TELEPHONE-DELIVERED, INTERPERSONAL THERAPY FOR HIV-INFECTED RURAL PERSONS WITH DEPRESSION: A PILOT RANDOMIZED CLINICAL TRIAL

A dissertation presented to the faculty of the College of Arts and Sciences of Ohio University

In partial fulfillment of the requirements for the degree Doctor of Philosophy

Dana M. Ransom

August 2007
This dissertation titled

TELEPHONE-DELIVERED, INTERPERSONAL THERAPY FOR HIV-INFECTED RURAL PERSONS WITH DEPRESSION:
A PILOT RANDOMIZED CLINICAL TRIAL

by

DANA M. RANSOM

has been approved for
the Department of Psychology
and the College of Arts and Sciences by

__________________________
Timothy G. Heckman
Professor of Psychology

__________________________
Benjamin M. Ogles
Dean, College of Arts and Sciences
Abstract

RANSOM, DANA, M., Ph.D., August 2007, Clinical Psychology

TELEPHONE-DELIVERED, INTERPERSONAL THERAPY FOR HIV-INFECTED RURAL PERSONS WITH DEPRESSION: A PILOT RANDOMIZED CLINICAL TRIAL (37 pp.)

Director of Dissertation: Timothy G. Heckman

Background: Rural areas have historically accounted for 6% of AIDS cases in the United States. Research portends that many HIV-infected rural persons live with elevated levels of psychiatric distress and loneliness.

Purpose: This pilot study tested if a brief interpersonal psychotherapy intervention delivered via telephone could enhance quality of life in HIV-infected adults living with depression in rural areas of the United States.

Methods: Seventy-nine participants were randomly assigned to a Usual ASO-based Care Condition (UCC) or a six-session, telephone-delivered, Interpersonal Therapy (IPT) intervention. Participants completed self-administered surveys pre- and post-intervention that assessed depressive and psychosocial symptoms, perceptions of loneliness, and social support.

Results: Telephone IPT participants evidenced greater reductions in depressive symptoms and overall levels of psychosocial distress compared to UCC participants. Nearly one-third of IPT intervention completers reported clinically-meaningful reductions in psychological symptoms from pre-to post-intervention.

Conclusions: The study’s telephone-delivered, IPT intervention showed considerable promise to reduce depressive and psychological symptoms in HIV-infected rural persons.
Based on the promising findings of this pilot RCT, additional research on this intervention technique with this clinical population is warranted.

**Keywords:** HIV, rural, non-metropolitan, telephone, interpersonal psychotherapy

Approved: 

Timothy G. Heckman

Professor of Psychology
Acknowledgments

My gratitude is extended to the many individuals who contributed time, energy, and thought to the organization and implementation of this dissertation project, Project Rural-Link. My thanks are extended to my research advisor, Dr. Timothy Heckman, for his guidance and the sharing of his eloquent skills in conceptualization and writing. I thank Dr. Timothy Anderson for his gift of supervision and thoughtfulness to the therapeutic alliance. My committee members, Dr. Kenneth Holroyd, Dr. John Garske, Dr. Tania Basta, and Dr. James Dearing, assisted greatly with their time and recommendations. My appreciation is extended to the several funding sources that assisted with this project, including the Ohio University Health Psychology Group, Department of Psychology, and Graduate Student Senate. I additionally thank the Heckman lab and Monica Silverthorn, MSW for their assistance in organizational support and community networking. Finally, this project could not have been possible without the dedication of my fellow colleagues and therapists, David Cosio, Greg Goldman, Elizabeth Goldman, Mellisa Buelow, Candace Patterson, Brian Uhlin, Brad Spickard, Roen Montalva, Erin Mark, and Lindsay Orchowski.
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>3</td>
</tr>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>5</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>7</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>8</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>9</td>
</tr>
<tr>
<td>METHOD</td>
<td>13</td>
</tr>
<tr>
<td>RESULTS</td>
<td>20</td>
</tr>
<tr>
<td>DISCUSSION</td>
<td>23</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>28</td>
</tr>
</tbody>
</table>
List of Tables

