

An Evaluation of Crisis Hotline Outcomes Part 1: Nonsuicidal Crisis Callers

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The effectiveness of telephone crisis services/hotlines, examining proximal outcomes as measured by changes in callers' crisis state from the beginning to the end of their calls to eight centers in the U.S. and intermediate outcomes within 3 weeks of their calls, was evaluated. Between March 2003 and July 2004, 1,617 crisis callers were assessed during their calls and 801 (49.5%) participated in the follow-up assessment. Significant decreases in callers' crisis states and hopelessness were found during the course of the telephone session, with continuing decreases in crisis states and hopelessness in the following weeks. A majority of callers were provided with referrals and/or plans of actions for their concerns and approximately one third of those provided with mental health referrals had followed up with the referral by the time of the follow-up assessment. While crisis service staff coded these callers as nonsuicidal, at follow-up nearly 12% of them reported having suicidal thoughts either during or since their call to the center. The need to conduct suicide risk assessments with crisis callers and to identify strategies to improve referral follow-up is highlighted.

Telephone crisis services (TCS) have been providing crisis intervention and referral services in the United States for over 40 years. The conceptual bases for crisis intervention include: (1) crises are time limited and present an opportunity for positive or negative outcomes, based on the application of effective or maladaptive coping, respectively; (2)

many maladaptive behaviors such as alcohol use, interpersonal violence, or suicidal behavior involve maladaptive responses to crises; (3) crises are characterized by increases in anxiety, which produce cognitive constriction and attenuate problem-solving ability; and (4) due to the failure of the usual coping mechanisms and heightened vigilance, indi-

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viduals are more open to intervention (Caplan, 1964; Rapoport, 1965). The implications of these concepts for intervention suggest that interventions must be readily accessible to provide adaptive responses to crises to attenuate maladaptive outcomes; due to the reduction in defenses, a relatively brief intervention may have a significant impact; and a collaborative intervention which includes active problem solving and mobilization of internal and external resources is necessary to take advantage of the opportunity for growth presented by crises (Baldwin, 1979; Brockopp, 1973).

Based on this rationale, a model of crisis services has evolved that consists of 24-hour telephone services (often supplemented by mobile outreach teams) staffed by specially trained professionals and/or paraprofessional volunteers who provide one-time or time-limited interventions to clients at no charge. A consensus has evolved around a four to six step problem-solving intervention model first adopted by the Los Angeles Suicide Prevention Center (Farberow, Heilig, & Litman, 1968), consisting of establishing rapport; defining the problem(s) (including assessing risk for suicide); exploring affect (including reducing anxiety and other affects that attenuate problem solving); exploring callers' coping repertoires; and developing alternatives for addressing the problem (i.e., a specific plan of action and/or referral to informal or formal resources). In addition to a variety of crisis situations, TCS provide immediate responses to suicidal callers. For callers in less acute suicidal states who may be at the ideation or planning stage, TCS aim to identify the precipitants of the suicidal state, generate alternative coping strategies, and mobilize supports for callers. For callers in more acute, imminent suicidal states, TCS may engage in more active interventions such as obtaining the location of callers through direct request, tracing calls, or employing caller identification; and, sending community emergency response personnel. The goal of telephone crisis intervention, then, is to reduce maladaptive cognitive and affective components of the crisis state, to attenuate

maladaptive coping, and to help the caller find a plan for coping with the situation that precipitated the crisis and/or another helping agency that can provide further assistance.

Evaluations of TCS have included caller feedback/satisfaction, assessments of helping processes and proximal outcomes (changes in caller crisis or suicidal status), rates of follow-up with referrals, and assessments of distal outcomes consisting of changes in community suicide rates. The focus of this study is outcomes for nonsuicidal crisis callers to TCS. Therefore, studies of crisis and referral outcomes for these callers are reviewed. A companion article addresses TCS responses to suicidal callers (Gould, Kalafat, Harris Munfakh, & Kleinman, this issue).

Early process evaluations of telephone counseling interventions focused on helper-offered conditions of empathy, warmth, and genuineness (Rogers, 1957), which are representative of helping approaches of many telephone crisis centers to this day. Studies found moderate levels of these conditions as rated on simulated calls and role-plays, variations between centers, and increased levels associated with training and experience (Bleach & Claiborn, 1974; Caruthers & Inslee, 1974; France, 1975; Kalafat, Boroto, & France, 1979; O'Donnell & George, 1977); however, the relationship between these conditions and call outcomes was not assessed. Other studies have assessed the presence and timing of the components of the helping model and examined their relationships to caller outcomes through follow-up calls to callers (Echterling & Hartsough, 1989; Echterling, Hartsough, & Zarle, 1980; Young, 1989). The presence and timing of these components were related to positive caller feedback and outcomes such as relief of distress, confidence, and emotional awareness.

Assessments of callers' follow through with referral recommendations have also been conducted (Buchta, Wetzell, Reich, Butler, & Fuller, 1973; Paul & Turner, 1976; Slaikeu, Tulkin, & Speer, 1975; Slaikeu & Willis, 1978). In general, studies found follow through rates of approximately 50%. Two early studies that rated the appropriate-

ness of referrals provided by telephone staff raised concerns about the accuracy of referrals (Bleach & Claiborn, 1974) and their appropriateness for the caller's problem (Apsler & Hodas, 1975). Whether or not callers follow through with referrals may also be a function of such variables as caller motivation and availability of other sources of support (Slaikue et al., 1975; Slaikue & Willis, 1978). Also, it may be that effective efforts to reduce callers' anxiety or resolve their concerns may attenuate motivation to contact referrals. Finally, counselor skill may affect referral follow through; for example, Slaikue et al. (1975) found that callers who followed through rated the counselor who provided the referral as more helpful than those who did not. In addition, Paul and Turner (1976) found that provision of incentives for crisis staff's conscientious provision of referrals increased rates of follow through.

