Telephone Psychotherapy and Telephone Care Management for Primary Care Patients Starting Antidepressant Treatment
A Randomized Controlled Trial

Gregory E. Simon, MD, MPH
Evette J. Ludman, PhD
Steve Tutty, MA
Belinda Operskalski, MPH
Michael Von Korff, ScD

ABUNDANT EVIDENCE SUPPORTS THE EF-FICACIOUSNESS OF ANTIDEPRESSANT PHARMACOTHERAPY AND STRUCTURED PSYCHOTHERAPY FOR TREATMENT OF DEPRESSION.1-3 Unfortunately, the reach and actual effectiveness of either treatment remain poor. Of patients who begin taking antidepressants, 40% discontinue within a month, and only 25% receive even minimal levels of follow-up.4,5 Only one third of patients with depressive disorders receive any psychotherapy.6 Of those beginning psychotherapy, 25% attend only 1 session and only half attend 4 or more sessions.7 At the population level, only 25% to 30% of those with depressive disorders receive an effective level of either treatment.8-9

While shortcomings in the care of depression parallel those seen for other chronic illnesses,10 depression treatment presents special challenges. Depression is defined by pessimism, discouragement, and fatigue. Stigma remains an important barrier to treatment seeking and treatment adherence.11 Benefits of treatment may not appear for several weeks. Antidepressant pharmacotherapy requires persistence through adverse effects and medication adjustments.12 Psychotherapy

Context Both antidepressant medication and structured psychotherapy have been proven efficacious, but less than one third of people with depressive disorders receive effective levels of either treatment.

Objective To compare usual primary care for depression with 2 intervention programs: telephone care management and telephone care management plus telephone psychotherapy.

Design Three-group randomized controlled trial with allocation concealment and blinded outcome assessment conducted between November 2000 and May 2002.

Setting and Participants A total of 600 patients beginning antidepressant treatment for depression were systematically sampled from 7 group-model primary care clinics; patients already receiving psychotherapy were excluded.

Interventions Usual primary care; usual care plus a telephone care management program including at least 3 outreach calls, feedback to the treating physician, and care coordination; usual care plus care management integrated with a structured 8-session cognitive-behavioral psychotherapy program delivered by telephone.

Main Outcome Measures Blinded telephone interviews at 6 weeks, 3 months, and 6 months assessed depression severity (Hopkins Symptom Checklist Depression Scale and the Patient Health Questionnaire), patient-rated improvement, and satisfaction with treatment. Computerized administrative data examined use of antidepressant medication and outpatient visits.

Results Treatment participation rates were 97% for telephone care management and 93% for telephone care management plus psychotherapy. Compared with usual care, the telephone psychotherapy intervention led to lower mean Hopkins Symptom Checklist Depression Scale depression scores ($P=0.02$), a higher proportion of patients reporting that depression was “much improved” (80% vs 55%, $P<.001$), and a higher proportion of patients “very satisfied” with depression treatment (59% vs 29%, $P<.001$). The telephone care management program had smaller effects on patient-rated improvement (66% vs 55%, $P=0.04$) and satisfaction (47% vs 29%, $P=.001$); effects on mean depression scores were not statistically significant.

Conclusions For primary care patients beginning antidepressant treatment, a telephone program integrating care management and structured cognitive-behavioral psychotherapy can significantly improve satisfaction and clinical outcomes. These findings suggest a new public health model of psychotherapy for depression including active outreach and vigorous efforts to improve access to and motivation for treatment.

JAMA. 2004;292:935-942 www.jama.com

©2004 American Medical Association. All rights reserved.
requires a significant commitment of time. Dissemination of empirically supported psychotherapies is slower and more difficult than dissemination of new medications or medical procedures.13

We describe a randomized trial evaluating 2 approaches to addressing these barriers to effective depression treatment. The first program was an updated version of a telephone outreach and care management program to improve the quality of antidepressant pharmacotherapy.14 The second program included telephone care management and added an 8-session structured psychotherapy program delivered by telephone.15 Both were compared with usual primary care treatment.

METHODS
Setting and Study Sample
Between November 2000 and May 2002, participants were sampled from 7 group-model primary care clinics of Group Health Cooperative (GHC). The GHC is a prepaid health plan serving approximately 500,000 Washington State residents enrolled via employer and individual contracts and via risk-sharing contracts with Medicare and Medicaid programs. The GHC membership is demographically similar to the Seattle area population.16

Recruitment
Procedures were designed to enroll a population-based sample of primary care patients beginning antidepressant treatment for depression, excluding those already receiving psychotherapy and those already in remission when contacted. Each week, computerized pharmacy and visit registration data identified all adult patients starting a new episode of antidepressant medication for treatment of depression (ie, filled antidepressant prescription, visit diagnosis of depression, and no antidepressant use in the prior 90 days). Computerized records were also used to exclude those already receiving psychotherapy (ie, any specialty mental health visit in the last 90 days) and those with a diagnosis of bipolar disorder or schizophrenia in the last 2 years.