<table>
<thead>
<tr>
<th>Tables</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinically-Meaningful Change and Reliable Change Indices</td>
<td>34</td>
</tr>
</tbody>
</table>
List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Participant flow chart, randomization process, and completion status</td>
<td>36</td>
</tr>
<tr>
<td>2. BDI-II and OQ pre- and post-intervention scores</td>
<td>37</td>
</tr>
</tbody>
</table>
Through 2005, more than 50,000 persons were living in non-metropolitan statistical areas (MSAs) of the United States when they were diagnosed with AIDS, representing approximately 6% of all U.S. AIDS cases (CDC, 2005). AIDS entered into rural areas of the U.S. in two “waves” (Lanksy et al., 2000). The first wave occurred relatively early in the epidemic, when HIV-infected persons with deteriorating health conditions migrated from urban centers to rural communities to be with caregivers, family members, and friends. The second, and current, wave consists of persons who are “native infections,” most typically young heterosexual women of color who are infected in their home communities (Berry, 1993; Lanksy et al., 2000). Highly active antiretroviral therapy (HAART) has also lengthened periods of survival and increased the number of persons living with HIV/AIDS in rural communities (Kalichman, Ramachandran, & Ostrow, 1999). Given the growing number of new HIV infections and long-term AIDS survivors in rural areas, there is an urgent need to characterize the psychosocial needs of this group and develop culturally-contextualized interventions to facilitate their adjustment efforts.

While prevalence rates of depression in HIV-infected persons are difficult to estimate precisely, findings from a large, probability-based sample suggest that nearly one-third of persons receiving medical care for their HIV disease meet criteria for major depressive disorder (Bing et al., 2001). This rate greatly exceeds that found in the general population (i.e., 2 to 9% point prevalence estimates in community-dwelling adults; APA, 2000). A meta-analysis of the AIDS mental health literature also portends that the rate of major depressive disorder in HIV-infected persons is twice that found in
HIV-seronegative persons (Ciesla & Roberts, 2001). Rates of depression in HIV-infected rural persons are, at the very least, comparable to those found in their urban counterparts (Uphold, Rane, Reid, & Tomar, 2005). Indeed, one study found that 60% of HIV-infected rural persons reported “moderate” or “severe” levels of depressive symptoms (Heckman et al., 2004). These high rates of depression are disconcerting because increased depression in HIV-infected persons is associated with increased mortality (Ickovics et al., 2001; Cook et al., 2004) and poorer emotional and social well-being (Jia, Uphold, Wu, Chen, & Duncan, 2005).

Fortunately, treatments for depression have shown great potential to improve mental health functioning and clinical health outcomes in persons living with HIV/AIDS. Cook and colleagues (2004) found that HIV-infected persons who received mental health services were significantly less likely to die from AIDS-related causes over a seven-year period. In a study of HIV-infected gay men diagnosed with depression, a cognitive-behavioral stress management intervention—in combination with antiretroviral medication adherence training—resulted in viral load reductions over a 15-month follow-up, even when controlling for medication adherence (Antoni, et al., 2006).

Due to geographic isolation, physical limitations, and confidentiality concerns (Kalichman, 1998; Heckman et al., 1998), HIV-infected rural persons may be unable, or disinclined, to access treatment for their mental health needs. However, telephone-based interventions have the potential to circumvent many of these barriers and reach individuals who are unaffiliated with mental health support services. A recent investigation of two telephone-delivered, mental health interventions for HIV-infected
rural persons showed that telephone-based, mental health support services are a feasible form of intervention for this group. Heckman and Carlson (2007) enrolled 299 persons living with HIV/AIDS in rural areas of 13 U.S. states. Participants were assigned to a standard of care comparison condition, an 8-session information-support group intervention, or an 8-session coping improvement group intervention. In this study, participants who lived farther away from urban centers participated in a greater number of intervention sessions. Intervention-outcome findings of this RCT, however, were disappointing. Participants assigned to the coping improvement group intervention reported no changes on the primary outcome measures of depressive symptoms, psychological symptoms, social support, or barriers to health care and social services. Participants assigned to the information support group intervention reported increases in perceptions of social support and reductions in barriers to care; however, these changes were of limited duration and clinical significance. Heckman and Carlson (2007) concluded that neither intervention technique is ideally suited for HIV-infected rural persons and that more appropriate intervention approaches are needed for this group.

