMed: 15630118]
- Brown JD, Wissow LS, Zachary C, Cook BL. Receiving advice about child mental health from a primary care provider: African American and Hispanic parent attitudes. *Medical Care*. 2007; 45(11):1076–1082. <https://doi.org/10.1097/MLR.0b013e31812da7fd>. [PubMed: 18049348]
- Campo JV, Shafer S, Strohm J, Lucas A, Cassesse CG, Shaeffer D, Altman H. Pediatric behavioral health in primary care: A collaborative approach. *Journal of the American Psychiatric Nurses Association*. 2005; 11(5):276–282. <https://doi.org/10.1177/1078390305282404>.
- Cauce AM, Domenech-Rodríguez M, Paradise M, Cochran BN, Shea JM, Srebnik D, Baydar N. Cultural and contextual influences in mental health help seeking: A focus on ethnic minority youth. *Journal of Consulting and Clinical Psychology*. 2002; 70(1):44–55. [PubMed: 11860055]
- Clarke G, Debar L, Lynch F, Powell J, Gale J, O'Connor E, ... Hertert S. A randomized effectiveness trial of brief cognitive-behavioral therapy for depressed adolescents receiving antidepressant medication. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2005; 44(9): 888–898. [PubMed: 16113617]
- Cooper LA, Gonzales JJ, Gallo JJ, Rost KM, Meredith LS, Rubenstein LV, ... Ford DE. The acceptability of treatment for depression among African-American, Hispanic, and white primary care patients. *Medical Care*. 2003; 41(4):479–489. [PubMed: 12665712]
- David-Ferdon C, Kaslow NJ. Evidence-based psychosocial treatments for child and adolescent depression. *Journal of Clinical Child & Adolescent Psychology*. 2008; 37(1):62–104. <https://doi.org/10.1080/15374410701817865>. [PubMed: 18444054]
- Davis TD, Deen T, Bryant-Bedell K, Tate V, Fortney J. Does minority racial-ethnic status moderate outcomes of collaborative care for depression? *Psychiatric Services*. 2011; 62(11):1282–1288. https://doi.org/10.1176/ps.62.11.pss6211_1282. [PubMed: 22211206]
- Dwight-Johnson M, Ell K, Lee PJ. Can collaborative care address the needs of low-income Latinas with comorbid depression and cancer? Results from a randomized pilot study. *Psychosomatics*. 2005; 46(3):224–232. [PubMed: 15883143]
- Emslie GJ, Heiligenstein JH, Wagner KD, Hoog SL, Ernest DE, Brown E, ... Jacobson JG. Fluoxetine for acute treatment of depression in children and adolescents: A placebo-controlled, randomized clinical trial. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2002; 41(10): 1205–1215. [PubMed: 12364842]