To date, there are no studies that evaluate a primary aim of crisis services—to reduce the crisis states of callers from their presenting levels at the start of the call—and to provide a specific plan of action or referral for the caller's presenting problem. The purpose of our study was to evaluate the effectiveness of TCS for achieving positive client outcomes as indicated by changes in callers' crisis states from the beginning to the end of their calls to participating centers (immediate outcomes), and again within 3 weeks of their calls (intermediate outcomes). Callers' recollection of and follow through with plans of action and/or referrals received during their calls were also evaluated. The companion article (Gould et al., this issue) addresses immediate and intermediate outcomes for suicidal callers.

METHOD

Sample

Telephone Crisis Services. Eight TCS were selected on the basis of organizational stability (in operation at least 5 years), sufficient call volume, quality assurance pro-

cesses, use of internal call monitoring, and willingness to adopt agreed upon standardization of call record keeping and evaluation procedures. An additional three centers had been originally recruited, but dropped out of the study because one had assumed a new service and could not take on additional projects; another conducted face-to-face outreach with all callers, and thus was not a typical telephone hotline; and the staff of the third refused to collect evaluation data. Seven of the participating centers were members of a national 1-800-SUICIDE network. The eight centers were located in six states (2 midwest, 4 northeast, 1 south, and 1 west). Telephone counselors in these centers were either paid (4), volunteer (3), or a mixture of both paid and volunteer (1). The annual call volume in these centers ranged from 7,993 to 85,000 calls per year. The method used by crisis centers to select which counselors would participate in the project varied. Three crisis centers required all of their counselors to participate, and in two other centers counselors participated on a volunteer basis. The remaining three centers used specific criteria to select only a portion of their counselors: in one, all but the overnight staff were required to participate; in the second, only paid staff was selected to participate; and in the third center only those with extensive crisis counseling experience were selected. A total of 240 counselors in the eight centers conducted the baseline assessment with callers. The number of counselors participating in each center ranged from 9 to 70. The average number of baseline assessments conducted per counselor in each center ranged from 2 to 33.

Baseline Cohort. Adult nonsuicidal individuals experiencing a crisis who called one of the eight recruited TCS were the targeted population for this study. Crises were defined as upset states precipitated by events with which individuals currently felt unable to cope. Between March 2003 and July 2004, telephone crisis counselors conducted the baseline assessment with 2,702 of the 5,168 eligible callers (52.3% participation rate). Of these, 1,613 were crisis callers (25.9% male

and 74.1% female). Gender was not coded at baseline for four crisis callers. The majority of assessed crisis callers (90.1%; $n = 1,357$) called the center's local crisis hotline telephone number and 149 (9.9%) called a national 1-800 network that connected callers to local crisis lines.

Of the 5,168 eligible callers, 2,466 (47.7%) callers were not assessed for the following reasons: call volume too high (788), callers' suicide risk status too high (654), callers refused/hung up (648), counselor thought not appropriate to assess (226), and phone problems (150).

Out of the 87,459 calls received by the participating counselors, 82,291 (94.1%) callers met exclusion criteria and were not assessed. Of the excluded callers, 31,862 (38.7%) individuals called only for information and referral but were not in crisis; 16,664 (20.3%) were third-party callers also not in crisis; 13,986 (17.0%) were intoxicated and/or belligerent callers; 12,619 (15.3%) were frequent chronic callers; 2,732 (3.3%) were minors; 2,381 (2.9%) were non-English speaking; and 2,167 (2.6%) callers were not in a mental state fit to complete the assessment.

Follow-Up Cohort. Between April 2003 and August 2004, of the 1,617 crisis callers who completed the baseline assessment, follow-up assessments were conducted with 801 (49.5%) callers (23.6% male and 76.4% female). Follow-up assessments were conducted between 1 and 52 days from the baseline assessment date, with the average being 13.5 days. For these callers, the age ranged from 18–85, and the mean was 37.6 years. The ethnic distribution was 57.3% White, 26.0% African American, 13.1% Hispanic, 1.4% other, 1.3% Native American, and 1.0% Asian. Ethnicity was not coded for one caller.

For the 816 (50.5%) that did not participate in the follow-up, the reasons for not participating were: 470 (57.6%) refused at baseline, 124 (15.2%) gave the crisis counselors invalid contact information, 69 (8.5%) were not asked if they wanted to receive a follow-up call, and 153 (18.7%) gave consent for follow-up contact but the follow-up in-

terviewers received passive or active refusals at follow-up. Common reasons for counselors not asking for consent for the follow-up call were that the caller had to quickly terminate the call, or hung up.

Crisis callers who participated in the follow-up assessment were similar to nonparticipants with regard to crisis state at the beginning of the call and to changes in their crisis state from the beginning to the end of the call. However, crisis callers who were followed were significantly more overwhelmed and received significantly more referrals from counselors than crisis callers who were not followed (Table 1).

Measures

An advisory board, consisting of experts in crisis lines, risk assessments, and evaluation; and a Crisis Centers Directors Board, consisting of the directors from six telephone crisis services originally recruited to participate, were created. With the assistance of these two boards, and SAMHSA staff, the client-centered outcomes were identified and final drafts of the baseline and follow-up measures and the implementation plan were prepared for piloting. The final baseline assessment also incorporated recommendations received from counselors who piloted the assessment with 103 callers in four centers. Manuals were developed to train the crisis counselors and the follow-up interviewers.