Interpersonal psychotherapy interventions for persons living with HIV/AIDS have yielded promising intervention-outcomes over the past decade (Markowitz et al., 1998). Interpersonal psychotherapy is designed to treat depressive symptoms by focusing on clients’ primary interpersonal relationships, with particular emphasis on the problem areas of grief, interpersonal disputes, role transitions, and interpersonal sensitivity (Klerman, Weissman, Rounsaville, & Chevron, 1984). Following the model of the National Institute of Mental Health (NIMH) Treatment of Depression Collaborative
Research Program (TDCRP; Elkin, Parloff, Hadley, & Autry, 1985), Markowitz and colleagues (1998) compared four, 16-week interventions designed to decrease depressive symptoms in 101 persons living with HIV/AIDS: interpersonal psychotherapy; cognitive behavioral therapy; supportive psychotherapy; and supportive psychotherapy with antidepressant medication (Imipramine). Results indicated that interpersonal therapy participants evidenced comparable reductions in depression to those participants who received supportive therapy combined with antidepressant medication; IPT participants showed greater reductions in depressive symptoms than those receiving cognitive behavioral or supportive therapy alone. Given the interpersonal nature of many stressors that confront HIV-infected rural persons, such as multiple bereavements, partner-relational conflicts, and difficulties associated with stigma, prejudice, and discrimination (Sikkema, Kochman, DiFranceisco, Kelly, & Hoffman, 2003; Milan et al., 2005; Uphold et al., 2005), therapeutic interventions that focus on interpersonal relations (i.e., IPT) may be highly relevant for this group. However, the only known randomized control trial that has tested IPT for HIV-infected persons, Markowitz et al., 1998, was conducted with an urban-based sample and used a face-to-face intervention format. Therefore, it is unclear if IPT delivered via telephone technology can reduce psychological distress in HIV-infected rural persons.

Because many AIDS treatment providers are often in need of interventions that are brief in duration and can be implemented immediately (e.g., when a new client presents at the organization or when a client is in a period of acute crisis), the current study’s IPT intervention was both time-limited and employed a one-on-one format.
Many investigations have found that clients who participate in psychotherapy show marked improvements in psychological functioning with as few as five to eight sessions (e.g., Howard, Kopta, Krause, & Orlinsky, 1986; King et al., 2000). In light of these findings, the current intervention utilized a six-session format. To maximize the efficacy of the intervention, while simultaneously reducing its length, Weissman (personal communication, October 5, 2005), an originator of IPT, recommended following the original IPT protocol as closely as possible while using a reduced number of sessions.

The present study tested if a six-session, telephone-delivered IPT intervention could reduce psychological distress and loneliness in HIV-infected rural persons who had comorbid diagnoses of depression. The study hypothesized that, compared to participants who received standard psychosocial services provided by AIDS service organizations, participants in the brief, telephone-delivered, interpersonal therapy intervention would show significant and clinically-meaningful reductions in depressive symptoms, psychological symptoms, and loneliness from pre- to post-intervention.

Method

Participants and Procedures

Seventy-nine participants were recruited through AIDS service organizations (ASOs) in 10 states, including: Indiana (n = 20), Arizona (n = 16), Ohio (n = 14), Kentucky (n = 11), Pennsylvania (n = 8), Minnesota (n = 4), Michigan (n = 3), California (n = 1), Nebraska (n = 1), and New York (n = 1). Upon receiving approval from the university’s institutional review board, recruitment-related materials describing the study were mailed to participating ASOs. Recruitment packets, which included brochures and
cover letters describing the project, were sent to HIV-infected rural persons by participating ASOs. The brochures described the study, its eligibility criteria, and provided a toll free telephone number participants could use to contact the research office.

All eligible participants satisfied the following inclusion criteria: (1) 18-plus years of age; (2) a self-reported diagnosis of HIV/AIDS; (3) living in a community with 50,000 residents or fewer (i.e., the criteria used by the Centers for Disease Control and Prevention to designate communities as “non-metropolitan,” CDC, 2005); and (4) voluntary provision of informed consent. Furthermore, all participants met diagnostic criteria for a depression-spectrum disorder as measured by a telephone-administered version of the Mood Module of the “Primary Care Evaluation of Mental Disorders” (PRIME-MD; Spitzer, Kroenke, Williams, & the PHQ Primary Care Study Group, 1999). Specifically, participants met criteria for major depression, major depression in partial remission, dysthymia, or minor depressive disorder.

Of the 96 individuals who contacted the research office via telephone to inquire into study enrollment, 12 did not meet criteria for a depressive disorder. Another 5 participants chose not to complete the pre-intervention survey. (Please see Figure 1). The 79 participants who completed pre-intervention surveys were randomly assigned to the telephone intervention or ASO usual care condition.