- Emslie GJ, Rush AJ, Weinberg WA, Kowatch RA, Hughes CW, Carmody T, Rintelmann J. A double-blind, randomized, placebo-controlled trial of fluoxetine in children and adolescents with depression. *Archives of General Psychiatry*. 1997; 54(11):1031–1037. [PubMed: 9366660]
- Emslie GJ, Ventura D, Korotzer A, Tourkodimitris S. Escitalopram in the treatment of adolescent depression: A randomized placebo-controlled multisite trial. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2009; 48(7):721–729. <https://doi.org/10.1097/CHI.0b013e3181a2b304>. [PubMed: 19465881]
- Garcia CM, Duckett LJ. No te entiendo y tú no me entiendes: Language barriers among immigrant Latino adolescents seeking health care. *Journal of Cultural Diversity*. 2009; 16(3):120–126. [PubMed: 19824291]
- Gilbody S, Bower P, Fletcher J, Richards D, Sutton AJ. Collaborative care for depression: A cumulative meta-analysis and review of longer-term outcomes. *Archives of Internal Medicine*. 2006; 166(21):2314–2321. [PubMed: 17130383]
- Gilmer TP, Walker C, Johnson ED, Philis-Tsimikas A, Unützer J. Improving treatment of depression among Latinos with diabetes using Project Dulce and IMPACT. *Diabetes care*. 2008; 31(7):1324–1326. <https://doi.org/10.2337/dc08-0307>. [PubMed: 18356401]
- Guo S, Kataoka SH, Bear L, Lau AS. Differences in school-based referrals for mental health care: Understanding racial/ethnic disparities between Asian American and Latino youth. *School Mental Health*. 2014; 6(1):27–39.
- Guy, W. ECDEU assessment manual for psychopharmacology-revised. Rockville: U.S. Dept. of Health, Education, and Welfare Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute of Mental Health, Psychopharmacology Research Branch, Division of Extramural Research Programs; 1976.
- Heneghan A, Garner AS, Storfer-Isser A, Kortepeter K, Stein RE, McCue Horwitz S. Use of selective serotonin reuptake inhibitors by pediatricians: Comparing attitudes of primary care pediatricians and child adolescent psychiatrists. *Clinical Pediatrics*. 2008; 47(2):148–154. [PubMed: 17873244]
- Hough RL, Hazen AL, Soriano FI, Wood P, McCabe K, Yeh M. Mental health care for Latinos: Mental health services for Latino adolescents with psychiatric disorders. *Psychiatric Services*. 2002; 53(12):1556–1562. <https://doi.org/10.1176/appi.ps.53.12.1556>. [PubMed: 12461215]
- Ishikawa RZ, Cardemil EV, Alegría M, Schuman CC, Joseph RC, Bauer AM. Uptake of depression treatment recommendations among Latino primary care patients. *Psychological Services*. 2014; 11(4):421–432. <https://doi.org/10.1037/a0035716>. [PubMed: 24512538]
- Jacobson NS, Truax P. Clinical significance: a statistical approach to defining to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology*. 1991; 59(1):12–19. [PubMed: 2002127]
- Jonsson U, Bohman H, von Knorring L, Olsson G, Paaren A, von Knorring AL. Mental health outcome of long-term and episodic adolescent depression: 15-year follow-up of a community sample. *Journal of Affective Disorders*. 2011; 130(3):395–404. <https://doi.org/10.1016/j.jad.2010.10.046>. [PubMed: 21112639]
- Katon WJ. The institute of medicine “Chasm” report: Implications for depression collaborative care models. *General Hospital Psychiatry*. 2003; 25(4):222–229. [PubMed: 12850653]
- Katon WJ, Unützer J, Wells K, Jones L. Collaborative depression care: History, evolution and ways to enhance dissemination and sustainability. *General Hospital Psychiatry*. 2010; 32(5):456–464. <https://doi.org/10.1016/j.genhosppsych.2010.04.001>. [PubMed: 20851265]
- Katon WJ, Von Korff M, Lin E, Simon G. Rethinking practitioner roles in chronic illness: The specialist, primary care physician, and the practice nurse. *General Hospital Psychiatry*. 2001; 23(3):138–144. [PubMed: 11427246]
- Kelleher KJ, Stevens J. Evolution of child mental health services in primary care. *Academic Pediatrics*. 2009; 9(1):7–14. <https://doi.org/10.1016/j.acap.2008.11.008>. [PubMed: 19329085]
- Kim RE, Becker KD, Stephan SH, Hakimian S, Apocada D, Escudero PV, Chorpita BF. Connecting students to mental health care: Pilot findings from an engagement program for school nurses. *Advances in School Mental Health Promotion*. 2015; 8(2):87–103. [PubMed: 26251671]
- Kroenke K, Spitzer RL, Williams JB. The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*. 2001; 16(9):606–613. [PubMed: 11556941]