Profile of Mood States: Modified (POMS-M). Early work in the field of crisis intervention included descriptions of the crisis state based on observations of individuals' responses to disasters, war, and other situational crises (Stein & Lambert, 1984). These descriptions include cognitive components such as confusion, overwhelmed, and constricted problem solving; affective components such as anxiety, helplessness, and anger; and cognitive-affective states such as hopelessness and depression. Halpern (1973) developed a self-report measure that consisted of statements reflecting most of these states and found that it reliably distinguished be-

TABLE 1
Crisis Callers: Comparison of Follow-up Participants and Nonparticipants

Time 1	Followed (<i>n</i> = 801)		Not Followed (<i>n</i> = 816)			
	Mean	SD	Mean	SD		
Total POMS-M	33.33	(11.12)	32.03	(11.77)	<i>F</i> = 2.16	<i>ns</i>
Confusion	6.83	(3.30)	6.71	(3.34)	<i>F</i> = 0.32	<i>ns</i>
Depression	7.74	(3.25)	7.62	(3.39)	<i>F</i> = 0.23	<i>ns</i>
Anger	6.09	(3.56)	5.59	(3.62)	<i>F</i> = 3.08	<i>ns</i>
Anxiety	7.52	(3.20)	7.35	(3.38)	<i>F</i> = 0.96	<i>ns</i>
Helpless	2.42	(1.40)	2.30	(1.41)	<i>F</i> = 3.44	<i>ns</i>
Overwhelmed	2.98	(1.19)	2.78	(1.32)	<i>F</i> = 6.81**	
Hopelessness	2.55	(1.03)	2.48	(1.04)	<i>F</i> = 4.81	<i>ns</i>
Initiated Rescue Procedure	2	0.3%	1	0.1%	$\chi^2 = .00$	<i>ns</i>
Referral Given	541	68.0%	428	53.4%	$\chi^2 = 34.73$ ***	

p* < .01; *p* < .001

tween individuals experiencing different types of crises (e.g., interpersonal, divorce, bereavement) and a non-crisis comparison group. For the purposes of the present study, we sought an instrument that described components of the crisis state and was brief, sensitive to short-term changes, and psychometrically sound. The POMS-A met these criteria and an adaptation of it was used to assess callers' crisis state or level of distress. The POMS has been utilized in hundreds of investigations to measure transient mood states (McNair, Lorr, & Droppleman, 1992). The shortened version of the POMS-A (24 items) is suitable for use with adolescents as well as adults (Terry, Lane, Lane, & Keohane, 1999). The POMS-A uses a "right now" time frame. Based on factor analytic studies (McNair et al., 1992; Norcross, Guadagnoli, & Prochaska, 1984; Rhoades, Grabowski, Elk, & Cowan, 1993; Usala & Hertzog, 1989), six factors have been derived from the POMS and POMS-A; namely, *tension-anxiety*, *depression-dejection*, *anger-hostility*, *fatigue-inertia*, *confusion-bewilderment*, and one positive state, *vigor-activity*. To facilitate the use of this assessment during a crisis call, the measurement was shortened by excluding two factors, *fatigue-inertia* and *vigor-activity*. The lowest loading item, one for each of the domains to

be administered, was also eliminated. This reduced the number of items to 12. Two additional items, *helpless* and *overwhelmed*, were then added to the assessment to capture the words most commonly expressed by crisis callers to describe how they are feeling. A total score on the POMS-M was the sum of all 14 items. Callers were asked to rate their feelings on a 5-item scale (*Not at all*, *A little*, *Moderately*, *Quite a bit*, *Extremely*) near the beginning of the call to the center, again at the end of the call, and at the follow-up interview.

Hopelessness. Callers were also assessed for feelings of hopelessness by two sets of questions. Callers were first asked, "To what degree do you feel that there is no hope for improvement in your situation in the future? As you look into the future, do you see things getting better in your life?" Responses were rated from 1 (*Nothing will change, things will stay bad*) to 5 (*Sure that the future will be better*). The response codes were recoded so that higher scores indicated more hopelessness. The following question was, "To what extent does the following belief, which I am about to say, describe how you are feeling right now? I don't think I can go on." Responses were rated on the scale from *not at all* to *extremely*. Hopelessness was the average of the

scores from both items. These questions were asked at the beginning of the call to the center and repeated at the end of the call and at the follow-up interview.

The remaining measures were asked only during the follow-up interview.

Plan of Action Compliance. This set of questions assessed whether callers agreed with and followed through with the plans of action developed by the crisis counselor with the caller. Action plans ranged from “looking for a new job” to “taking a walk to calm down.” If callers did not agree with the plan, or if they did not completely follow through with the plan, then their verbal responses as to why they did not agree or follow through were recorded as text responses.

Service Utilization and Compliance. These questions assessed whether callers agreed with and followed through with referrals given to them. Callers were asked whether they remembered receiving referrals, the type of referral(s) received (emergency services, mental health services, social services, and information and referral services), the extent of their agreement with the referral(s), and the extent of follow through. If callers did not agree with the referral, or if they did not follow through with the referral, then their verbal responses as to why they did not agree or follow through were recorded as text responses. These narrative responses were recorded by two independent raters. Examples of codes were, “services too far away,” and “unable to pay for service.”

Client Feedback on Call. Two open-ended questions about what was helpful or not helpful about the call initiated the assessment: “Thinking back to the call you placed to the crisis line, can you tell me how the call was helpful to you?” “Can you tell me what was not helpful about the call?” Follow-up interviewers made verbatim notes of callers’ responses to these questions. Twenty-one close-ended questions followed the open-ended assessment and provided ratings in three areas: helper interventions, emotion regulation, and overall efficacy, but the responses to the close-ended questions are the focus of another paper.