General Methodology Across Conditions

During eligibility screening interviews, provision of informed consent and possible benefits and risks associated with the study were discussed with all participants.
Eligible participants were mailed two copies of the Informed Consent form: one copy to read, sign, and return to the study site and a second copy to keep for their personal records. The pre-intervention survey was also mailed to each participant and was completed within 10 days in the privacy of the participant’s home. Upon return of the pre-intervention assessment, participants were compensated $20 and randomly assigned to one of the study’s two conditions.

**Usual ASO-based Care Condition (UCC).** Participants assigned to this condition \((n = 38)\) received no active therapeutic intervention. However, all participants had access to standard ASO-based services (e.g., case management, support groups, financial assistance); no limitations were imposed on participants vis-à-vis their use of alternate psychosocial services. In addition, a trained research assistant contacted each UCC participant via telephone at Week 03 of the study to identify any potential clinical concerns that might have required clinical intervention. While UCC participants were given the opportunity to contact the research office and request brief, time-limited individual telephone therapy in the event that they experienced acute periods of distress, none requested this service.

**Interpersonal therapy (IPT) intervention.** Participants assigned to this condition \((n = 41)\) received six sessions of telephone-delivered IPT. Prior to receiving the intervention, each participant was contacted to review logistics of the treatment condition (e.g., length of each intervention session, the qualifications of the tele-therapist assigned to him/her) and to arrange a time period for their first intervention session. During this initial telephone call, emphasis was placed on the importance of: (i) finding a private
location in which to participate in intervention sessions; (ii) scheduling sessions when few interruptions were anticipated; (iii) refraining from the use of call waiting, except in possible emergency circumstances; and (iv) the time-limited nature of the study intervention. The first tele-therapy session explored participants’ psychiatric symptoms, discussed the nature of depression, reviewed current interpersonal relationships, and the identification of a problem relationship or circumstance that would serve as the therapeutic focus for the remainder of the intervention. Based on IPT protocol (Klerman et al., 1984), each participant’s primary interpersonal concern was framed around one of four focal areas: interpersonal role disputes (e.g., conflict with partner); role transition (e.g., divorce); grief (e.g., death of loved one); or interpersonal sensitivity (e.g., persistent loneliness). Sessions 2 through 6, each of which was approximately 50 minutes in duration, addressed the interpersonal conflict identified in the first session via exploration of the participant’s perception of the problem, patterns of communication, expectations about the relationship(s), and potential adaptive strategies that could be enacted to improve the relationship and/or resolve the conflict/problem.

A total of 12 therapists (11 Masters-level and one Ph.D.-level clinical psychologist) administered the IPT intervention. All interventionists were supervised by a licensed clinical psychologist. Therapists completed a one-day training session to maximize comprehension of the study’s purposes and procedures, the theoretical background of the IPT intervention, and the importance of fidelity to intervention protocol. A standardized (i.e., briefer) adaptation of the original IPT manual was used by all interventionists to facilitate intervention delivery efforts and increase fidelity to
intervention protocol. The intervention training also reviewed the study’s protocol to be enacted in the event of mental health emergencies (e.g., participants being actively suicidal or expressing homicidal intent). Current information outlining local mental health organizations in the geographic areas from which participants were recruited and telephone numbers of national AIDS crisis “hotlines” were provided to therapists during training. This information was made available to all participants who were experiencing periods of acute crisis or who expressed interest in continued care following termination of the six-session intervention. During the course of the study, one ASO was contacted to follow-up with a participant who endorsed passive suicidal ideation. The issue was resolved successfully.

*Fidelity to intervention.* Therapists in the study rated their perceived adherence to intervention protocol using a 4-point scale (1 = “Fully Adherent;” 2 = “Mostly Adherent;” 3 = “Partially Adherent;” and 4 = “Minimally Adherent”). Average adherence to intervention protocol was calculated over the 6 treatment sessions. The mean perceived adherence was 1.85 ($sd = 0.36$; Maximum Adherence = 1.17, Minimum Adherence = 2.50). There were no differences in treatment adherence across therapists, $F(11,28) = 1.31, p=.30$.

*Assessment Instruments*

Prior to, and after, participating in the intervention, participants were mailed the study’s 12-page questionnaire. Self-addressed, stamped envelopes were provided in which participants returned completed surveys to the research office. The questionnaire took approximately 45 minutes to complete. The survey included the measures listed
below, all of which used a retrospective recall period of the prior week. All psychometric characteristics are based on data collected in the current study.