- Larsen DL, Attkisson CC, Hargreaves WA, Nguyen TD. Assessment of client/patient satisfaction: Development of a general scale. *Evaluation and Program Planning*. 1979; 2(3):197–207. [PubMed: 10245370]
- Luxton DD, June JD, Comtois KA. Can postdischarge follow-up contacts prevent suicide and suicidal behavior? A review of the evidence. *Crisis*. 2013; 34(1):32–41. <https://doi.org/10.1027/0227-5910/a000158>. [PubMed: 22846445]
- Merikangas KR, He JP, Burstein M, Swanson SA, Avenevoli S, Cui L, ... Swendsen J. Lifetime prevalence of mental disorders in U.S. adolescents: Results from the National Comorbidity Survey Replication-Adolescent Supplement (NCS-A). *Journal of American Academy of Child and Adolescent Psychiatry*. 2010; 49(10):980–989. <https://doi.org/10.1016/j.jaac.2010.05.017>.
- Merikangas KR, He JP, Burstein M, Swendsen J, Avenevoli S, Case B, ... Olfson M. Service utilization for lifetime mental disorders in U.S. adolescents: Results of the National Comorbidity Survey-Adolescent Supplement (NCS-A). *Journal of American Academy of Child and Adolescent Psychiatry*. 2011; 50(1):32–45. <https://doi.org/10.1016/j.jaac.2010.10.006>.
- Mufson L. Interpersonal psychotherapy for depressed adolescents (IPT-A): Extending the reach from academic to community settings. *Child and Adolescent Mental Health*. 2010; 15(2):66–72. <https://doi.org/10.1111/j.1475-3588.2009.00556.x>.
- Mufson, L., Clougherty, K., Young, J., Verdelli, H., Yanes-Lukin, P. IPT-A consultation checklist—SCIPT-A adaptation. New York: State Psychiatric Institute, Columbia University College of Physicians and Surgeons; 2011.
- Mufson, L., Dorta, KP., Moreau, D., Weissman, MM. Interpersonal psychotherapy for depressed adolescents. 2. New York: Guilford; 2004a.
- Mufson L, Dorta KP, Wickramaratne P, Nomura Y, Olfson M, Weissman MM. A randomized effectiveness trial of interpersonal psychotherapy for depressed adolescents. *Archives of General Psychiatry*. 2004b; 61(6):577–584. [PubMed: 15184237]
- Mufson L, Weissman MM, Moreau D, Garfinkel R. Efficacy of interpersonal psychotherapy for depressed adolescents. *Archives of General Psychiatry*. 1999; 56(6):573–579. [PubMed: 10359475]
- Mufson L, Yanes-Lukin P, Anderson G. A pilot study of Brief IPT-A delivered in primary care. *General Hospital Psychiatry*. 2015; 37(5):481–484. <https://doi.org/10.1016/j.genhosppsych.2015.04.013>. [PubMed: 25997880]
- Mufson L, Yanes-Lukin P, Gunlicks-Stoessel M, Wickramaratne P. Cultural competency and its effect on treatment outcome of IPT-A in school-based health clinics. *American Journal of Psychotherapy*. 2014; 68(4):417–442. [PubMed: 26453345]
- National Institute for Health and Care Excellence. Depression in adults: Recognition and management (NICE Quality Standard No. 90). 2009. Retrieved from <https://www.nice.org/guidance/cg90>
- Potochnick SR, Perreira KM. Depression and anxiety among first-generationimmigrant Latino youth: Key correlates and implications for future research. *The Journal of Nervous and Mental Disease*. 2010; 198(7):470–477. <https://doi.org/10.1097/NMD.0b013e3181e4ce24>. [PubMed: 20611049]
- Poznanski EO, Grossman JA, Buchsbaum Y, Banegas M, Freeman L, Gibbons R. Preliminary studies of the reliability and validity of the children's depression rating scale. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1984; 23(2):191–197.
- Poznanski, EO., Mokros, HB. Children's Depression Rating Scale-Revised (CDRS-R). Los Angeles: WPS; 1996.
- Proctor E, Silmere H, Raghavan R, Hovmand P, Aarons G, Bunger A, ... Hensley M. Outcomes for implementation research: Conceptual distinctions, measurement challenges, and research agenda. *Administration and Policy in Mental Health*. 2011; 38(2):65–76. <https://doi.org/10.1007/s10488-010-0319-7>. [PubMed: 20957426]
- Richards DA, Lovell K, Gilbody S, Gask L, Torgerson D, Barkham M, ... Richardson R. Collaborative care for depression in UK primary care: A randomized controlled trial. *Psychological Medicine*. 2008; 38(2):279–287. [PubMed: 17803837]
- Richardson LP, Ludman E, McCauley E, Lindenbaum J, Larison C, Zhou C, ... Katon W. Collaborative care for adolescents with depression in primary care: A randomized clinical trial. *JAMA*. 2014; 312(8):809–816. <https://doi.org/10.1001/jama.2014.9259>. [PubMed: 25157724]