Training Procedures

Center Staff. The research team trained the crisis centers’ staff on the baseline administration protocols. In five centers, the research team directly trained the counselors. In the remaining three centers, the research team trained one or more crisis center members who then trained the centers’ counselors. The suicide risk assessment protocol is described in the companion paper (Gould et al., this issue). For nonsuicide crisis calls, counselors were instructed to conduct the POMS and hopelessness assessments on all of the calls. Criteria for excluding calls from the assessment were developed in collaboration with center directors from the advisory board. These were individuals who called only for information and referral but were not in crisis; third-party callers; intoxicated and/or belligerent callers; frequent chronic callers; minors; non-English speaking callers; and callers who were not in a mental state fit to complete the assessment. Aside from inclusion of the POMS and hopelessness, we did not promote any other changes in the centers’ usual crisis procedures or interventions. Counselors were trained to ask questions by incorporating them into their own centers’ standard assessment and intervention procedures and helping styles. This assured that the call would flow smoothly and not feel like a structured interview. For example, counselors were encouraged to use their own language and style to ask questions, and to use common crisis intervention language, such as “it sounds as if” or “I’m wondering.” Also, counselors were trained to not ask questions but to just code the responses if a caller spontaneously provided answers to questions. The training included role-playing and discussions about what was or was not working after each roleplay.

Follow-up Interviewers. To ensure independent follow-up assessments, these interviewers were paid members of the project evaluation staff and not crisis center staff. They had either telephone crisis counseling experience or equivalent clinical training and experience. Training of follow-up interview-

ers included instructions on how to maintain client confidentiality during follow-up contact; how to obtain informed consent; how to administer the assessment in a compassionate manner while retaining control of the interview; and how to conference callers back to the crisis center when they met criteria for the required conference call as described in the safety procedures section. Training was conducted through instruction and role-playing.

Quality Control Procedures

Immediate Outcomes (Baseline). Stipends were provided to each crisis center for a staff member to function as a local data coordinator under the supervision of the center director. The local data coordinators reviewed completed assessments, provided ongoing feedback and training to the counselors, and sent de-identified baseline data and callers' contact information to the Project Coordinator. Local data coordinators were also responsible for reviewing the centers' call records and comparing them to completed assessments to ensure that all eligible callers were being assessed. If assessments were not conducted with potentially eligible callers, the coordinators reviewed the call records for these callers with the crisis counselors. The local data coordinators and the Project Coordinator communicated via telephone and e-mail on a weekly basis to discuss the quality of the data collection and clarify protocol procedures.

For additional quality control purposes and to ensure the reliability of the baseline assessments, on-site silent monitoring was conducted on approximately 10% of calls in each of the centers. Silent monitoring assessed whether counselors were following the project's protocol. The monitors, drawn from the centers' local communities or from the centers' staff, were hired by and reported to the research team. As the monitor listened to a call, s/he completed a baseline assessment that was later compared to the assessment completed by the counselor. At the end of the call, the monitor noted any discrepancies

between the counselor's assessment and their monitoring assessment and provided feedback to the counselor.

Intermediate Outcomes (Follow-up). Eighteen follow-up interviewers participated in the follow-up data collection. Interviewers were monitored during their first follow-up assessment. The Project Coordinator monitored their audiotaped interviews and assessments, and provided feedback to the interviewers in order to improve the quality of their assessments.

Consent and Safety Procedures

Immediate Outcomes (Baseline). The project was approved for a waiver of consent for use of de-identified information gathered during the baseline assessment. The assessment procedures involved no more than minimal risk and were routine for telephone crisis services. Compensation was not offered to callers for completing the baseline assessment because it was included as part of the intervention normally provided to callers (such as a risk lethality assessment and asking callers about their thoughts and feelings).

Using an IRB-approved re-contact consent script, counselors asked callers with whom they had conducted baseline assessments if they wished to receive a follow-up call from the research team in a week or two to see if they were interested in participating in a follow-up assessment. To protect the confidentiality of callers during the re-contact efforts, counselors asked callers how and when they wanted to be contacted, as well as what type of message (if any) could be left on an answering machine or with the person picking up the telephone.

Intermediate Outcomes (Follow-up). Active consent to participate in the follow-up telephone survey, and for the research team to access callers' baseline response and referral information, was obtained using an approved telephone consent script at the start of the follow-up call. A waiver of documentation of consent was obtained so that consents could be audiotaped rather than written. For quality control purposes, approximately 10%

of each follow-up interviewers' assessments were audiotaped with callers' consent to do so. Callers participating in the follow-up assessment received a \$25 money order.

Safety Procedures. The follow-up assessment included criteria to determine whether callers needed intervention, which was defined as callers having made plans or tried to hurt or kill themselves since speaking with the center, or having serious intent to die. The method for getting help to callers consisted of follow-up interviewers re-connecting the caller to their crisis center while the interviewer remained on the line to ensure that the caller was in communication with the center. If callers were unable to participate in a call with their center immediately after completing their interviews, follow-up interviewers obtained callers' consent for the center to contact them. In this last instance, the follow-up interviewer contacted the center and gave them the caller's contact information and details as to why the caller needed intervention.

A confidentiality certificate was obtained from SAMHSA's Department of Health and Human Service. The project's protocol was approved by Rutgers Graduate School of Applied and Professional Psychology and the New York State Psychiatric Institute/Columbia University's Institutional Review Boards.

Analytic Strategy

The primary sampling unit of the study was crisis center and the secondary sampling unit was caller within center. Thus, we examined the extent to which within-center clustering existed in order to determine whether this clustering variable needed to be included in the analyses. The sample clusters (center) had little impact on outcomes (distress [as measured by the POMS-M], intent to die, and hopelessness) as indicated by the intraclass correlation coefficients, which were all close to zero (ranging from .004 to .05). Therefore, the use of mixed-effects linear models to account for the clustering variable of center was unnecessary. Center was included as a covariate in the analyses.