Baseline Assessment
Potential participants received an invitation letter including all elements of informed consent (full description of study procedures, risks, and potential benefits). A telephone interview approximately 1 week later assessed eligibility and baseline depression severity (Hopkins Symptom Checklist17 Depression Scale [SCL] and Patient Health Questionnaire18 [PHQ]). Those already in remission at the baseline assessment (ie, SCL depression score <0.5) were excluded. Interviewers also asked about use of non-GHC services to exclude those not meeting primary eligibility criteria (ie, not a new episode of antidepressant treatment, receiving or planning to receive psychotherapy). Those with cognitive, language, or hearing impairment severe enough to preclude participation were also excluded.

Eligible patients were invited to participate in the randomized trial. The 2 interventions were briefly described, but commitment to participate in either intervention was not a condition for randomization. After a full description of study procedures, risks, and benefits, all participants provided documented oral consent prior to the baseline assessment and again prior to enrollment in the randomized trial. All study procedures, including use of oral consent, were reviewed and approved by the GHC Human Subjects Review Committee.

Randomization
Between 1 and 7 days after the baseline interview, the study data manager assigned eligible and consenting participants to 1 of 3 treatment groups using computer-generated random numbers without blocking or stratification. Participants assigned to either of the 2 intervention programs were notified by a telephone call from the care manager or telephone counselor (see below). Participants assigned to the usual care control group were not contacted until the first blinded outcome assessment (see below).

Telephone Care Management Program
Care managers contacted participants assigned to the program within 2 weeks of randomization (typically 4 weeks after the initial antidepressant prescription). Two additional telephone contacts occurred 4 and 12 weeks later with a personalized mail contact approximately 20 weeks later. As in our earlier care management program,14 each contact included a brief, structured assessment of depressive symptoms, antidepressant medication use, and adverse effects. During telephone contacts, care managers followed specific scripts to address concerns regarding adverse effects and used scripted motivational enhancement interventions to address common reasons for discontinuing medication.

The treating primary care physician received a structured report of each contact including a summary of the clinical assessment and computer-generated recommendations regarding medication adjustment. If a change in treatment was recommended, the care manager contacted the treating physician to facilitate patient-physician communication and follow-up. Care managers also provided as-needed crisis intervention and care coordination including referrals to mental health specialty care. Most care manager time was spent in outreach (eg, ≥5 telephone attempts to complete a contact, mailings to patients not responding to telephone calls) and coordination with treating physicians.

After enrollment in the program, each participant received a detailed self-management workbook (adapted from the telephone therapy patient workbook described below) emphasizing behavioral activation, identifying and challenging negative thoughts, and developing a long-term self-care plan. Care managers recommended reading the workbook but did not provide any specific counseling. All care management activities (caseload tracking, structured assessment, medication algorithms, provider reports, supervision) were organized and supported by an electronic decision support system.
Care managers (K.H. and S.H.) were mental health clinicians with bachelor’s or master’s degrees and at least 1 year of experience in depression assessment (including telephone assessment and triage). Additional training for this study included 6 hours of didactic instruction and role-play followed by completion of at least 5 observed care manager contacts prior to any patient contact. Care managers received approximately 30 minutes of supervision each week from a psychiatrist (G.E.S.) and psychologist (E.J.L.).

**Telephone Psychotherapy Program**
The telephone psychotherapy intervention included all aspects of the telephone care management program plus a structured 8-session cognitive-behavioral psychotherapy program adapted from an earlier pilot study. The initial session occurred 1 to 2 weeks after randomization with sessions 2 through 4 at approximately weekly intervals. Intervals between later contacts ranged from 1 to 4 weeks depending on need and patient preference. As with the telephone care management program, each session began with a brief structured assessment of depressive symptoms, medication use, and adverse effects. The telephone psychotherapy program was an addition to, rather than a substitute for, telephone care management. Therapy sessions were designed for completion in 30 to 40 minutes. The initial session included a detailed clinical history, assessment of motivation for treatment, and motivational enhancement exercises. Sessions 2 through 4 focused on increasing pleasant and rewarding activities. Sessions 5 through 7 focused on identifying, challenging, and distancing from negative thoughts. Session 8 focused on creation of a personal self-care plan covering medication use, self-monitoring, and self-management skills.