- Richardson LP, McCauley E, Grossman DC, McCarty CA, Richards J, Russo JE, ... Katon W. Evaluation of the Patient Health Questionnaire (PHQ-9) for detecting major depression among adolescents. *Pediatrics*. 2010; 126(6):1117–1123. <https://doi.org/10.1542/peds.2010-0852>. [PubMed: 21041282]
- Richardson LP, McCauley E, Katon W. Collaborative care for adolescent depression: A pilot study. *General Hospital Psychiatry*. 2009; 31(1):36–45. <https://doi.org/10.1016/j.genhosppsych.2008.09.019>. [PubMed: 19134509]
- Rosselló J, Bernal G. The efficacy of cognitive-behavioral and interpersonal treatments for depression in Puerto Rican adolescents. *Journal of Consulting and Clinical Psychology*. 1999; 67(5):734–745. [PubMed: 10535240]
- Rosselló J, Bernal G, Rivera-Medina C. Individual and group CBT and IPT for Puerto Rican adolescents with depressive symptoms. *Cultural Diversity & Ethnic Minority Psychology*. 2008; 14(3):234–245. <https://doi.org/10.1037/1099-9809.14.3.234>. [PubMed: 18624588]
- Rushton J, Bruckman D, Kelleher K. Primary care referral of children with psychosocial problems. *Archives of Pediatrics & Adolescent Medicine*. 2002; 156(6):592–598. [PubMed: 12038893]
- Sayal K. Annotation: Pathways to care for children with mental health problems. *Journal of Child Psychology and Psychiatry*. 2006; 47(7):649–659. [PubMed: 16790000]
- Shaffer, D., Fisher, F., Lucas, CP., Dulcan, MK., Schwab-Stone, ME. CDS (Columbia Depression scale). 2000.
- Shaffer D, Gould MS, Brasic J, Ambrosini P, Fisher P, Bird H, Aluwahlia S. A children's global assessment scale (CGAS). *Archives of General Psychiatry*. 1983; 40(11):1228–1231. [PubMed: 6639293]
- Thapar A, Collishaw S, Pine DS, Thapar AK. Depression in adolescence. *Lancet*. 2012; 379(9820):1056–1067. [https://doi.org/10.1016/S0140-6736\(11\)60871-4](https://doi.org/10.1016/S0140-6736(11)60871-4). [PubMed: 22305766]
- Thota AB, Sipe TA, Byard GJ, Zometa CS, Hahn RA, McKnight-Eily LR. ... Community Preventive Services Task Force. Collaborative care to improve the management of depressive disorders: A community guide systematic review and meta-analysis. *American Journal of Preventive Medicine*. 2012; 42(5):525–538. <https://doi.org/10.1016/j.amepre.2012.01.019>. [PubMed: 22516495]
- US Preventive Task Force. Screening and treatment for major depressive disorder in children and adolescents: US Preventive Services Task Force recommendation statement. *Pediatrics*. 2009; 123(4):1223–1228. <https://doi.org/10.1542/peds.2008-2381>. [PubMed: 19336383]
- Van Voorhees BW, Fogel J, Reinecke MA, Gladstone T, Stuart S, Gollan J, ... Bell C. Randomized clinical trial of an internet-based depression prevention program for adolescents (Project CATCH-IT) in primary care: 12 week outcomes. *Journal of Developmental and Behavioral Pediatrics*. 2009; 30(1):23–37. <https://doi.org/10.1097/DBP.0b013e3181966c2a>. [PubMed: 19194326]
- van't Veer-Tazelaar PJ, van Marwijk HW, van Oppen P, van Hout HP, van der Horst HE, Cuijpers P, ... Beekman AT. Stepped-care prevention of anxiety and depression in late life: A randomized controlled trial. *Archives of General Psychiatry*. 2009; 66(3):297–304. <https://doi.org/10.1001/archgenpsychiatry.2008.555>. [PubMed: 19255379]
- Wagner KD, Jonas J, Findling RL, Ventura D, Saikali K. A double-blind, randomized, placebo-controlled trial of escitalopram in the treatment of pediatric depression. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2006; 45(3):280–288. [PubMed: 16540812]
- Weersing VR, Brent DA, Rozenman MS, Gonzalez A, Jeffreys M, Dickerson JF, ... Iyengar S. Brief behavioral therapy for pediatric anxiety and depression in primary care: A randomized clinical trial. *JAMA Psychiatry*. 2017; 74(6):571–578. <https://doi.org/10.1001/jamapsychiatry.2017.0429>. [PubMed: 28423145]
- Weersing VR, Gonzalez A, Campo JV, Lucas AN. Brief behavioral therapy for pediatric anxiety and depression: Piloting an integrated treatment approach. *Cognitive and Behavioral Practice*. 2008; 15(2):126–139. <https://doi.org/10.1016/j.cbpra.2007.10.001>.
- Weissman MM, Bothwell S. Assessment of social adjustment by patient self-report. *Archives of General Psychiatry*. 1976; 33(9):1111–1115. [PubMed: 962494]
- Williams DR, González HM, Neighbors H, Nesse R, Abelson JM, Sweetman J, Jackson JS. Prevalence and distribution of major depressive disorder in African Americans, Caribbean blacks, and non-

Hispanic whites: Results from the National Survey of American Life. *Archives of General Psychiatry*. 2007; 64(3):305–315. [PubMed: 17339519]

Yeh M, McCabe K, Hough RL, Dupuis D, Hazen A. Racial/ethnic differences in parental endorsement of barriers to mental health services for youth. *Mental Health Services Research*. 2003; 5(2):65–77. [PubMed: 12801070]

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Fig. 1.