A repeated measures design was employed to examine changes over time, always employing center as the between subjects factor. The measures were assessed at three time points: near the beginning of the call (Time 1), at the end of the call (Time 2), and at follow-up (Time 3). The repeated response measures for the crisis callers were total POMS-M score, the four component scores derived from the POMS-M, and hopelessness.

Chi-square tests comparing males to females on problems mentioned at baseline were performed. Crisis callers who were followed were compared to those who were not followed on baseline measures at the beginning of the call, by means of univariate analyses of variance. Interactions between follow-up status and changes from Time 1 to Time 2 were examined using two-way analyses of variance.

Immediate outcomes (Time 1 to Time 2) and intermediate outcomes (Time 1 to Time 2 to Time 3) were assessed by a repeated measures design, including center as the between subjects factor. Also assessed by repeated measures were immediate and intermediate outcomes by type of initial problem.

The statistical analyses were conducted with SPSS statistical software (version 12.0). Given the number of comparisons, results were considered significant at $\alpha < .001$, but results at $\alpha < .01$ are presented in the tables.

RESULTS

Presenting Problems

Callers presented at the center with a variety of problems including abuse/violence (10.8%), addictions (13.0%), base needs (18.7%), interpersonal problems (67.4%), mental health (48.2%), physical health (13.4%), work (9.9%), and other problems (13.7%).

Immediate Outcomes

Callers' distress, as assessed by the total score on the POMS-M, was significantly

reduced from the beginning of the call (Time 1) to the end of the call (Time 2) ($p < .001$) (see Table 2). There was also a significant reduction on the domains of the POMS-M as well: confusion ($p < .001$), depression ($p < .001$), anger ($p < .001$), anxiety ($p < .001$), helpless ($p < .001$), and overwhelmed ($p < .001$). There was also a significant reduction in callers' level of hopelessness ($p < .001$). Callers with mental health problems were significantly more depressed and hopeless than callers with nonmental health problems ($p < .001$) (Table 3); however, there was no significant interaction between mental health status and time. In other words, a mental health problem did not modify the change from Time 1 to Time 2.

Intermediate Outcomes

There was a significant reduction in callers' distress levels from the end of the call (Time 2) to follow-up (Time 3) as measured by the total POMS-M score ($p < .001$) (see Table 4). Each of the individual scales of the POMS-M and callers' feelings of hopelessness also showed significant reductions over time ($p < .001$). Mental health problems did not modify the changes from the end of the call (Time 2) to follow-up (Time 3), as indicated by the nonsignificant interaction effects of problem by time.

Suicidal Thoughts at Follow-up. At follow-up, 94 (11.7%) of the 801 crisis callers reported that they had suicidal thoughts since their call to the crisis center. When these callers were asked if they were having these thoughts when they initially called the center, 52 (55.3%) said yes, 35 (37.2%) said no, and 7 (7.4%) callers said they did not remember. Of the 52 callers who said they had suicidal thoughts at baseline, 27 callers (51.9%) said they told the counselor about their thoughts, 17 (32.7%) said they did not tell the counselor, and 8 (15.4%) said they did not remember. Compared to the crisis callers who did not report any suicidal thoughts since their initial call, the 94 crisis callers who reported suicidal thoughts were significantly more distressed, as indicated by their total and component scores on the POMS-M and hopelessness scores at follow-up (Time 3) (Table 5). They were also significantly more depressed at the beginning of the baseline call (Time 1) and there was a tendency for these callers to be more helpless and hopeless ($p < .01$) at the baseline (Time 1) and more hopeless ($p < .01$) at the end of calls (Time 2).

Referrals

Out of the 1,617 callers who participated in the baseline assessment, 969 (59.9%) were given a new referral, of which 67.9%

TABLE 2
Crisis Callers: Immediate Outcomes (n = 1,617)

	TIME 1		TIME 2		Main Effect of Time
	Mean	SD	Mean	SD	
Total POMS-M	32.72	(11.46)	22.98	(12.54)	$F = 968.47^{***}$
Confusion	6.79	(3.31)	4.59	(3.08)	$F = 618.58^{***}$
Depression	7.67	(3.32)	5.54	(3.40)	$F = 582.55^{***}$
Anger	5.87	(3.60)	4.01	(3.36)	$F = 398.41^{***}$
Anxiety	7.44	(3.27)	5.32	(3.23)	$F = 471.23^{***}$
Helpless	2.36	(1.41)	1.55	(1.27)	$F = 352.74^{***}$
Overwhelmed	2.89	(1.26)	2.01	(1.29)	$F = 494.13^{***}$
Hopelessness	2.51	(1.04)	2.08	(0.90)	$F = 291.72^{***}$

Note. Significant differences over time for all measures at $p < .001$.