*Beck Depression Inventory* (BDI-II; Beck, Steer, & Brown, 1996). The 21-item BDI-II measured cognitive, affective, and somatic symptoms of clinical depression. Each item used a four-point response scale, yielding a total possible score between 0 and 63 ($\alpha = .89$).

*Outcomes Questionnaire* (OQ; Lambert, Lunnen, Umphres, Hansen & Burlingame, 1994). The 45-item OQ measured psychiatric distress and participants’ progress in therapy across three dimensions: subjective discomfort; interpersonal relations; and social role performance. Each item used a 5-point response scale (0=“Never” to 4=“Almost always”). The OQ also provided a total score (TOT), with possible scores ranging from 0 to 180. Higher scores indicated poorer overall psychosocial functioning ($\alpha = .95$, total scale).

*Provision of Social Relations Scale* (PSRS; Turner, Frankel, & Levin, 1983). The 15-item PSRS assessed perceived social support from family members and friends. Each item was scored on a 5-point response scale (1=“Very much like me” to 5=“Not at all like me”). Higher scores indicated greater perceived support ($\alpha = .88$).

*UCLA Loneliness Scale* (Russell, Peplau, & Cutrona, 1980). A 10-item version of the UCLA Loneliness Scale assessed participants’ perceptions of loneliness. Each item used a 4-point response scale (1=“Never” to 4=“Often”). Higher scores indicated more loneliness ($\alpha = .82$).
Sociodemographics. Participants provided information on the following variables: gender, ethnicity, education, employment status, income, relationship status, duration of illness, health status, alternate mental health treatment(s), and current living arrangements.

Data Analytic Plan

Data Preparation. Assumptions of normality were examined via probability plots and measures of skewness and kurtosis. Two IPT participants were determined to be outliers on both OQ Total and BDI-II scores. These two cases had been identified by study interventionists as being “minimally involved” participants (e.g., minimal participation in most or all intervention sessions and being unprepared for most intervention sessions). Both participants also reported histories of comorbid substance abuse disorders. These outlier cases, as well as those with missing post-intervention data \((n=11)\), were retained for final outcome analyses by using a last-observation-carried-forward (LOCF) approach (total \(n=13\)). This method is used commonly in clinical trials to provide a conservative estimate of outcome scores had participants remained in treatment but showed no change over time (Streiner & Geddes, 2001).

Outcome Analyses. Chi-square tests of association and independent samples t-tests were initially conducted to identify associations among demographics assessed at pre-intervention, intervention condition, and intervention completion status (completed, dropped). The primary intervention outcome analysis compared Telephone IPT and UCC participants using repeated measures ANOVA on the four outcome measures (i.e., BDI-II, OQ, PSRS, UCLA Loneliness). Clinical significance was evaluated using the Reliable
Change Index (RCI; Jacobson & Traux, 1991), calculated as a difference score (post-treatment minus pre-treatment) divided by the standard error of measurement. RCI scores greater than one standard deviation (1.96) suggest that a participant’s pre- to post-intervention change exceeds measurement error. Participants reporting reliable change and whose scores moved from a dysfunctional range into a functional state were considered to demonstrate clinically-meaningful change.

Results

Participant Characteristics

Most participants ($M_{age}=44.4$ years, $min=25$, $max=65$) were White (77%) and male (76%). The average participant completed 12.2 years of formal education. The majority were social security disability recipients (61%) and reported annual incomes less than $10,000 (67%). Most had been prescribed HAART (69%) and had been living with HIV infection for 11.0 years. Participants lived an average of 91.3 miles from a city of 100,000 or more residents. At pre-intervention, participants’ mean BDI-II value was 27.4 ($sd = 11.0$), with 86% reporting scores greater than 13, the cut-off value recommended for identification of at least mild depression (Beck et al., 1996). Eighty-one percent of participants exceeded the OQ clinical cutoff (i.e., OQ ≥ 63; Lambert et al., 1994). The majority of participants (81%) were involved in some form of mental health treatment during the intervention trial, including psychotropic medications (66%), individual therapy (33%), and/or support groups (32%).

Chi-square measures of association found no associations among intervention condition and gender, ethnicity, employment status, relationship status, or current
involvement in mental health care services (all $p_s < .30$). A series of independent t-tests found no significant differences between intervention condition and age, education, number of years living with HIV, depressive symptoms, loneliness, or perceived social support at pre-intervention (all $p > .20$). However, IPT telephone participants reported marginally higher levels of overall distress as measured by the OQ at pre-intervention ($M = 87.0$, $sd = 24.0$) relative to UCC participants, ($M = 78.2$, $sd = 22.0$); $t(77) = 1.68$, $p = .10$.