Consort diagram for study. Note: *CDS* Columbia Depression Scale, *SCIPT-A* Stepped Care Interpersonal Psychotherapy for Adolescents, *IPT-A* Interpersonal Psychotherapy for Adolescents, *E-TAU* Enhanced Treatment as Usual, *ACS* Administration for Children's Services, *PTSD* Posttraumatic Stress Disorder

Fig. 2.

Study design. Note: *SCRIPT-A* Stepped Care Interpersonal Psychotherapy for Adolescents, *IPT-A* Interpersonal Psychotherapy for Adolescents, *E-TAU* Enhanced Treatment as Usual, *CGI-I* Clinical Global Impression-Improvement

Fig. 3. Mean CGI-S Score across treatment groups. Fitted means plus/minus 95% confidence interval from longitudinal mixed effects model adjusting for clinic. Note: *CGI-S* Clinical Global Impression-Severity, *SCRIPT-A* Stepped Care Interpersonal Psychotherapy for Adolescents, *E-TAU* Enhanced Treatment as Usual

Table 1

Patient demographic and clinical characteristics at baseline

Characteristic	SCRIPT-A (N = 29)	E-TAU (N = 19)	<i>p</i> value
Age (mean, <i>SD</i>)	15.6 (1.9)	16.5 (2.5)	0.16
Female gender, N (%)	24 (82.8)	14 (73.7)	0.49
Ethnicity			1.00
Hispanic, N (%)	28 (96.5)	18 (94.7)	
African American, N (%)	1 (3.5)	1 (5.3)	
Single-parent home, N (%)	19 (65.5)	11 (58.9)	0.76
Current suicidal ideation, N (%)	5 (17.2)	3 (15.8)	1.00
History of suicidal attempt-lifetime, N (%)	1 (3.5)	1 (5.3)	1.00
NSSI-lifetime, N (%)	4 (13.8)	2 (10.5)	1.00
NSSI-past month, N (%)	1 (3.5)	2 (10.5)	0.55
Diagnoses			1.00
MDD, N (%)	20 (68.9)	13 (68.4)	
DD-NOS, N (%)	9 (31.0)	6 (31.6)	
Previous treatment, N (%)	7 (26.9)	2 (13.3)	0.44
CGI-S	4.00 (0.65)	4.05 (0.85)	0.80
CGAS	55.31 (4.55)	56.16 (6.53)	0.59
SAS-SR overall	2.84 (0.54)	2.81 (0.60)	0.86
CDRS-R	50.69 (8.55)	52.53 (10.72)	0.51
PHQ-9	14.79 (5.76)	14.42 (6.45)	0.84

SCRIPT-A Stepped Care Interpersonal Psychotherapy for Adolescents, *E-TAU* Enhanced Treatment as Usual, *NSSI* Non-Suicidal Self-Injury, *MDD* Major Depressive Disorder, *DD-NOS* Depressive Disorder-not otherwise specified, *CGI-S* Clinical Global Impression-Severity, *CGAS* Children's Global Assessment Scale, *SAS-SR* Social Adjustment Scale-Self Report, *CDRS-R* Children's Depression Rating Scale-Revised, *PHQ-9* Patient Health Questionnaire-9

Table 2

Clinical outcomes at week 16

Outcome	SCRIPT-A (N = 27)		E-TAU (N = 14)		Treatment effect	
	Mean ^a	SE	Mean ^a	SE	p value	Cohen's d
CDRS-R	30.02	2.42	33.41	3.39	0.40	0.35
CGI-I	1.96	0.22	2.35	0.30	0.28	0.41
CGI-S	2.26	0.21	2.87	0.30	0.09	0.84
CGAS	69.93	1.84	66.88	2.58	0.32	- 0.63
SAS-SR OVERALL	2.51	0.10	2.56	0.14	0.72	0.10

SCRIPT-A Stepped Care Interpersonal Psychotherapy for Adolescents, E-TAU/Enhanced Treatment as Usual, CDRS-R Children's Depression Rating Scale-Revised, CGI-I/Clinical Global Impression-Improvement, CGI-S/Clinical Global Impression-Severity, CGAS Children's Global Assessment Scale, SAS-SR Social Adjustment Scale-Self-Report

^a Adjusted mean outcome at week 16 from longitudinal mixed effect model controlling for baseline outcome and clinic