$^{***}p < .001$

TABLE 3
Crisis Callers: Immediate Outcomes by Initial Problem

	Mental Health (<i>n</i> = 771)				Non-Mental Health (<i>n</i> = 826)				Main Effect of Problem	Interaction Effect of Problem by Time
	Time 1		Time 2		Time 1		Time 2			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Total POMS-M	33.70	(11.25)	24.76	(12.79)	31.81	(11.56)	21.21	(12.03)	<i>F</i> = 6.52**	<i>F</i> = 0.03
Confusion	6.79	(3.39)	4.88	(3.17)	6.80	(3.23)	4.33	(2.94)	<i>F</i> = 2.55	<i>F</i> = 0.47
Depression	8.18	(3.15)	6.14	(3.42)	7.19	(3.38)	4.97	(3.28)	<i>F</i> = 26.12***	<i>F</i> = 2.22
Anger	5.80	(3.59)	4.12	(3.47)	5.90	(3.60)	3.89	(3.26)	<i>F</i> = 3.28	<i>F</i> = 1.73
Anxiety	7.72	(3.18)	5.86	(3.26)	7.22	(3.33)	4.85	(3.13)	<i>F</i> = 9.61**	<i>F</i> = 0.07
Helpless	2.44	(1.38)	1.63	(1.26)	2.30	(1.43)	1.48	(1.27)	<i>F</i> = 5.07	<i>F</i> = 4.56
Overwhelmed	2.97	(1.21)	2.17	(1.30)	2.82	(1.29)	1.87	(1.26)	<i>F</i> = 6.40	<i>F</i> = 0.23
Hopelessness	2.62	(1.06)	2.20	(0.90)	2.41	(1.01)	1.97	(0.89)	<i>F</i> = 16.27***	<i>F</i> = 7.07**

p* < .01; *p* < .001

TABLE 4
Crisis Callers: Intermediate Outcomes (n = 801)

	Time 1		Time 2		Time 3		Main Effect of Time	T2-T3 Contrast
	Mean	SD	Mean	SD	Mean	SD		
Total POMS-M	33.37	(11.07)	24.01	(12.67)	17.30	(13.84)	$F = 258.90^{***}$	$F = 61.56^{***}$
Confusion	6.85	(3.29)	4.76	(3.17)	3.50	(3.23)	$F = 177.13^{***}$	$F = 36.60^{***}$
Depression	7.69	(3.25)	5.71	(3.46)	3.76	(3.48)	$F = 222.03^{***}$	$F = 76.43^{***}$
Anger	6.11	(3.56)	4.22	(3.51)	3.02	(3.27)	$F = 122.69^{***}$	$F = 25.33^{***}$
Anxiety	7.50	(3.19)	5.60	(3.27)	4.45	(3.46)	$F = 133.12^{***}$	$F = 25.36^{***}$
Helpless	2.43	(1.40)	1.62	(1.30)	1.02	(1.31)	$F = 151.42^{***}$	$F = 56.98^{***}$
Overwhelmed	2.99	(1.19)	2.13	(1.30)	1.55	(1.49)	$F = 198.56^{***}$	$F = 46.33^{***}$
Hopelessness	2.55	(1.03)	2.10	(0.88)	1.75	(0.85)	$F = 214.92^{***}$	$F = 64.27^{***}$

Note. Significant differences over time for all measures at $p < .001$.
 $^{***}p < .001$

(658) were to mental health resources. An additional 135 (8.3%) callers were referred back to their current therapist or services. Of the 801 callers who participated in the follow-up, 541 (67.5%) were given a new referral at baseline, of which 72.5% (392) were to mental health resources. An additional 75 (9.4%) callers were referred back to their current therapist or services. The overall referral rate for those who participated in the baseline was 68.3% and the rate of referral for those who participated in the follow-up was 76.9%.

Callers' type of problem had little impact on whether or not a new referral was given. The referral rate by callers' type of problem ranged from 53.1% to 69.6%; however, callers with mental health problems and or base needs problems had the highest referral rate of 69.6%. Of the 392 follow-up crisis callers who were given a new mental health referral, 33.2% had kept or made an appointment with a mental health service in the period between the initial call to the center and the follow-up assessment.

Plans of Action

During the calls, crisis counselors developed "plans of action" with callers. These were plans that callers agreed to follow through with to try to help themselves. Plans

included such strategies as discussing the problem with a partner, calling a lawyer, or engaging in a relaxing and/or diversionary activity. Out of the 801 crisis callers who participated in the follow-up, counselors developed plans with 464 (57.9%). At follow-up, 369 (79.5%) callers recalled the plan and of these, 160 (43.4%) callers completed "all" of the plan, 47 (12.7%) callers completed "most", 54 (14.6%) completed "some," 72 (19.5%) said the plan was still "in process," and 35 (9.5%) callers had not carried out any of the plan. The extent of follow through was not coded for one caller (.3%).

Re-Contact with the Center

Of the 801 crisis callers who participated in the follow-up, 186 (23.2%) callers had re-contact with the crisis center after their initial call with the center. Because the centers categorized these as nonsuicide crisis calls, it is most likely that the callers rather than the centers initiated the re-contact. Of those who had re-contact with the center, 96 (51.6%) callers had one additional contact, 32 (17.2%) had two contacts, 27 (14.5%) had three contacts, 6 (3.2%) had four contacts, 17 (9.1%) had between 5 and 15 contacts, and 8 (4.3%) callers did not remember the number of times. More callers who had re-contact

TABLE 5
Crisis Callers Endorsing Suicidal Thoughts at Follow Up, Compared to Crisis Callers Not Endorsing Suicidal Thoughts at Follow Up