**Attrition Rates and Completer versus Non-completer Analyses**

Thirteen participants were lost to follow-up, resulting in an overall study attrition rate of 16.5%. IPT participants (24.4%) were slightly more likely to discontinue study involvement compared to UCC participants (7.9%), $\chi^2(1, N = 79) = 2.80$, $p = .10$. Most participants who discontinued study involvement could not be contacted due to relocation ($n = 5$) or loss of telephone service ($n = 3$). Others discontinued participation due to lack of time ($n = 1$), family conflicts ($n = 1$), or mortality ($n = 1$). Additionally, the IPT outlier participants ($n = 2$) were dropped due to minimal involvement during the study intervention. Independent-group t-tests and chi-square analyses revealed no significant associations between completion status (completed, dropped) and any demographic or psychosocial variables assessed at pre-intervention.

**Treatment Analyses**

Of the IPT telephone participants who completed the intervention ($n = 31$), the modal therapeutic focus during intervention sessions related to interpersonal role disputes (48.4%), such as a current conflict with family member or partner. Other stressors intervened upon included role transition (19.4%; e.g., changing
place of residence), interpersonal sensitivity (19.4%; chronic social discomfort), and grief (12.8%; an AIDS-related bereavement).

Treatment outcomes. Repeated measures ANOVA were conducted to compare scores on the study’s four outcome measures (BDI-II, OQ Total, PSRS, and UCLA Loneliness) from pre- to post-intervention. Results indicated that IPT participants reported significant reductions on the BDI-II from pre-intervention ($M_{pre} = 28.7$, $sd = 11.2$) to post-intervention ($M_{post} = 23.5$, $sd = 12.5$) compared to UCC participants ($M_{pre} = 26.1$, $sd = 10.8$; $M_{post} = 25.6$, $sd = 13.5$), $F(1,77)=6.05$, $p < .05$ (partial eta squared=.07). IPT participants also reported significant reductions on the OQ Total Scale compared to UCC participants. Specifically, IPT participants’ scores showed greater decreases from pre-intervention to post intervention ($M_{pre} = 87.0$, $sd = 24.0$; $M_{post} = 78.5$, $sd = 31.3$) compared to UCC participants ($M_{pre} = 78.2$, $sd = 22.0$; $M_{post} = 76.7$, $sd = 26.6$), $F(1,77)=4.52$, $p < .05$ (partial eta squared=.06). No “Condition x Time” interaction was found on the UCLA Loneliness Scale ($p=.54$) or the Provision of Social Relations Scale ($p=.45$). See Figure 2.

Clinically Meaningful Change among Study Completers

BDI-II Reliable Change. Of the 31 participants who completed the six-session IPT intervention, 7 participants (22.6%) evidenced clinically-meaningful change on the BDI-II based on cutoff values recommended by Ogles, Lambert, & Masters (1996). Specifically, these participants evidenced a change in BDI-II scores ≥ 9 points and had post-intervention values of 13 or less (calculated from community samples using Reliable Change Index [$RCI = (X_{post} - X_{pre})/S_{diff}$]; Jacobson & Truax, 1991). An additional 5 IPT
participants evidenced reliable change (i.e., BDI-II change of ≥ 9 points but post-intervention values exceeding 13). The remaining IPT participants (n = 19) evidenced no reliable change. No IPT participant evidenced an RCI of reliable deterioration (i.e., RCI < -1.96, this sample). In the UCC Condition, only 3 participants (8.5%) evidenced clinically meaningful change on the BDI-II over the 6-week study period and only one reported reliable change.

OQ Reliable Change. Among treatment completers, 9 IPT participants (29%) evidenced a reduction on the OQ of ≥ 14 points and had final OQ scores of ≤ 63 (defined as standards for determining clinically meaningful change among outpatient/community clinics; Lambert & Finch, 1999). Another 3 IPT participants evidenced reliable change (i.e., a decrease of 9 or more points but post-intervention values greater than 63). The remaining 19 participants evidenced no reliable change. In the UCC Condition, only 5 participants (14.3%) displayed clinically meaningful change on the OQ over the course of study period; 3 UCC participants evidenced reliable change. One UCC participant evidenced an RCI of reliable deterioration. See Table 1 for additional details regarding RCI scores for IPT and UCC participants using an intent to treat approach.