A participant workbook included didactic material, in-session exercises, and written homework exercises for completion between sessions. Participants were asked to read the relevant workbook chapter prior to each session. During each session, therapists followed a specific agenda and completed a detailed checklist to monitor session content. Following each session, the therapist mailed a personalized follow-up letter describing mutually agreed-upon plans for between-session homework. While therapists attempted to schedule sessions in advance, failure to keep appointments was common and significant outreach (eg, ≥5 outreach calls to complete a single session) was sometimes required.

Telephone counselors (S.T. and K.L.) were psychotherapists with master’s degrees and at least 1 year of experience in outpatient psychotherapy of depression. Additional training included approximately 12 hours of didactic instruction and role-play, trainee’s observation of at least 6 sessions, and conduct of 6 sessions with audiotape observation. The 2 therapists received approximately 60 minutes of supervision each week from a psychologist (E.J.L.) and psychiatrist (G.E.S.) and attended a twice-monthly seminar (led by E.J.L.) on motivational interviewing techniques. Each therapist audiotaped approximately 15 additional sessions for detailed review.

**Blinded Outcome Assessments**
All participants were contacted for blinded telephone outcome assessments 6 weeks, 3 months, and 6 months after randomization. All assessments included a patient-rated measure of global improvement since entering the study (a 7-point scale ranging from “very much improved” to “very much worse”) and repeat administration of the SCL depression scale. The 3- and 6-month assessments also included the PHQ and a rating of satisfaction with depression treatment on a 7-point scale ranging from “very satisfied” to “very dissatisfied.” To preserve blinding of telephone interviews, participants were repeatedly advised to offer no information regarding treatment received. Interviewers had at least 1 year of experience conducting similar assessments. Training for this study included 6 hours of didactic instruction and role-play followed by weekly supervision by the principal investigator. Previous research supports the reliability and convergent validity of depression assessments conducted via telephone.

**Data Analysis**
Analyses used all available data at each time point with comparisons based on original treatment assignment, regardless of treatment received. Primary analyses (defined a priori) compared each intervention group with the usual care group in terms of mean SCL depression score averaged across the 3 follow-up assessments and in terms of 3 categorical outcomes at 6 months: proportion of participants with at least a 50% improvement in SCL depression score, proportion with self-ratings of “much improved” or “very much improved,” and proportion with a rating of “very satisfied” with depression treatment. Unadjusted comparisons used t tests for continuous measures and χ² statistics for categorical measures. Comparisons of mean SCL depression scores over time used generalized estimating equations with each follow-up assessment as a repeated measure and baseline depression score, age, and sex as covariates. Power calculations indicated that a sample of 200 per group was necessary to detect a difference of 0.2 in mean SCL depression score (80% power, 2-sided P value = .05). All analyses were conducted using version 8 of the SAS software package (SAS Institute, Cary, NC).

**RESULTS**

**Sample**
The progress of participants through the trial is shown in Figure 1. Of 1883
sampled from computerized records, 1247 (66%) participated in the telephone eligibility assessment. Participants and nonparticipants did not differ in mean age, proportion female, or prior history of depression treatment. Of 634 found eligible for randomization, 600 (95%) agreed to participate. Baseline characteristics of participants assigned to the 3 treatment groups are compared in Table 1. On average, participants reported a moderate level of depressive symptoms at baseline (2-4 weeks after starting treatment).

Of patients randomized, 578 (96%) completed at least 1 blinded follow-up assessment and were included in analyses of clinical outcomes; 532 (89%) completed the 6-month blinded assessment. Those completing and not completing the 6-month assessment did not differ significantly in age, sex, baseline depression score, or treatment assignment. Of those randomized, 563 (94%) remained enrolled in the health plan for 6 months and were included in analyses of antidepressant use and visit rates (utilization analyses).

**Participation in Intervention Programs**

Of those assigned to telephone care management, 97% completed at least 1 telephone contact and 85% completed all 3 contacts. Contacts typically lasted 10 to 15 minutes. Of those assigned to telephone psychotherapy, 14 (7%) completed no sessions, 2 (1%) completed only the first session (history and motivational enhancement), 167 (84%) completed 4 or more sessions (including behavioral activation), and 125 (63%) completed 7 or more sessions (including behavioral activation and cognitive techniques). Sessions typically lasted 25 to 35 minutes, but varied from 10 to 75 minutes.