	Endorsing Suicidal Thoughts (<i>n</i> = 94)			Not Endorsing Suicidal Thoughts (<i>n</i> = 706)			Comparison of Means at Follow-Up		
	T1	T2	T3	T1	T2	T3	T1	T2	T3
Total POMS-M									
Mean	35.93	25.85	25.41	32.98	23.81	16.16	2.36 <i>ns</i>	1.38 <i>ns</i>	6.22***
(SD)	(9.56)	(11.33)	(15.20)	(11.29)	(12.89)	(13.24)			
Confusion									
Mean	7.51	5.07	5.17	6.74	4.69	3.21	2.11 <i>ns</i>	1.05 <i>ns</i>	5.63***
(SD)	(2.95)	(2.73)	(3.72)	(3.34)	(3.22)	(3.08)			
Depression									
Mean	8.88	6.45	5.88	7.58	5.63	3.47	3.66***	2.14 <i>ns</i>	6.45***
(SD)	(2.55)	(2.94)	(3.76)	(3.30)	(3.50)	(3.34)			
Anger									
Mean	6.13	4.03	4.52	6.10	4.25	2.83	.09 <i>ns</i>	-.57 <i>ns</i>	4.77***
(SD)	(3.51)	(3.28)	(3.73)	(3.56)	(3.55)	(3.14)			
Anxiety									
Mean	7.98	6.09	5.76	7.45	5.54	4.25	1.50 <i>ns</i>	1.50 <i>ns</i>	4.00***
(SD)	(2.97)	(3.14)	(3.65)	(3.22)	(3.28)	(3.40)			
Helpless									
Mean	2.77	1.72	1.73	2.37	1.62	.93	2.59**	.67 <i>ns</i>	5.65***
(SD)	(1.18)	(1.23)	(1.44)	(1.43)	(1.31)	(1.27)			
Overwhelmed									
Mean	3.06	2.09	2.34	2.97	2.14	1.45	.75 <i>ns</i>	-.34 <i>ns</i>	5.52***
(SD)	(1.08)	(1.20)	(1.54)	(1.21)	(1.31)	(1.46)			
Hopelessness									
Mean	2.85	2.34	2.45	2.51	2.07	1.66	3.01**	2.73**	8.74***
(SD)	(1.03)	(0.93)	(0.98)	(1.03)	(0.88)	(0.79)			

p* < .01; *p* < .001

with the center had thoughts about killing themselves since their initial call to the center (18.8%) than those who had not re-contacted the center (9.6%; $\chi^2 = 10.69$, $p < .001$). On the POMS at the follow-up call (T₃), those who had re-contact with the center as compared to those who had not were significantly more hopeless ($t = 3.48$, $p < .001$), and there were trends toward their being more anxious ($t = 2.90$, $p < .004$), depressed ($t = 3.01$, $p < .003$), confused ($t = 2.97$, $p < .003$), and overall more distressed as measured by the total POMS score ($t = 3.05$, $p < .002$).

Caller Feedback

At follow-up, 801 crisis callers provided a total of 1,345 responses to the positive question and 145 responses to the negative question. Fifteen crisis callers said nothing was helpful about the call.

Two raters, both of whom were experienced crisis counselors, independently coded the positive responses into 17 *a priori* categories, plus six additional categories that were developed to account for the responses generated through content analysis. Negative statements were coded into 15 categories

generated from content analysis of the responses. The raters agreed on 86% of their coding of positive statements and 74% of their coding of negative statements. Disagreements, most of which consisted of one of the raters failing to rate a statement, were resolved through discussion.

Many categories accounted for a small percent of the responses. The top six categories of positive responses (>6% of responses) described *empathic* helpers (7.8% of responses; 13.1% of callers) who *listened and allowed the callers to talk* about their concerns (23.4%; 39.2%), *helped them to calm down* (9.2%; 15.4%), *think more clearly* (6.8%; 11.4%), and *provided options for dealing with their concerns* (15.4%; 25.8%). The services were described as readily available with helpers willing to stay on the line as long as needed (*available, patient*, 6.7%; 11.2%).

The most common problem noted by callers concerned the referrals provided by crisis staff (23.2% of responses; 5.6% of callers). Some of the referrals were not appropriate for the caller's problem, but most of the difficulties with referrals were due to the agencies to which callers were referred. The nature of these difficulties included cost, waiting lists, and unhelpful responses. The next most frequent concerns were about inadequate solutions to problems. The callers raised concerns that they weren't given any help on how to solve their problem: "they just comforted me" (10.8%; 2.6%); or, were given unhelpful suggestions/solutions (10.3%; 2.5%) (e.g., "He said things I already know"). Callers also indicated that crisis staff asked too many questions (10.8%; 2.6%); yet the "calls were too short" (8.3%; 2.0%). Callers also identified unhelpful characteristics of some counselors (e.g., condescending, not concerned, abrupt) (8.8%; 2.1%).

DISCUSSION

Significant changes from the beginning to the end of the calls in desirable directions in affective and cognitive variables that characterize crisis states are consistent with

the hypothesized role of telephone crisis intervention in attenuating crisis states. While demand characteristics may play a role in callers' reports to helpers at the end of calls, the continued or additional reductions in distress reported by callers to independent evaluators at follow-up attenuates this concern to a degree. This finding also suggests that changes occurring during the calls are not transitory phenomena and may set the stage for improved coping with crises.

Nearly a quarter of callers had recontact with the centers for one or more calls. Multiple contacts by callers to crisis centers are a complex phenomenon. For some callers, these may represent a "safety net" when local communities lack sufficient support resources, or simply indicate that crisis services may require more than one contact to meet the needs of callers. For other callers, multiple calls to centers may indicate inappropriate reliance on the service in place of follow through with other options. Further research is necessary to clarify this phenomenon, as repeat callers comprise a substantial proportion of calls to some centers.

Previous research has provided some support for the helping model espoused by many telephone crisis services (Echterling & Hartsough, 1989; Echterling et al., 1980; Young, 1989), and the caller feedback obtained in this study also conforms to the proposed elements of telephone intervention. This feedback described available, empathic helpers who listened to callers and let them talk, helped them to calm down, and provided options for addressing their concerns.