Discussion

Rural areas, which represent nearly 20% of the U.S. population, consistently report 5 to 8% of all AIDS cases in the United States (Schopp, Demiris, & Glueckauf, 2006; CDC, 2005; Steinberg & Fleming, 2001). While it is clear that most persons living with HIV/AIDS in the U.S. reside in large metropolitan centers, high levels of psychiatric distress and loneliness in HIV-infected rural persons portend that many members of this
group are in urgent need of mental health support services. Although depression is amenable to treatment in many HIV-infected persons (Cook et al., 2004), geographic isolation, physical limitations, and confidentiality concerns preclude many HIV-seropositive persons from accessing traditional mental health treatment facilities in rural areas.

Results from this pilot RCT suggest that telephone-delivered interpersonal therapy constitutes one intervention approach capable of reaching many HIV-infected rural persons. Participants who completed the study’s brief IPT intervention evidenced significant reductions in psychological and depressive symptoms. In fact, nearly 30% of telephone IPT participants who completed the intervention reported clinically-meaningful reductions in psychological symptoms as measured by OQ Total Scores. This rate compares favorably with those reported in the psychotherapy-outcome literature which shows that, in general, 30% of clients in therapy report clinically-meaningful improvements over the course of treatment, 60% evidence minimal or no change, and 10% show clinical deterioration (Lambert & Ogles, 2004). While approximately 14% of usual care participants evidenced clinically meaningful changes on OQ Total Scale scores, this was only one-half the proportion of IPT participants (i.e., 29%) who reported clinically-meaningful changes on this measure. Regression to the mean in patients with mild to moderate depression and “Hawthorne Effects” (e.g., simply being enrolled in a mental health intervention and periodic contact with study staff) may explain, in part, the clinically-meaningful reductions in psychological symptoms observed in a small number of control participants (Wagner et al., 2000).
While prior research has investigated the effectiveness of telephone-delivered group interventions for HIV-infected rural persons (Heckman & Carlson, 2007), this is the first controlled clinical trial that investigated the use of telephone technology to deliver individualized therapeutic interventions to members of this clinical population. The group-format, coping improvement interventions tested by Heckman and Carlson (2007) focused predominantly on cognitive-behavioral coping techniques. Perhaps one reason that their intervention was unsuccessful is that it was not sufficiently contextualized for persons in rural environments (e.g., their intervention focused too much on increasing adaptive coping and not sufficiently on reducing perceptions of loneliness, increasing opportunities for social engagement, and reducing sources of interpersonal conflict). Accordingly, it may be that IPT-oriented interventions that focus on interpersonal stressors (e.g., grief and role transitions) and that intervene at the individual level may be more beneficial for HIV-infected rural individuals.

Markowitz, Klerman, and Perry (1992) describe several aspects of IPT that may be particularly relevant when working with HIV-infected persons, such as education about depressive symptoms (e.g., lack of concentration, fatigue). The realization that such symptoms are likely related, at least in part, to a curable psychiatric illness—as opposed to being related solely to one’s HIV disease—can foster hope. The present-focused orientation of IPT also helps clients to avoid “if only” scenarios (e.g., blaming oneself for their HIV infection). Emphasizing issues related to grief and bereavement also enables participants to explore and discuss issues of “survivor’s guilt” related to outliving one’s partners and peers. Finally, the time-limited nature of the treatment also
invokes a sense of urgency, helping to maximize orientation to task in therapy sessions (Markowitz et al., 1992).

The current study’s attrition rate of 24.4% for IPT participants was higher than the mean attrition rate of 7.6% reported by Mohr, Vella, Hart, Heckman, and Simon (in press) in their meta-analysis of telephone-based interventions for the treatment of depression. However, this study’s intervention attrition rate of was more comparable to the overall attrition rate of 15.5% reported by Heckman and Carlson (2007) in their group-format interventions for HIV-infected rural persons. Additionally, this percentage was much lower than attrition rates found in face-to-face clinical trials that tested interventions to reduce depression (e.g., 14% to 65%; Mohr et al., 2007).