**Effects on Clinical Outcomes**

As shown in Figure 2, improvement in SCL depression score was greatest in the telephone psychotherapy group, intermediate in the telephone care management group, and least in the usual care group. In a repeated measures model, the telephone psychotherapy group showed significantly lower mean depression scores during follow-up ($\chi^2 = 5.94, P = .02$) with an increasing difference from 6 weeks to 6 months ($P < .001$). The difference between the telephone psychotherapy and usual care groups at 6 months (0.33 points on the SCL depression scale) is equivalent to approximately one half of the SD of scores in the general population. The
mean difference in follow-up depression scores between the telephone care management group and usual care was not statistically significant \((\chi^2 = 0.69, P = .40)\). Results for PHQ depression scores closely paralleled those for SCL scores (data not shown). As shown in Table 2, patients assigned to telephone psychotherapy were significantly more likely to experience a 50% improvement in SCL depression score than were usual care patients. By this definition, the number needed to treat per additional treatment response was 6.4.

The telephone care management group showed an intermediate rate of treatment response by this measure, not significantly different from usual care. Both telephone psychotherapy and telephone care management participants were significantly more likely than usual care participants to describe themselves as “much improved” or “very much improved.” By this definition, number needed to treat for the telephone psychotherapy group was 6.4. The pattern of results did not change if participants not completing the 6-month assessment were considered nonresponders on both measures. The proportion of patients “very satisfied” with treatment for depression was significantly higher in both the telephone psychotherapy and telephone care management groups.

Secondary analyses compared clinical effects of the telephone psychotherapy and telephone care management programs. Patients assigned to telephone psychotherapy were significantly more likely to describe themselves as “much improved” or “very much improved” \((P = .004)\) and to be “very satisfied” with depression treatment \((P = .02)\). The 2 interventions did not differ significantly in mean SCL depression score during follow-up \((P = .09)\) or in probability of 50% or greater improvement in SCL depression score \((P = .18)\).

**Effects on Care Process**

As shown in Table 3, there were modest differences in some categories of outpatient visits (eg, more depression-related primary care visits in the telephone care management group, fewer in-person psychotherapy visits in the telephone psychotherapy group). Total visit rates, however, were generally similar. When in-person visits were considered along with telephone psychotherapy visits, the proportion of participants receiving at least 4 sessions of psychotherapy was, as expected, markedly higher in the telephone psychotherapy group. The proportion receiving at least 4 psychotherapy visits was higher in the telephone care management group than in usual care, but rates in both groups were below 10%. Patients assigned to telephone care management were significantly more likely to use antidepressants at an adequate dose for at least 90 days. There was a roughly similar increase in probability of adequate pharmacotherapy for the telephone psychotherapy group, but the difference from usual care was not significant at the 5% level.

**Predictors of Treatment Benefit**

Post-hoc analyses examined baseline factors predicting benefit from the intervention programs. Effects of either intervention did not vary according to participant age, sex, race/ethnicity, educational level, or marital status. Intervention effect did vary according to baseline depression severity with no apparent effect of either intervention among those with mild baseline SCL depression scores between 0.5 and 1.0. Intervention effects were generally similar for those with moderate and severe symptoms.

**COMMENT**

We found that a program combining telephone care management and brief, structured psychotherapy significantly improved outcomes for primary care patients initiating antide-
Telephone programs may sacrifice the richness of traditional in-person treatment, but they address several important barriers to dissemination of effective depression treatments. Vigorous telephone outreach allowed us to engage patients who might not be reached by traditional in-person treatment. Telephone sessions eliminated travel and waiting time and allowed more flexible scheduling. Greater privacy of telephone contacts helped to circumvent stigma. The telephone format allowed therapists to use detailed agendas and checklists during therapy sessions, an important contribution to treatment quality and consistency. While these programs were tested in urban and suburban settings, advantages may be greater in rural settings where access to psychotherapists is more limited and the stigma attached to visiting a mental health provider may be greater.

Interpretation of these results should consider several limitations. One third of potential participants declined to complete the initial assessment. We cannot determine which specific elements of the telephone psychotherapy program account for its effectiveness. Including all telephone and in-person contacts, the telephone psychotherapy group received approximately 3 times as many follow-up contacts as the usual care group. We cannot separate specific content of the program (behavioral activation and cognitive restructuring) from the increased contact provided to the telephone psychotherapy patients. While the intervention programs may have increased rates of medication use, the quality of pharmacotherapy in both programs was often still inadequate. Finally, neither program would be supported by current fee-for-service reimbursement models.