Reduction in distress is one probable mediator of positive resolution of crises. Another element of crisis intervention is the development of a plan of action for addressing the caller's concern and/or the provision of a referral to an agency that can further assist the caller. Of the 801 followed callers, 392 (48.9%) were given mental health referrals at baseline, which is the largest category of referrals given. Of these, 33.2% had made or kept an appointment since their original call. This is lower than the modal 50% follow through rate reported for earlier studies

(Stein & Lambert, 1984), although the types of referrals were not specified in these studies. Reasons for lack of follow through were not obtained in the current study, although some information is available from 45 callers who, in response to the open-ended questions as to what was not helpful about the call, reported problems with the referrals provided by crisis services. These included referrals that were not appropriate for the callers' concerns and problems with the agency to which the caller was referred, such as cost and long waiting times. At least one previous study found that referral follow through can be improved by provision of incentives for staff for more conscientious referrals (Paul & Turner, 1976). Thus, training may ameliorate this problem to some degree. However, as crisis services expand beyond their own communities to statewide or multi-state service areas, they need to maintain more extensive current and accurate referral databases as well. It may also be possible that the attenuation of crisis states achieved by crisis workers may have reduced the distress-mediated motivation to seek further help. Further research is necessary to test this hypothesis of unintended side effects of crisis intervention.

Crisis counselors developed plans of action with 464 (57.9%) callers for addressing their concerns. Of these, 20.5% did not recall their plans, 43.4% reporting having completed the entire plan, 46.8% reported various stages of progress on their plan, and 9.4% had not carried out any of the plan. This is a more encouraging follow through rate than the referral rate. There are several possible reasons for this, including the possibility that the plans are more subject to control by the callers and/or may require less travel and cost. Also, plans of action may be more likely to be developed through a collaborative process. A study by Echterling and Hartsough (1989) provides some support for this. They found a positive relationship between problem solving involving the development of action plans that occurred near the end of calls, as opposed to earlier phases of the calls, and positive call outcomes at follow-up.

Finally, there is concern about the finding at follow-up that 94 (11.7% of 801 crisis callers followed up) reported that they had suicidal thoughts since their original calls to the centers, that 52 of these individuals were having these thoughts when they called the center, and 17 said they had told the counselor about these thoughts. This has two implications for crisis services: first, policies and procedures must be developed regarding assessment of suicidal risk for all crisis callers or for a clearly specified type of crisis caller; and, second, training must be developed that enhances the ability and inclination to systematically assess for suicide risk. The need to systematically conduct evidence-based risk assessments is attested to by the finding that the suicidality of a substantial number of crisis callers was missed during the crisis intervention and that they remained suicidal at follow-up. It should be noted that failure to conduct risk assessments or pursue patients' suicidal communications has also been found among professional mental health providers (Bongar, Maris, Berman, & Litman, 1998; Coombs et al., 1992) and primary care physicians (Adamek & Kaplan, 2000; Williams et al., 1999). These findings for mental health and medical providers have been attributed to the documented lack of training in suicide risk assessment and management for these professionals (Bongar, 2002; Williams et al., 1999). This reinforces the need for training in this area.

The present study has several advantages for examining the effectiveness of telephone crisis services. First, this study provided an empirical evaluation of crisis hotline services using a broader range of potential beneficial effects than used in an earlier generation of evaluation studies. Conceptually and/or empirically based variables associated with crisis states of callers were selected as immediate and intermediate outcomes. Second, while the inclusion of a control condition, for example, a placebo call protocol, was unethical, the repeated measures design allowed each caller to act as his/her own control in the assessment of the client-centered outcomes. Third, the follow-up assessment

provided invaluable information on referral follow through and allowed for an evaluation of the callers by interviewers independent of the crisis centers. Fourth, in contrast with most earlier studies, a multisite methodology was employed, which may increase the generalizability of the findings. While not a representative sample of U.S. crisis centers, a geographically diverse set of centers with varied counselor characteristics (e.g., volunteer or paid; lay or professional) was employed and yielded the largest sample of callers in nonsuicidal or suicidal crises studies to date.

The study has important limitations. First, the study was uncontrolled, as mentioned above, because of ethical concerns about compromising the clinical services provided to persons in crisis. Second, selection biases exist with regard to the centers and counselors who participated. The participating centers and counselors had to be amenable to implementing a series of questions about the caller's current emotional state, which was not compatible with some centers' or counselors' helping model. Furthermore, the implementation of the research protocol may have influenced the nature of the interaction between the helper and the caller. Anecdotal reports from crisis staff were mixed in that some found the questions to be somewhat intrusive, while others indicated that it facilitated their assessment of the caller's state, helped the callers to clarify their feelings, and helped the callers and crisis workers to see the progress achieved during the call. In any case, the results can only be generalized to an intervention model that incorporates some direct assessments of callers' mental state. The efforts of the local data

coordinators, who were reimbursed by the project grant to ensure appropriate data collection, may also represent an additional resource that may not be available in many centers. Third, while selection biases may also exist with regard to the callers who were followed, for crisis callers the concern about possible positive selection bias among callers who consented to follow-up is attenuated by the finding that there were almost no differences between the baseline sample that was not followed up and the follow-up sample in levels of distress at the beginning of their calls nor in changes from the beginning to end of the calls. The lone exception was that followed callers were significantly more overwhelmed at the start of their calls than non-followed callers. Fourth, telephone crisis services did not routinely collect demographic information, such as age and ethnicity, on callers, which precluded our ability to examine the specificity of the findings for different populations of users.

In sum, the information yielded by this study is consistent with the effectiveness of telephone crisis services in reducing the crisis state of callers. However, the lack of a control condition makes it difficult to definitively attribute the improvements in crisis state to the crisis intervention. Based on the feedback provided by callers, as well as the record of referrals and action plans, these centers appear to be providing callers with opportunities to problem solve and identify resources for addressing their concerns. The results also highlight the need to systematically employ reliable and valid risk assessments on crisis calls and to enhance successful referral of callers in need to appropriate services.

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