The current study had several limitations. The sample size of this pilot study was relatively small (n =79). While intervention-outcome analyses were sufficiently powered to detect large effect sizes, the study was underpowered to detect effect sizes that were small or moderate (Cohen, 1988). All data collected from participants were self-report in nature and may have been subject to social desirability, demand characteristics, and recall bias. Additionally, no data measuring health outcomes were obtained. Future investigations with members of this population should obtain additional types of data, such as medical chart review data and/or observer-reports (e.g., partner report of psychological symptoms). Furthermore, all participants were connected with AIDS service organization. The current study did not enroll HIV-infected rural persons who were unaffiliated with ASOs and who may have had even more severe mental health needs. Finally, based on a review of national AIDS surveillance data, this study, most
likely, under-sampled rural African Americans, persons infected with HIV through intravenous drug use, and HIV-infected persons from the Southern states (CDC, 2004; Hall, Li, & McKenna, 2005).

In spite of these limitations, this is the first known study of an individual-level, telephone-delivered interpersonal therapy intervention for persons living with HIV in rural communities. Enthusiasm for the study’s promising intervention-outcome findings must be tempered given the study’s limitations. Nonetheless, given the serious mental health needs of many rural persons living with HIV/AIDS, future research should continue to determine if telephone-delivered, interpersonal therapy is an appropriate form of intervention for this group. If future studies conclude that interpersonal therapy delivered via telephone is effective for this group, AIDS service organizations and mental health practitioners can provide a relatively user-friendly and potentially cost-effective form of intervention that circumvents geographic and psychological barriers and reaches a large number of rural persons living with HIV/AIDS who might otherwise lack access to contemporary mental health treatment services.
References


Randomized controlled trial of non-directive counseling, cognitive-behavior
therapy and usual general practitioner care in the management of depression as
well as mixed anxiety and depression in primary care [Monograph]. *Health
Technology Assessment, 4*(19), 1-84.

psychotherapy of depression: A brief, focused, specific strategy*. Northvale, NJ:
Jason Aronson.

*The use of psychological testing for treatment planning and outcome assessment*

*Administration and Scoring Manual of the Outcomes Questionnaire (OQ-45.1).*
Salt Lake City, UT: IHC Center for Behavioral Healthcare Efficacy.

M. Lambert (Ed.), *Handbook of Psychotherapy and Behavior Change* (5th ed.),

Human Immunodeficiency Virus in rural areas and small cities of the southeast:


AIDS-related grief and coping with loss among HIV-positive men and women.  
*Journal of Behavioral Medicine, 26,* 165-181.


Table 1
Clinically-Meaningful Change and Reliable Change Indices for IPT and Usual ASO-based Care Completers and Intent to Treat Participants

<table>
<thead>
<tr>
<th></th>
<th>Clinically Meaningful Change</th>
<th>Reliable Change</th>
<th>No Change</th>
<th>Reliable Deterioration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IPT</td>
<td>UCC</td>
<td>IPT</td>
<td>UCC</td>
</tr>
<tr>
<td>Completers BDI-II</td>
<td>7/31 (22.6%)</td>
<td>3/35 (8.5%)</td>
<td>5/31 (16.1%)</td>
<td>1/35 (2.9%)</td>
</tr>
<tr>
<td></td>
<td>9/31 (29.0%)</td>
<td>5/35 (14.3%)</td>
<td>3/31 (9.7%)</td>
<td>2/35 (5.7%)</td>
</tr>
<tr>
<td>OQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intent to Treat BDI-II</td>
<td>7/41 (17.1%)</td>
<td>3/38 (7.9%)</td>
<td>5/41 (12.2%)</td>
<td>1/38 (2.6%)</td>
</tr>
<tr>
<td></td>
<td>9/41 (22.0%)</td>
<td>5/38 (13.2%)</td>
<td>3/41 (7.3%)</td>
<td>2/38 (5.3%)</td>
</tr>
<tr>
<td>OQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure Captions

Figure 1. Participant flow chart, randomization process, and completion status

Figure 2. BDI-II and OQ pre- and post-intervention scores for IPT Telephone and Usual ASO-based Care participants
Assessed for eligibility (n = 96)

Excluded (n = 17) for:
- Not meeting inclusion criteria (n=12):
  18 years of age, self-report of HIV+ status, residence in community of <50,000, symptoms of psychological distress
- Not completing baseline questionnaire (n=5)

Randomized (n = 79)

Assigned to Telephone (n = 41)
  Completed post-intervention questionnaire (n = 31)

Assigned to Usual ASO-based Care (n = 38)
  Completed post-intervention questionnaire (n = 35)
Fig. 2:

- **BDI-II Values**
  - IPT: Pre - 29, Post - 21
  - UCC: Pre - 27, Post - 23

- **OQ Total Scale Scores**
  - IPT: Pre - 85, Post - 77
  - UCC: Pre - 82, Post - 75