The number of in-person follow-up visits in all 3 groups was approximately 3 visits over 6 months. The low rates of specialty mental health use are not surprising given our exclusion of patients already seeking psychotherapy. Furthermore, we observed these high rates of participation after excluding those not experiencing depression motivation. 36,37 Rates of participation in the telephone psychotherapy intervention were markedly higher than those for traditional in-person therapies,7,35 even compared with clinical trial participants selected for treatment motivation.36,37

Telephone programs may sacrifice the richness of traditional in-person therapy, but they address several important barriers to dissemination of effective depression treatments. Vigorous telephone outreach allowed us to engage patients who might not be reached by traditional in-person treatment. Telephone sessions eliminated travel and waiting time and allowed more flexible scheduling. Greater privacy of telephone contacts helped to circumvent stigma. The telephone format allowed therapists to use detailed agendas and checklists during therapy sessions, an important contribution to treatment quality and consistency. While these programs were tested in urban and suburban settings, advantages may be greater in rural settings where access to psychotherapists is more limited and the stigma attached to visiting a mental health provider may be greater.

Table 3. Service Use Over 6 Months Following Randomization

<table>
<thead>
<tr>
<th>Service Use</th>
<th>Usual Care (n = 179)</th>
<th>Telephone Care Management (n = 195)</th>
<th>Telephone Care Management + Telephone Psychotherapy (n = 189)</th>
<th>Test Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary care visits, mean (SD), No.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With mental health diagnosis</td>
<td>1.02 (1.22)</td>
<td>1.28 (1.18)</td>
<td>1.35 (1.40)</td>
<td>Z = 2.66 .01</td>
</tr>
<tr>
<td>No mental health diagnosis</td>
<td>1.51 (1.71)</td>
<td>1.30 (1.55)</td>
<td>1.21 (1.94)</td>
<td>Z = 1.30 .19</td>
</tr>
<tr>
<td>Mental health specialty visits, mean (SD), No.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication management</td>
<td>0.03 (0.23)</td>
<td>0.12 (0.52)</td>
<td>0.03 (0.27)</td>
<td>Z = 1.89 .06</td>
</tr>
<tr>
<td>Psychotherapy</td>
<td>0.18 (0.64)</td>
<td>0.51 (1.62)</td>
<td>0.09 (0.64)</td>
<td>Z = 1.55 .12</td>
</tr>
<tr>
<td>Total primary and mental health visits, mean (SD), No.</td>
<td>2.75 (2.14)</td>
<td>3.21 (2.79)</td>
<td>2.69 (2.45)</td>
<td>Z = 1.15 .25</td>
</tr>
<tr>
<td>≥4 Psychotherapy sessions, No. (%)†</td>
<td>2 (1)</td>
<td>12 (6)</td>
<td>163 (88)</td>
<td>χ² = 6.6 .01</td>
</tr>
<tr>
<td>Adequate pharmacotherapy for 90 d, No. (%)</td>
<td>74 (41)</td>
<td>106 (54)</td>
<td>95 (50)</td>
<td>χ² = 6.3 .01</td>
</tr>
</tbody>
</table>

*Z score from Mann-Whitney nonparametric test.†Includes both in-person visits and telephone therapy sessions.
Primary care depression guidelines typically do not recommend combining antidepressant medication and psychotherapy except for patients with severe or chronic depression. Previous studies have compared combined treatment to the pharmacotherapy as provided in clinical trials (motivated patients, expert clinicians, frequent follow-up visits, and high adherence rates). We evaluate the benefit of brief structured psychotherapy added to typical primary care treatment (variable motivation, infrequent follow-up, frequent nonadherence). We find that vigorous efforts to engage patients in structured psychotherapy yield significant clinical benefit over pharmacotherapy alone for primary care patients with moderate depression. Given a shift in treatment patterns away from psychotherapy and toward pharmacotherapy alone, our findings have important implications for expanding the role of structured psychotherapy in the care of depression.

Efforts to improve management of depression in primary care must consider resource limitations and pressures to control costs. While we estimate the cost of providing telephone psychotherapy to be less than $50 per session, these additional resources should be directed to those patients most likely to benefit. Post hoc analyses suggest that benefit was confined to those with at least moderate depressive symptoms persisting for 2 to 4 weeks after a first antidepressant pre-

REFERENCES


Many persons have a wrong idea of what constitutes true happiness. It is not attained through self-gratification but through fidelity to a worthy purpose.
—Helen Keller (1880-1968)